The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, APRIL 7, 1906. No. 14.

THE SURGICAL TREATMENT OF CANCER OF THE STOMACH.

WITH REPORT OF ONE HUNDRED GASTRIC RESECTIONS.

WILLIAM J. MAYO, A.M., M.D.

Surgeon to St. Mary's Hospital, Rochester, Minn.

In the history of medicine we have no recorded example of a cancer of the stomach cured by medical means. Yet, for some reason or reasons, such cases are sent to the medical men, are entered in the medical wards of hospitals and subjected to treatment which must result in 100 per cent. mortality.

So true is this that, while suspected cases of cancer of the breast, the uterus or the rectum are at once sent to the surgical side from the out-patient department, the possible victim of cancer of the stomach, even with a suspicion amounting almost to a certainty, is still sent to the medical ward.

Yet, of all diseases, cancer of the stomach is most surgical. External carcinomas may be treated by plasters, badly, it is true, but occasionally with success. Superficial epithelial growths sometimes disappear, at least for a time, under the *x*-ray. But gastric carcinoma has not even the small chance of relief which may be afforded by these very uncertain agents.

Appendicitis is now universally conceded to be a surgical disease, yet some cases of appendicitis are known to recover spontaneously and to remain cured. Extra-uterine pregnancy may result in a pelvic hematocele, with spontaneous absorption. But cancer of the stomach has no such possibility. These examples are adduced merely to show the inconsistency of looking for a medical side to this question. It is worse than blunder; it is crime.

Fig. 1.—Showing cancer of pyloric end of stomach, with enlarged glands, and the four blood vessels tied, and line of gastric secretion. A: Left Gastro-epiploica ligated. B: Gastric artery ligated. C: Superior pyloric ligated. D: Gastro-duodenalis ligated.

The practitioner of medicine is not to blame for this state of affairs. He has retained these cases because the surgeon has shown little or no disposition to relieve him of them. There is no controversy, and no one is more anxious to turn these unfortunate victims of a medically incurable disease to the operator than the internist.

Cancer of the stomach is the most frequent form found in the human body and can conservatively be estimated at 30 per cent. of the total. Why has the medical profession been so slow to apply surgical methods to the cure of this common malady? The reasons are two: First, the frightful mortality of the earlier operations which discouraged the patient, the physician

and the surgeon. Second, the difficulties and uncertainties of establishing an early diagnosis.

REVIEW OF SURGICAL TREATMENT.

The radical removal of cancer of the stomach was first performed by Pean in 1879, by Rydygier in the year following, and Billroth in 1881, but his was the first patient who recovered. Pean and Rydygier did not realize the importance of the subject, and it remained for the master mind of Billroth not only to see its possibilities, but to establish the principles of operative relief. These remain to-day much as he left them, the changes being in technic rather than in new discoveries. Almost appalling Billroth in the importance of his early contributions to the operative treatment of gastric carcinoma stands the name of Kocher, and in selected cases the Kocher operation is the method of choice not only in the hands of its distinguished originator, but of practical surgeons the world over.

The death rate among these early operations was appalling. The average mortality of Billroth at the time of his death was over 60 per cent. Haberkant, in 1896, collected 257 pylorectomies, with a mortality of 64.4 per cent. before 1887 and 42.8 per cent. after that time. Mr. Goffe showed that the operative mortality among the English and American surgeons was 76 per cent. before 1890 and 28.5 per cent. after that time. Guinard collated 291 cases between 1891 and 1898, with a death rate of 35.3 per cent.

The lack of enthusiasm of all parties concerned is not to be wondered at, but there has been steady progress, and since 1900 the improvement in operative technic has been so great that the mortality has become reduced to a remarkable degree.

The workers in this field have been comparatively few and the work has been so quietly carried on that the profession does not realize the enormous strides that have been taken. To-day the mortality in the hands of men of experience in the operable cases is probably not above 10 per cent. and in suitable cases nearer 5 per cent. Operations undertaken with the patient in extreme condition from starvation and hemorrhage will continue to show a large death rate.

But these disasters should no more militate against the operation in suitable cases than general suppurative peritonitis should stand in the way of early operation

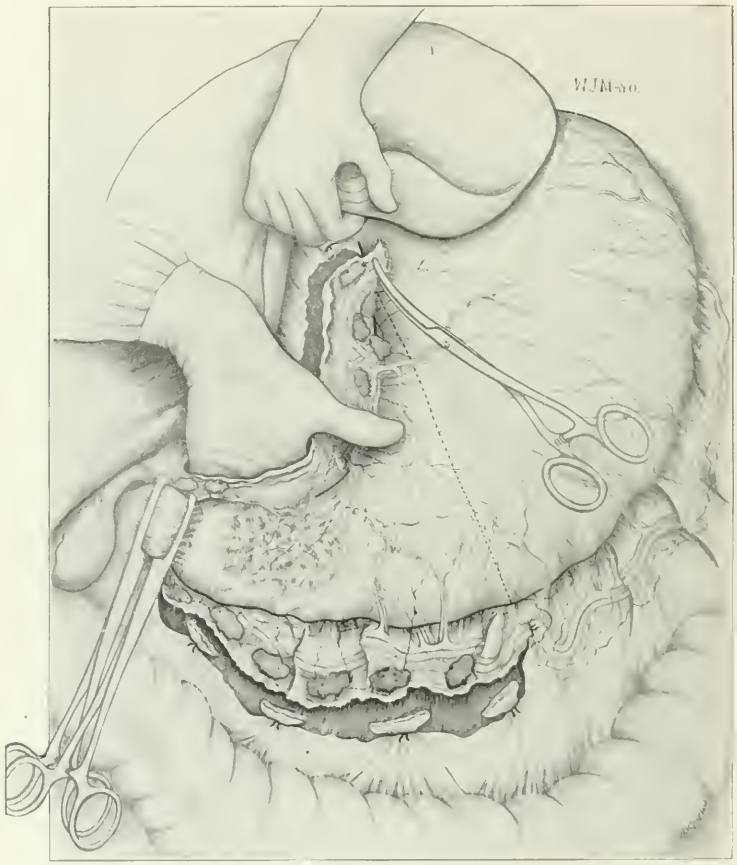


Fig. 2.—Showing duodenum clamped and pyloric end of stomach separated, ready for resection.

for appendicitis. Rather should it lead us to an increased effort to secure the patients during the curable period.

The stomach is a most favorable organ from an operative point of view. It has an abundant blood supply from four sources and the certainty of early wound healing makes plastic surgery safe. The immediate ligation of these four vessels makes radical operation bloodless and devoid of shock exactly as in the case in abdominal hysterectomy. By the use of clamps the entire area can be cleanly excised practically without opening the gastric cavity (Figs. 1 and 2).

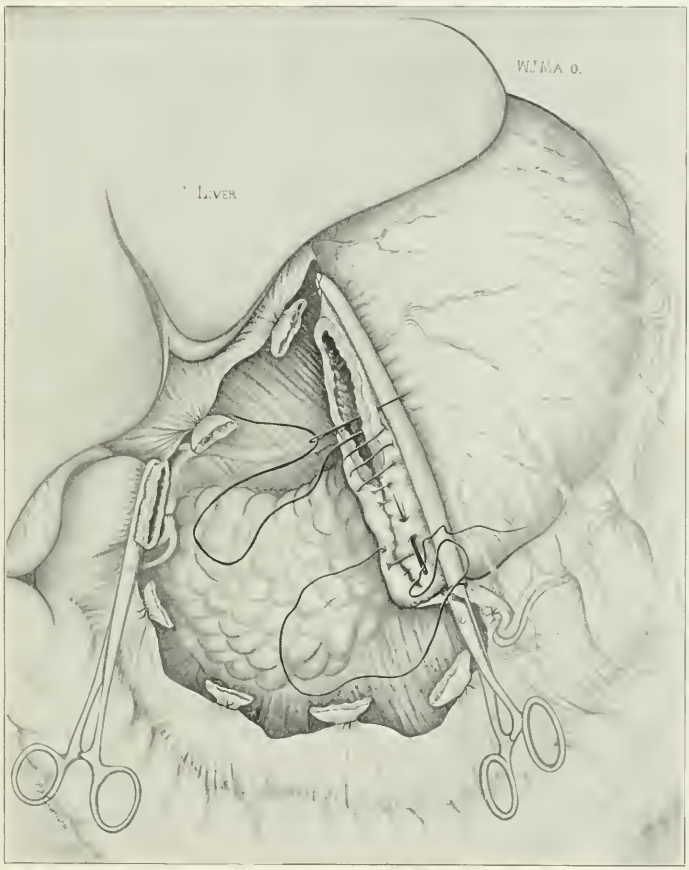


Fig. 3.—Showing closure of stomach, and the through-and-through catgut suture two-thirds completed, and outer linen continuous Cushing suture just started.

The gastric envelopes are thick, with but a loose attachment between the combined peritoneal and muscular coats and the mucous membrane, so that a firm hold of the outer tunics can be secured, insuring reliable union, while the mucous coat can be separately sutured. Running sutures are particularly effective and save much time (Fig. 3).

The entire operation of pylorectomy and partial gastrectomy can be performed in from 40 minutes to an hour and ten minutes, including opening and closing the abdomen, at which times only an anesthetic will be urgently demanded. In poor subjects the entire visceral part of the operation can be done without pain and without anesthesia. The preliminary administration of morphia hypodermatically in the latter class of cases is a valuable adjunct to the anesthesia.

We have done the Billroth No. 2, that is, the complete closure (Fig. 5), of both duodenal and gastric stumps and independent gastrojejunostomy, 76 times, and the Kocher operation 15 times (Fig. 4), and the Billroth No. 1 nine times. Each has its own field of usefulness in selected cases. For the average case the Billroth No. 2 is the operation of choice.

Granting that the statistics of operative attack are now within reasonable limitations, is the relief afforded sufficiently great to make it worth while? General statistics are unsatisfactory and we have, therefore, taken only the cases of Kocher, Kronlein, Mikulicz and ourselves.

In 1903 Kocher reported 75 cases, with an average mortality of 29.3 per cent. Of the 53 who recovered,

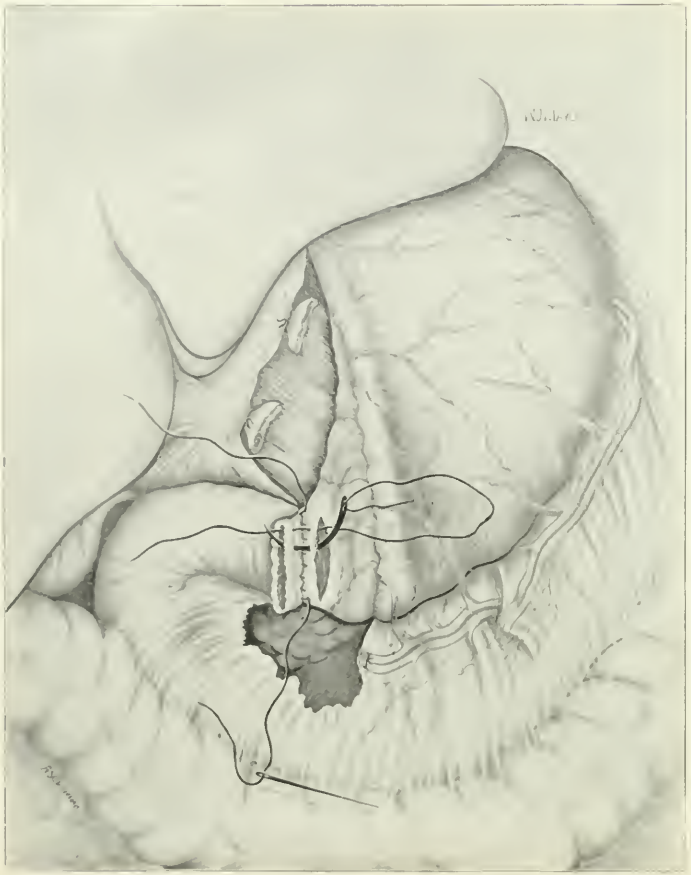


Fig. 4.—Showing restoration of gastrointestinal canal after Kocher method. Seromuscular linen suture in behind, and through-and-through catgut just beginning.

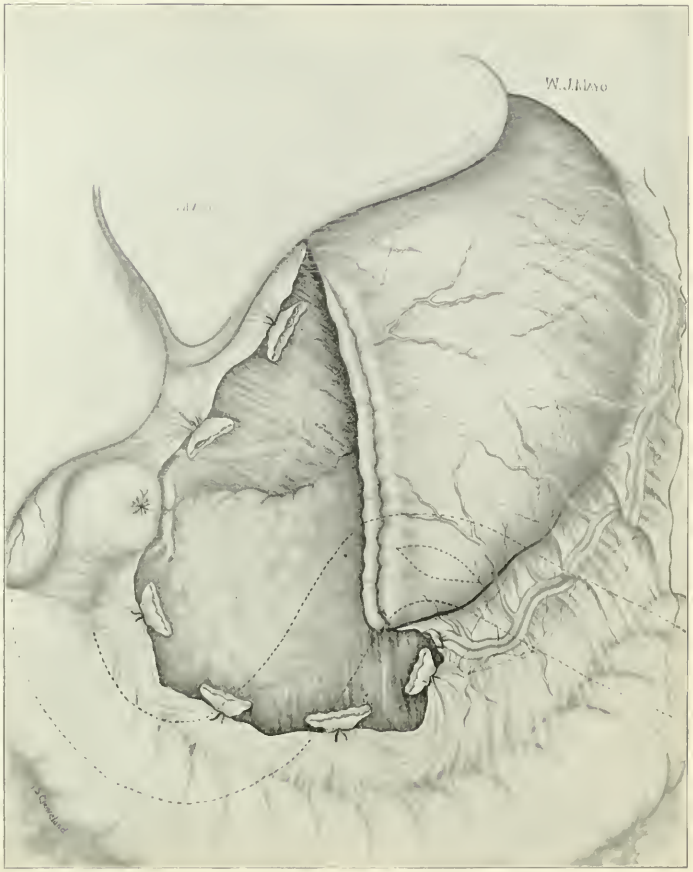


Fig. 5.—Gastrointestinal canal restored by independent posterior gastrojejunostomy, Billroth No. 2. Duodenum and jejunum dotted in as they lie behind.

21 were alive at the time of report and 6 had already lived more than 3 years, 1 alive and well after 13 years and 1 after 8 years. In the last 24 cases there were but 4 deaths, 16 per cent., and 2 of these, Kocher believes, could be fairly excluded, giving a mortality of 8 per cent. Matti, of Kocher's clinic, brings the Berne statistics up to 1904, giving a total of 100 gastric resections. There was considerable improvement in the percentage of those remaining cured over 3 years, and it was further shown that those who died of recurrence averaged 18 months of comfortable existence as gastric drainage was maintained to the end.

Kronlein, in 1902, reported 50 radical operations, with 14 deaths, 28 per cent. At the time of the report 22 patients were living, 4 three years and upward, 7 more than 2 years and 13 more than 1 year.

Mikulicz, in 1901, reported 100 stomach resections, with 37 deaths, 58 of those who recovered were traced. Seventeen were alive more than 1 year, 10 more than 2 years, and 4 more than 2½ years.

Dr. Chas. H. Mayo and I have resected the stomach 100 times, with 14 deaths, 14 per cent. This includes every case dying in the hospital, 5 after 3 weeks and 2 after more than 1 month. In the last 63 cases, beginning with Jan. 1, 1904, there were 6 deaths, 9.5 per cent., and in this group there were 25 consecutive cases, with but 1 death.

As to results, 17 of the 100 operations were excluded because performed for indurated ulcer in which gastric resection seemed indicated on account of possible existing malignant degeneration or other sufficient reason. Three cancer cases were also excluded because the diagnosis was not proved by microscopic examination. This gives 63 cases of gastric cancer in which radical operations were performed and which have been traced. Nine failed to live 6 months; 14, alive now, have been operated on too recently to be of value; 40 lived from 6 months to a year and 23 are alive now; 25 from 1 to 2 years and 17 alive now; 12 from 2 to 3 years and 10 alive; 5 from 3 to 4 years and 4 alive; 1 five years and is alive now.

It will be seen that five of our cases lived over 3 years, 1 dying in 3 years and 5 months from recurrence in the liver. As but 18 who survived the operation were operated on more than 3 years ago, we have 27.7 per cent. living 3 years and 22.2 per cent. alive and well over three years. Taking the most gloomy view possible, we have 22 operated on more than three years, with 4 dying as a result of the operation, 5 living over 3 years, or 22.7 per cent., and 18.1 per cent. alive and well over 3 years, a showing which compares favorably with the operative results for cancer in other parts of the body.

After all, the ease and thoroughness of the removal of the tributary lymphatics tells the story as to recurrence of cancer. Young people are most unfavorable subjects for operation because their lymphatics are abundant. Old people less so because, as pointed out by C. H. Mayo, all the lymphatics are undergoing a slow but sure atrophy during adult life, so that the aged have actually as well as relatively less lymphatics.

The prospect of the cure of cancer of the cervix uteri is interfered with by the proximity of the ureters, and in saving them we frequently sacrifice the patient so far as ultimate cure is concerned, because we do not thoroughly remove the tissues at this vital point.

In marked contrast to this is the arrangement of the lymphatic absorbents of the stomach, which have been beautifully worked out by Cuneo. He showed that normally no lymph glands existed to the left of the middle of the greater curvature and that the lymphatic circulation of this area was from left to right (Fig. 1).

Hartman seized on this basic principle and established the line of gastric section on the greater curvature to the left of the lymph nodes unless necessitated by the growth (Fig. 1).

Cuneo also showed that the lymphatics of the lesser curvature lay in the wall of the stomach itself. Mikulicz at once comprehended the necessity of routine removal of all the lesser curvature to the gastric artery (Fig. 1).

Kocher had already shown the desirability of the removal of the glands lying about the pylorus, especially in the groove with the gastroduodenal artery between the head of the pancreas and the duodenum. In favorable cases the entire lymph absorbents of the pyloric end of the stomach can be extirpated *en masse*. The dome of the stomach is disconnected in its lymphatic arrangement and drains into the splenic glands (Fig. 2).

DIAGNOSIS.

Exploratory incision is the only way an early diagnosis of cancer of the stomach can be established.

In spite of the remarkable development of laboratory methods the main diagnostic means are clinical, and prolonged attempts to establish a laboratory diagnosis are provocative of delay and should be discouraged. The most careful and painstaking methods of examination including these means should be insisted on, but they should not be unduly prolonged.

A suspicion of cancer of the stomach which *can not be disproved* by known methods of examination within a short space of time should lead the conservative practitioner to explain his suspicions to the patient and ask for surgical consultation. He is a reckless man who, under such circumstances, does not give the patient the benefit of the doubt.

The clinical history with the chemical and biologic examination of the stomach contents can but lead to a suspicion; and it is on this that we must act if we are truly conservative.

Given a patient of the middle period of life who, without cause, begins to lose flesh and strength, is unable to eat as before and whose digestion is delayed, we have a right to suspect gastric cancer. If, in conjunction with this, we find loss of motility and a delay of food in the stomach, with evidences of blood and reduction of hydrochloric acid, a tentative diagnosis of carcinoma is justified.

Especially must we be suspicious if in the history there are symptoms of old or recent ulceration. In our last 39 cases 56.4 per cent. showed direct evidence of carcinoma developing on ulcer. Graham showed a clinical history of ulcer in over 50 per cent. of the cases of gastric carcinoma which have come under his investigation, although years may have elapsed between the two diseased processes. It is possible that a larger number of cases in which cancer develops secondary to ulcer consult the surgeon than those without this history. The growing frequency of operation for ulcer brings to the operating table for the relief of obstructions, deformities and adhesions a considerable number of patients with gastric ulcer which has undergone cancerous degeneration.

Murphy well says: "The history of the majority of

cases of cancer of the stomach will show precancerous symptoms."

This question can not be settled by postmortem evidence. For instance, suppose we were told that the postmortem examination of one thousand women who died of cancer of the cervix uteri did not show a single one who had cervical laceration. Would not the query at once arise, If the cancer was so extensive that the patients were dead with the disease, how would it be possible for any one to know by such postmortem examination whether they had ever had laceration or not?

Is this not equally true of ulcer? Before the patient dies all trace of the ulcer would be lost in the gross extent of the disease.

The presence of a tumor is not necessarily a contraindication to operation. A small movable growth in the pyloric end of the stomach is a rather favorable indication, as the early obstruction attracts the attention of the patient by producing distressing symptoms which might not have come on at all if the tumor were in the body of the stomach.

Fortunately 80 per cent. of all gastric carcinomata are in the pyloric end and along the lesser curvature. Seventy per cent. are so situated as to interfere mechanically with motility and are, therefore, operable, while 10 per cent. are situated around the cardia, giving evidences of esophageal obstruction, and 10 per cent. in other parts of the stomach.

The earlier mechanical symptoms appear, the better the prospect of early diagnosis and cure.

There are some contraindications without exploration. One of the chief of these is the finding of typical carcinonamous glands in the supraclavicula fossa, particularly on the left side. This occasionally happens in patients in whom the diagnosis may be plain, but the question of operation is less so. Fixity of the growth and the presence of ascitic accumulations are also contraindications. Much has been written about the value of blood examination in cancer, especially as to the hemoglobin. We have had pylorectomy cases recover with the hemoglobin as low as 30 per cent. Again, some of the worst cases with obstruction may give a high percentage of hemoglobin due to concentration of blood from their inability to absorb fluids.

One can not help believing that more persistent attempts to better the early diagnosis of cancer would have followed on better operative results. There is no longer this excuse with an improving mortality of about 10 per cent. and 25 per cent. of the operative recoveries living more than three years. The time has come for energetic action. We must not disguise the truth from ourselves. All other means have failed, and exploratory incision of the suspected case is the only known means of early diagnosis. This should not discourage us, rather should it encourage better directed efforts toward securing some less formidable means of ascertaining the truth.

STEPS OF THE OPERATION.

1. Anesthesia.—We prefer ether anesthesia, giving a hypodermic injection of one-sixth of a grain of morphin 30 minutes previous to its administration. During the major part of the operation no anesthetic is required, as there is no pain in the visceral work.

2. Exploration.—A short incision is made in the midline half way between the umbilicus and the ensiform cartilage. Two fingers are introduced and the growth explored with reference to other structures. Next the extent of glandular involvement is ascertained. If the case seems fairly reasonable for operation, the incision is rapidly enlarged and the growth drawn out of the abdomen. This maneuver permits of careful examination of the lesser curvature, and especially as to whether the infiltration in this vicinity extends beyond the possibility of removal. The transverse mesocolon is then inspected, as it is often infiltrated from behind. The posterior surface of the stomach and its relation to the pancreas are palpated with fingers passed through a rent in the gastrohepatic omentum. We have dissected into the superficial surface of the pancreas a number of times without that fatality to which Haberkant (76 per cent.) and Mikulicz (74 per cent.) have called attention.

3. Mobilization of the Lesser Curvature (*Figs. 1 and 2*).—The stomach is drawn firmly downward and to the right, the left lobe of the liver raised by the fingers of an assistant, and the gastric artery tied with catgut on a needle at the highest possible point well beyond the lymphatic nodes. A pair of clamps are caught on the opposite side, and the artery and that portion of the gastrohepatic ligament which has been ligated with it are cut. With a few nicks of the knife the pedicle is partly detached from the stomach and allowed to retract. This permits of mobilization of the gastric wall and obtains a clear space near the esophagus for the division of the stomach. The superior pyloric artery and the remainder of the gastrohepatic ligament are now doubly tied and cut between, leaving the glands attached to the duodenum. This mobilizes the entire lesser curvature and makes the remainder of the work outside of the body.

4. Separation of the Pyloric End of the Stomach (*Figs. 1 and 2*).—The hand is passed into the lesser cavity of the peritoneum behind the stomach, adhesions are carefully divided and bleeding points ligated. Hot moist gauze pads are now placed in this space. Two pairs of narrow crushing clamps (Ferguson) are now placed on the duodenum well below the disease (as a rule, an inch below the pylorus) and the duodenum is divided between. The glands lying in the omentum immediately below the pylorus are carefully dissected upward so as to remain attached to the pyloric end of the stomach and a few bleeding points caught and ligated. The forceps on the stomach side with these glands is now lifted sharply upward, exposing the gastroduodenal artery in the groove between the head of the pancreas and the duodenum; this vessel is doubly tied and divided between ligatures. The glands in this region are dissected upward with the fat and hot gauze compresses placed in the space.

5. Freezing the Greater Curvature (*Figs. 1 and 2*).—The gastrocolic omentum is tied and divided in sections below the inferior coronary vessels, care being taken to avoid the middle colic artery; accidental inclusion of this vessel has caused gangrene of the transverse colon, of which it is the sole blood supply in 75 per cent. of the cases (Kronlein). Injury to the middle colic has necessitated resection of the transverse colon in a number of instances (Kocher). The lymph nodes lie close to the blood vessels, and at a point well beyond these structures the left gastrocpiploic vessel is caught and tied. Care should be taken not to destroy its branches to the stomach beyond the point of ligation as it will be the sole blood supply for the contiguous stomach wall.

6. Removal of the Diseased Structures (*Figs. 1 and 2*).—Light elastic holding clamps are now placed on the stomach an inch or more back of the proposed line of resection, a second pair grasping the tumor side and the growth with the glands and fat removed *en masse*. As

it is cut loose, several catch forceps should be applied to the margins of the cut stomach surface projecting beyond the clamp to prevent retraction. This clamp is straight, quite elastic and rubber covered so that it will not crush or injure the stomach wall. We have found those of Scudder very satisfactory. The cut gastric wall is now lightly gone over with the actual cautery, particularly at the upper part, at which point we are most liable to fail to get well beyond the disease.

7. *Suture of the Gastric Stump* (*Fig. 3*).—After rearranging the hot moist packs, to furnish ample protection, with No. 2 chromic catgut on a straight needle, beginning at the greater curvature, a running suture is placed through all of the coats after the method of Charles H. Mayo. The needle enters on the peritoneum at one margin, passes through to the mucous coat and directly back on the same side from mucous coat to peritoneum. By doing this alternately, first on one side and then the other, by a single suture the peritoneal surfaces are rolled into contact, the parts being firmly brought into apposition and the hemorrhage checked. On approaching the lesser curvature it will usually be found that the clamps are too close to the edges of the wound to permit of this maneuver and it may be necessary to unclasp them in suturing the last inch. As this situation is also under considerable tension, it is well to place one or two mattress sutures of linen at once at the upper end to completely and permanently secure it, rolling the first catgut suture in by a wide grasp of the gastric wall far enough back to permit of union without tension. Any point not well turned or showing a tendency to ooze is secured by an independent mattress suture of linen. Beginning now at the greater curvature, a fine linen continuous Cushing suture turns in the gastric wall without tension over the first row.

8. *Restoration of the Gastrointestinal Canal.*—(a) After the method of Kocher (Fig. 4).

After careful cleansing, the stomach is drawn toward the duodenum. If it is sufficiently mobile the Kocher operation is performed, the duodenum being loosened up for the purpose. The posterior wall of the stomach near the greater curvature, at a distance of one and one-half to two inches from the gastric suture line and parallel with it, is sutured to the posterior duodenal wall just below the original clamp on it by a running suture of linen. One-sixth of an inch in front of this and just opposite the duodenal clamp an incision is made through the peritoneal and muscular coats of the stomach to, but not through, the mucous coat. The clamp on the duodenum is now removed, its cavity opened up and sponged out. The posterior cut wall is firmly sutured with chromic catgut on a curved needle in front of the the posterior linen suture through all of the coats of the duodenum and stomach, using a Conuell or buttonhole stitch until the posterior inner row is completed half-way around. The mucous membrane of the stomach which has been sutured behind without opening is now cut through and its sutured lower margin inspected for hemorrhage or lack of apposition and one or two interrupted sutures of catgut applied if necessary. The through-and-through catgut suture is now continued around the anterior surface uniting the end of the duodenum to the stomach in a similar manner to that previously described in closing the stomach, the suture passing from peritoneum to mucous coat and back from mucous coat to peritoneum on the same side alternately and tied to the original end. The linen suture is now continued around to the starting point completing the second row. The entire suture line is inspected front and back and several extra mattress sutures of linen used to reinforce at points of tension. If the stomach has a tendency to drag on the duodenum the gastrocolic omentum close to the stomach is caught and anchored to the peritoneum on the left margin of the wound. The stumps of the gastrocolic omentum are brought together with a couple of catgut sutures and the entire field inspected and sponged. The deep gauze compresses are now removed. If these have been carefully placed and renewed at intervals, there will have been no contamination or exposure.

(b) Closure of the duodenal stump and independent gastrojejunostomy, Billroth No. 2 (Fig. 5).

If the stomach can not be approximated to the duodenum, the duodenal stump is turned in by a circular suture after ligature in the groove made by the forceps and a posterior gastrojejunostomy is performed without a loop, that is, within three inches of the origin of the jejunum. The opening in the stomach, however, should run from above down, right to left, so that the proximal end of the jejunum shall lie close to the suture line, the distal end at the lowest point and passing to the left. After completion of the gastrojejunostomy in the usual manner, the jejunum at once drops down into the left iliac fossa in its normal position. A few sutures close the rent in the transverse mesocolon in such fashion as to protect the suture line. If the patient is in a poor condition, an anterior or posterior Murphy button operation can be made to save time. The button must be protected, however, by at least four mattress sutures of linen at intervals to prevent separation.

9. *After-Care.*—After resection the patient should be placed in bed, the head and shoulders elevated to the semi-sitting posture and a glass female douche point introduced above the internal sphincter, through which from one to four quarts of one-half strength normal saline solution is allowed slowly to enter the rectum for absorption from a gravity bag, thirty minutes to three hours being used in this process (Murphy). This is repeated in twelve hours with a lesser amount. From one-half to one ounce of hot water is allowed by the stomach every hour after sixteen hours, and the usual experimentation of liquid foods begun after twenty-four to forty-eight hours, the rectum being used as an auxiliary for four or five days.

PALLIATIVE OPERATIONS.

The results of palliative operations for cancer of the stomach are relatively unsatisfactory. The statistics of gastroenterostomy for the relief of obstructions due to inoperable malignant disease shows as high or higher a mortality than gastric resection; the comparison, however, can not be directly made, as gastroenterostomy can be applied in cases in which radical incision can not be performed.

The average prolongation of life after gastroenterostomies is not over four to six months, and the fact that patients live beyond this time gives rise to the query: Might not radical operation have given a cure? In 143 cases of gastroenterostomy for malignant disease reported by Mikulicz the mortality was 33 per cent., the average prolongation of life 6.4 months. In 74 cases by Kronlein the death rate was 24.3 per cent. and the average prolongation of life was but three months. In 140 of our cases the death rate was 15 per cent. and the average prolongation of life, so far as known, was less than five months.

It is true that the mortality in recent cases is very much less, perhaps not over 10 per cent., but the leaving of the ulcerating, bleeding mass in the stomach to its own devices is unsatisfactory. The operation merely prolongs a chronic invalidism by a few weary months which are without hope. The judge who says to the prisoner, "I sentence you to death after five months," has not given the prisoner a desirable intervening existence.

For cancerous obstruction of the cardiac orifice gastrostomy offers the only means at our command, a palliation which is not frequently demanded by the patient when the facts are placed plainly before him.

Of gastrostomies for cancerous cardiac obstruction there were 18 cases, with 3 deaths, 16.6 per cent. Average duration of life about the same as after gastroenterostomy.

Of explorations with the discovery of hopeless gastric carcinoma there were 72, with one death in the hospital. The average stay of patients explored for incurable disease is less than five days, the deep wounds being closed with catgut, and the strong aponeurotic structures are braced with buried mattress sutures of linen, silk or silver. This enables the patient to get about at once and return to his home to spend his remaining existence with family and friends.

It will be seen that of the total 313 cancers of the stomach operated on up to Feb. 1, 1906, only 26 per cent. were early enough to permit of radical extirpation.

In conclusion, let me urge upon the profession the merits of radical operation on suitable cases of gastric cancer.

THE NEURONS.

LEWELLYS F. BARKER, M.D.

Professor of the Principles and Practice of Medicine, Johns Hopkins University; Physician-in-Chief to the Johns Hopkins Hospital.

BALTIMORE.

(*Concluded from Page 935.*)

The next questions to be decided are, (1) Do the minute fibers ending in the terminal buttons form anastomoses with one another? and (2) Do neurofibrils pass from the terminal buttons into the adjacent cell body or dendrite to form connections with the neurofibrils lying in the protoplasm there? I am unable to find them in the preparations I have been studying, nor can Ramón y Cajal, von Lenhossék, Retzius, van Gehuchten or Mahaim in theirs. Held[12] thinks that he sees such communications, and Max Wolff is inclined to a similar view. Further study is needed to decide this point. Ramón y Cajal is so convinced of the separateness of the terminal buttons from the adjacent nerve-cell protoplasm that he unhesitatingly assures us that not only is the neuron conception valid, but even the contact doctrine is better supported now than ever before, and Sherrington[13] takes the ground that the cell membranes at the junctions of the neurons (synapses) may be of very great importance in the reflex processes.

Certain it is, if one makes a quick review of all the theories which have been advanced, with the aim of discrediting the views based on the findings with Golgi's method, one comes necessarily, as van Gehuchten has emphasized, to a double conclusion: First, none of the theories opposing the neuron conception has led to the objective demonstration of the existence of a real continuity among the nerve elements, and, second, there is a marked difference between so-called neuronists and so-called antineuronists in interpreting known facts. The former, faithful to the facts observed, declare that in their preparations they find only free ramifications, and, not being able to see intercellular anastomoses, they maintain that one should not admit that they exist. The opponents of the neuron conception affirm that intercellular anastomoses ought to exist, but, not being able to demonstrate them, they themselves supply what is lacking in their preparations; using theoretical considerations and physiologic arguments as a basis, they construct the desired continuity out of whole cloth. Advocates of the neuron conception and of the contact doctrine naturally regard this negative result of the numerous efforts made to establish the continuity as a very convincing argument in favor of the real independence of the neurons. Opponents of the neuron conception think that continuity is, *a priori*, so probable that those who deny it should bring the absolute proof that it does not exist.

May it not be possible that the multiplication of hypotheses has been largely due to the supposition, thus far baseless, that the neurofibrils represent the sole conducting element in the nervous system? In an address delivered in 1899,[14] commenting on this subject, I said: "Some investigators have been tempted, very naturally, I think, to assume that the fibril-like structures in the ground substances represent the essential conducting substance, but, however plausible, this is not yet satisfactorily proven, and, even if such structures were shown to be particularly suited for such conduction, a similar function for other parts of the nerve-cell protoplasm would by no means be excluded." Bethe and Mönckeberg's argument that only neurofibrils pass through the nodes of Ranvier has no weight if it be true, as is asserted, that perifibrillar and interfibrillar protoplasm also pass through the nodes. There can be but little doubt that the neurofibrils are of some special importance for the cells, but we are as yet as ignorant of the function they subserve as we are of the functions of the fibrils in the muscle cells and in other cells of the body. Schiefferdecker[15] suggests that the fibrils are not for the purpose of isolated conduction, but that they, together with the plasma, produce a definite chemical transformation in the neuron, which is propagated through the axon and is able to excite other nerve cells or end organs.

In hibernating animals the neurofibrils are quite different in appearance from those in active animals (Fig. 16). Studies of the neurofibrils in pathologic conditions have already been begun (Marinesco, Bellot *et al.*), and it is found that they undergo definite changes when the neurons are injured.

(*b*) *The Neuron as a Physiologic Unit.*—Under this heading I shall refer to two points only: 1. The possibility of nerve conduction in the absence of the cell body of the neuron. 2. The so-called "autoregeneration" of peripheral nerves.

With regard to the first of these two points, Bethe's

12. Held, H.: "Zur Kenntniss einer neurofibrillären Continuität der Wirbelthiere." Arch. f. Anat., u. Entwegsgesch., Leipzig, 1905, pp. 55 to 76.

13. Sherrington, C. S.: "Ueber das Zusammenwirken der Rückenmarksreflexa und das Prinzip der gemeinsamen Strecke." Ergebn d. Physiol., Wiesb., 1905, vol iv, pp. 797 to 850.

14. Barker, L. F.: "The Progress of Neurology." Yale Medical Journal, 1899.

15. Schiefferdecker, P.: "Nerven u. Muskelfibrillen, das Neuron und der Zusammenhang der Neuronen. Deutsche med Wochft., 1905, vol. xxxi, p. 613; also, "Ueber die Neuronen und die innere Sekretion." Sitzber, d. Niederrhein. Gesellsch. f. Natur d Heilk., Bonn, 1905, Oct. 23.

so-called fundamental experiment has attracted much attention (Fig. 17). In studying the nervous system of a crab (*Carcinus mœnas*), he cut off the motor cells at the periphery of the ganglion of the second antenna, and found that as long as the sensory fibers (F. s.) and motor fibers (F. m.) of the antenna remained intact and in connection with the cell-free neuropile of the center of the ganglion the antenna behaved normally; the tonus of the muscles is preserved and the reflexes persist unaltered. Bethe thinks this experiment proves conclusively that the cell body, the part of the neuron containing the nucleus, is not necessary for the reflex functions, and that the normal tonus of the muscles does not depend on the cell body, excitation of the sensory fibers being transmissible to the centrifugal fibers in spite of the entire absence of nerve cells. If this experiment be confirmed, it will show that the whole neuron does not necessarily enter into every function, or, in other words, that there may be nerve functions which can be carried out with utilization of a part only of the cell. The experiment points also to the validity of the hypothesis, advanced by Ramón y Cajal and van Gehuchten, of the axipetal conduction function of the dendrites. It was thought at first to demonstrate the conducting function of free extracellular neurofibrils, but recent studies indicate, as has been already said, that the neurofibrils of the neuropilem are all embedded in the protoplasm of the processes of nerve cells.

The question of the possibility of autoregeneration of the distal end of a divided nerve which has been prevented from uniting with its central end is one of very great interest. Bethe has repeated the earlier experiments of Philippeaux and Vulpian, and asserts that in young animals autoregeneration takes place, the Schwann cells, uniting end to end, building the new nerve fibers and producing not only new axons, but actually new myelin sheaths and neurofibrils (Fig. 18). Bethe's experiments have been confirmed by Ballance and Stewart in England, van Gehuchten in Belgium, Barfurth[16] in Germany, and recently also by Raimann.[17] The validity of the experiments has been denied by Munzer and by Langley and Anderson,[18] the latter asserting that if anastomosis with other nerves in the limb and all possibility of outgrowth from the central stump be prevented no autoregeneration occurs. The supporters of autoregeneration are positive that they prevent any connection of the central stump of the sciatic, the nerve experimented on, with the distal stump of the divided nerve. Raimann having even excised the portion of the spinal cord and spinal ganglia corresponding to the origin of the sciatic nerve in order to prevent absolutely any central outgrowth. In view of Frossmann's[19] interesting experiments, which show the powerful positive attractive force (neurotropism) exerted by disintegrating nerve substance on living nerve fibers at a distance, it has become necessary to think not only of an outgrowth from the central stump of the *N. ischiadicus*, but also from branches of the other nerves of the lower extremity, namely, the *N. femoralis* and *N. obturatorius*. To test this point Lugaro of Florence[20] excised the whole lumbosacral cord and the corresponding spinal ganglia in three puppies. After three months the nerves of the limbs were found to be faradically totally inexcitable, and histologic examination showed entire absence of any autogenous regeneration. It is highly important that a series of similar experiments be performed, and that the truth in this matter be finally determined. Should autoregeneration actually occur, we should have another wonderful example of the power of adaptation of the body in utilizing in regeneration histologic elements of entirely different embryonic origin from those by which the structure is first formed. It would not be any more wonderful, however, than the generally accepted regeneration of an extirpated crystalline lens by the iris epithelium in Triton.

(*c*) *The Neuron as an Embryologic or Cellular Unit.*—The embryologic researches of His, which taught that the axis cylinder of a nerve fiber represents the outgrowth from a single nerve cell, had, as we have seen, much to do with the origin of the neuron conception. The neurilemma cells forming the sheath of the peripheral nerve fibers were regarded as accessories for protective or nutritive purposes. The studies of Golgi's preparations of young embryos confirmed in the most striking way the opinions of His (Fig. 19).

This doctrine of the unicellular origin of the neuron has by no means gone unchallenged. Indeed, there is a large school of investigators to-day who maintain that the peripheral nerve fibers, inclusive of their axons, arise in the embryo as the result of the fusion of long chains of cells placed end to end. This pluricellular or catenary explanation of the origin of the peripheral nerve fibers has been extended even to the dendrites and the nerve cell of the central organs, certain Italian investigators especially asserting that the rows of cells fuse inside the central system to give rise to them, their nuclei gradually disappearing.[21]

Bethe recently undertook again the study of the development of the peripheral nerve fibers from the embryologic side, and published his results in his book of 1903. He states that, before the appearance of any trace of peripheral nerve fibers, a band of spindle-shaped cells can be seen in the place where the nerve is to be formed, and it is these cells, he believes, which produce by differentiation of their protoplasm the neurofibrils of the peripheral nerve fibers and the nuclei of their internodal segments (Fig. 20). Bethe looks on this cellular band as a true syncytium, the protoplasmic part of which builds filaments, which, extending from cell to cell, finally all fuse together and become continuous with the nerve cells in the centers. Gradually each of these filaments becomes surrounded by nuclei and myelin sheath, and a large number of individual nerve fibers ultimately arise from the cellular band. Similar views of the origin of the peripheral fibers have been advanced by Apáthy and Sedgwick.

16. Barfurth, D.: "Die Regeneration peripherer Nerven." Anat. Anz., Jena, 1905, vol. xxvii, supplement, pp. 160 to 172.

17. Compare abstract, Neurol. Centralbl., Leipzig, 1905, p. 1015.

18. Langley and Anderson: "Autogenic Regeneration in the Nerves of the Limbs." Jour. Physiol., Lond. and Camb., vol. xxxi, 1904.

19. Frossmann: "Ueber die Ursachen welche die Wachsthumsrichtung der peripheren Nervenfasern bei der Regeneration bestimmen." Beitr. z. Pathol. u. pathol. Anat., Jena, 1898, vol. xxiv; also "Zur Kenntniss des Neurotropismus.", ibid., vol. xxvii, 1900.

20. Lugaro, E.: "Zur Frage der autogenen Regeneration der Nervenfasern." Neurol. Centralbl., Leipzig, 1905, pp. 1143-1144.

21. Compare Capobianco and Fragnito. "Nuove ricerche su la genesi ed; rapport imutui degli elementi nervosi e neuroglici?" Ann di Neurol., 1899, vol. xvii; Pighini, G.: Sur l'origine et la formation des cellules nerveuses chez les embryons de Sélaciens. Bibliogr. Anat., Paris and Nancy, vol. xiv, pp. 74-105; La Pegna, E.: Su la genesi ed i rapporti reciproci degli elementi nervosi nel midollo spinale di pollo. Ann. di Neurol., 1904, vol. xxii.

Hensen[22] has for forty years opposed the doctrine of an outgrowth of free nerve endings from the centers to the end organs. It is his opinion that, from the earliest stages of development, nerve-cell and end organ are connected by long-drawn-out intercellular bridges. As the cells go on dividing, the connecting intercellular bridges also divide more or less completely. The divided nerves gradually become separated from one another as growth proceeds. Since many of the subdivisions are

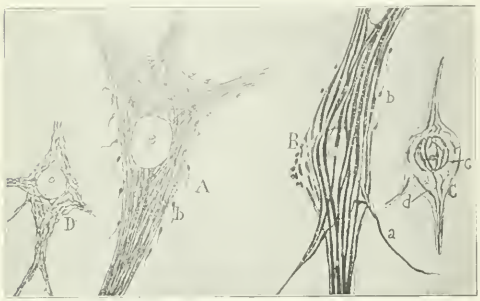


Fig. 16.—Cells of the spinal cord of the lizard. *A*, *D*, motor and funicular cells in the state of activity (lizard kept for three hours in the thermostat at 30). *B*, *C*, motor and funicular cells in the state of repose (lizard kept at a temperature of 12). *a*, axis cylinder; *b*, terminal buttons of other axons; *c*, perinuclear network; *d*, thickened primary neurofibril. (After Ramón y Cajal, 1903.)

incomplete, there finally arises an interminable network of fibers. Hensen then assumes that certain portions of this network become useful to the body as a nervous system and persist; the unused portion of the network atrophies and disappears. The peripheral networks

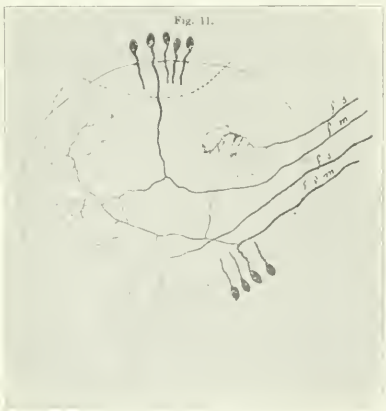


Fig. 17.—So-called "fundamental experiment" of Bethe. The drawing indicates the position of the motor cells of the neuropilem in the ganglion of the crab. The cells were cut away as indicated by the dotted lines. f. s., sensory fiber; f. m., motor fiber. (After Bethe.)

have been carefully studied of late by an especial technic by O. Schultze.[23]

Up to 1904 it had become ever clearer that unanimity of interpretation of the histologic pictures of developing nerves was not to be arrived at unless some new and convincing method could be devised which would settle the question definitely. In April of that year Braus[24] published the results of some very interest-

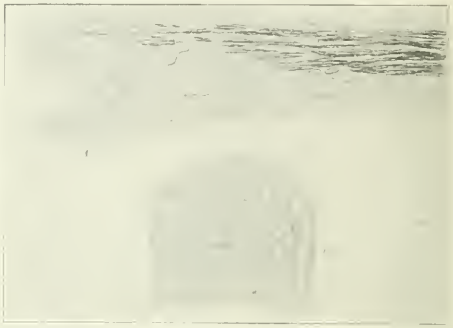


Fig. 18.—*A*, longitudinal section through an "autoregenerated" nerve; *B*, transverse section through the same nerve a little further distalward. (After Bethe, 1903.)

ing experiments on tadpoles (Bombinator). At the period of appearance of the fore limb as a minute bud, he excised this bud and transplanted it to a point between the bud for the hind limb and the root of the tail. The bud grew and gave rise to an extremity quite like a fore limb, only out of position. At the time of transplantation the limb already contains the rudiments of nerves and blood vessels. This differentiation, according to Braus, recedes during the next few days after transplantation and the tissues of the bud again come

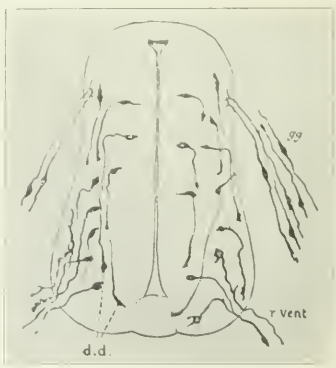


Fig. 19.—Section of spinal cord of a chick at the third day of incubation. (After Ramón y Cajal.) *g g*, cells of spinal ganglion; *d d*, ends of cells on which the dendrites develop later. At the opposite poles are shown the embryonic axons, at the extremities of some of which there are bulbous swellings. *r. vent.*, ventral root.

22. Hensen, V.: "Ueber die Entwickelung des Gewebes und des Nerven im Schwanze der Froschlarve." Virch. Arch., vol. xxxi, 1864, p. 51; "Ueber die Nerven im Schwanz der Froschlarven." Arch. f. mikr. Anat., Bonn., 1868, vol. iv, pp. 111 to 124; Die Entwickelungsmechanik der Nervenbahnen im Embryo der Säugetiere, Kiel und Leipzig, 1903, pp. 1 to 51.

23. Schultze, O.: "Beiträge zur Histogenese des Nervensystems. I. Ueber die multizelluläre Entstehung der peripheren sensiblen Nervenfaser und das Vorhandensein eines allgemeinen Endnetzes sensibler Neuroblasten bei Amphibienlarven." Arch. f. mikr. Anat., Bonn, 1905, vol. xxxvi, p. 41 to 110, 4 pl.

24. Braus, H.: "Experimentelle Beiträge zur Frage nach der Entwickelung peripherer Nerven." Anat. Anz. Jena, 1905, vol. xxvi, pp. 433-479.

to resemble an indifferent blastema. Braus, following the idea of Roux, believes that this bud in its further growth leads its own life, that development goes on in its tissues by autodifferentiation. Certain it is that the blood vessels, bones, muscles and nerves develop in it. As early as three weeks after the operation the nerves in the transplanted limb present a development equal to that of a normal limb. Though Braus believes that these nerves have developed "autogenetically," he admits that they are connected by means of three strands with the general nervous system of the tadpole; he feels sure, however, that these strands are too delicate to have served for the passage from the central nervous system to the limb of all the peripheral nerve fibers to be found there. It looked, therefore, at first as though the doctrine of the pluricellular origin of the peripheral nerve fibers were about to receive support from the experimental side.

In the summer of the same year (1904), however, the subject was approached in a most ingenious way by one of our American anatomists, Dr. Ross Granville Harrison of Baltimore.[25] At a meeting of the Society of Naturalists of the lower Rhine he reported some experiments in which the sheath cells or neurilemma cells which give rise to the bands of cells along the lines of developing nerves were eliminated by cutting out their source at a very early embryonic stage before any nerves whatever had developed. He found that these sheath cells arise in the region of the so-called neural crest

Fig. 20.—Transverse section through an embryo of chick after an incubation of two days, twenty-one hours. The bands of spindle-shaped cells in the course of the spinal nerves is illustrated. (After Bethe, 1903.)

along with the cells which give origin to the spinal ganglia. By cutting away a thin strip at the back of the embryo, when it is only 3 mm. long, he got embryos to grow which at the end of a week had no sensory ganglia or sensory nerves, though they had motor nerves. But the remarkable fact is that these motor nerves, instead of showing cell bands in their course, as under normal conditions, appeared as naked, non-nucleated fibers which could be traced as such all the way from the spinal cord to the extreme ventral part of the musculature (Figs. 21, 22, 23 and 24). Here, at a blow, the proof was brought that the peripheral spinal nerves may develop in the entire absence of sheath cells.

25. Harrison, R. G.: "Neue Versuche und Beobachtungen ueber die Entwickelung der peripheren Nerven der Wirbeltiere." Bonn, 1904. Reprinted from Sitzber d. Niederrhein. Gesellsch., Nat. u. Heilk., Bonn, 1904.

The first experiments were made on the embryo of *Rana escalenta;* subsequently Dr. Harrison confirmed his results on the embryos of two American species. *Rana sylvatica* and *Rana palustris.* But, true to the principles of the experimental method, Dr. Harrison did not remain satisfied with the proof—he sought the counterproof. As an *experimentum crucis,* it occurred to him to excise, in these young embryos, the ventral portion of the neural tubes, i. e., to cut away the cells which, according to the doctrine of His, give rise to the axis cylinder processes of the spinal motor nerves. Leaving the neural crest intact, that is, the region which gives rise to the spinal ganglia and the sheath cells. Harrison argued that if the opposing doctrine that the sheath cells form the motor nerves is true the latter and the sensory nerves should develop normally, even with the anterior horn cells absent. The experiment is one difficult to perform, and a number of attempts failed to give conclusive results, but Harrison has performed it a

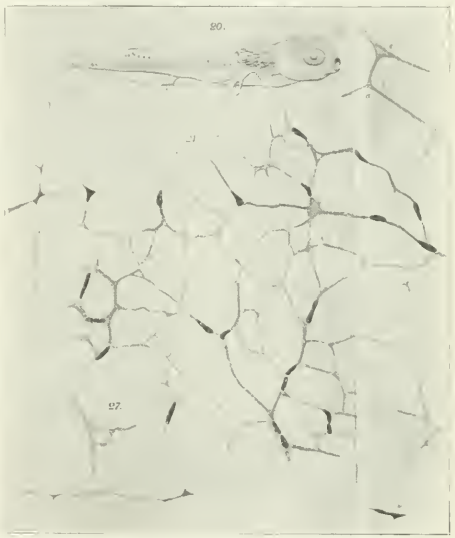


Fig. 21.—Peripheral nerve network. (After O. Schultze.)

number of times successfully. What was the result? The spinal ganglia and the peripheral sensory nerves, with their accompanying sheath cells, developed normally, but not a trace of a spinal motor nerve appeared in the region operated on, nor did the sheath cells form bands where the motor nerves normally appeared (Fig. 25). The proof, then, has most brilliantly been brought that the fibers of the motor nerves are processes of the anterior horn cells, that these processes can extend a long distance from the spinal cord to the muscles in the entire absence of sheath cells, and that the sheath cells are incapable of building these fibers by themselves. If any one could have given me my choice of doing successfully any single piece of experimental work that has been done in neurobiology since 1891, I should unhesitatingly have chosen this. It is an experimental research of the first order, one which, if confirmed, will always redound greatly to the credit of anatomic science in America.

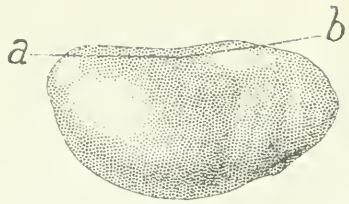


Fig. 22.—Profile view of frog embryo (*Rana esculenta*, 2.7 mm. long) at the stage of operation; the line (a b) indicates the incision. (After Harrison.)

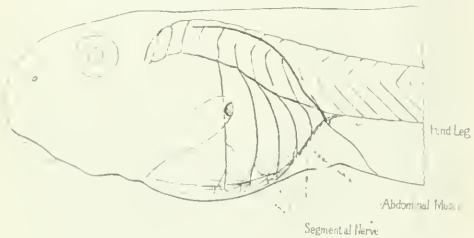


Fig. 23.—Profile view of frog larva (*Rana palustris*, 12 mm. long) after complete resorption of yolk. The relations of the segmental nerves and the primary abdominal muscle are shown. (After Harrison.)

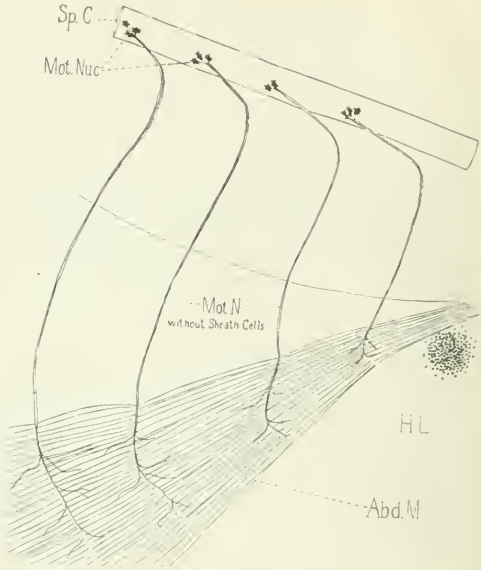


Fig. 25.—Semi-diagramatic view of the nerves of the abdominal walls of a frog larva from which the neural crest had been removed, as shown in Fig. 22. Only motor nerves are present, and these consist of axis cylinders without sheath cells. (After Harrison.)

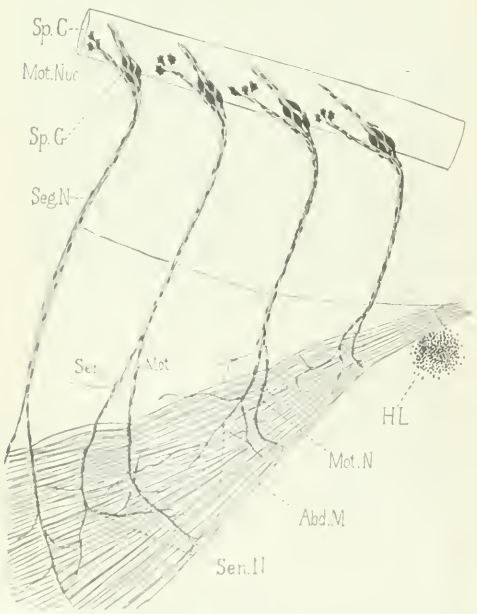


Fig. 24.—Semi-diagramatic view of the nerves of the abdominal walls of the frog larva (normal specimen). Ab. D, primary abdominal muscle; HL, rudiment of hind leg; Mot. N, motor branch of segmental nerve running in inscriptio tendinea of the primary abdominal muscle; Mot. Nuc., motor nucleus (ventral horn cells) in spinal cord; Seg. N, segmental (spinal) nerve; Sen. N, sensory branch of spinal nerve running to integument outside of muscle; Sp. C, spinal cord; Sp. G, spinal ganglion. (After Harrison.)

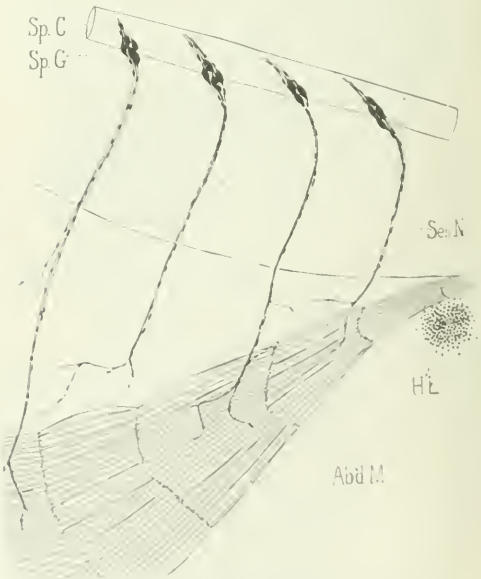


Fig. 26.—Semi-diagramatic view of the nerves of the abdominal walls of a frog larva from which the ventral half of the spinal cord had been removed at the stage represented in Fig. 22. Absence of the purely motor rami, which normally run in the inscriptiones tendineæ. (After Harrison.)

But even should it have been made out that the neuron is pluricellular in its origin the anatomic unit, which Waldeyer called the neuron, would still have existed. It would have been an organ then, rather than a single cell.

I should like to go on to the newer work, dealing with the origin of the connection between ganglion cell and end organ, into the researches supporting the free outgrowth theory, on the one hand, and the persistent cell-bridge theory on the other, but I have already exceeded the time allotted to a Harvey lecture and must be content with referring you to Harrison's forthcoming article[26] in which these matters are discussed more ably than I could deal with them.

And now as to the validity of the neuron conception and of the various attached neuron doctrines I shall leave you to judge for yourselves. I am glad if in this hour I have been at all successful in putting the actual facts as known at present before you or in encouraging you to hold an open mind regarding theories where facts are wanting.

APPENDICITIS: ITS TREATMENT.*

O. BEVERLY CAMPBELL, A.M., M.D.
Professor of Abdominal Surgery and Gynecology, Ensworth-Central Medical College.
ST. JOSEPH, MO.

Were it possible under all circumstances, in the treatment of appendicitis, to follow the dictum to operate within the first twenty-four to thirty-six hours from the onset of the disease, we would not be confronted with the varied pathology and the many mooted questions of dealing with it in attempting to treat this disease successfully. The early operation will, however, probably never become the universal practice, and we will still continue to encounter all of the different pathologic conditions that are associated with neglected cases of the disease.

The reasons why the early operation will never become the universal practice in appendicitis are chiefly the following:

(a) The family physician, and not the surgeon, is usually called to diagnose and treat the disease in the beginning. It is expecting too much of the family physician when we look to him to diagnose the disease and to call the surgeon all within twenty-four to thirty-six hours from the onset of the attack.

(b) When the diagnosis of appendicitis is made within the first twenty-four or thirty-six hours, and an operation is advised, it is necessary to gain the consent of the patient and his friends, which it is not always possible to do within the time limit for an early operation.

So that, while the early operation should be the practice in appendicitis when possible, it must be acknowledged that its universal application is impractical, even under favorable circumstances, and we must expect to do the late operation as a life-saving measure, and the interval operation more often than the early.

EARLY MEDICAL TREATMENT.

The most usual cause of death in appendicitis is diffuse peritonitis, and the treatment of the disease largely resolves itself into the best means of preventing its occurrence, either with or without operative measures. Heretofore there has been considerable difference of opinion as to the early medical treatment of appendicitis, and the practice of purgation with salines has been the most popular and the most universally used. I wish to deprecate this practice, unless, at the very onset of the disease, or an operation has been decided on, and the patient is so situated that the operation can be performed at once. Purgation, unless in the very beginning of an attack, is capable of doing a great deal of harm, because of the resulting increased peristalsis, which tends to disseminate the infection to the general peritoneum.

The claims that have been made concerning the therapeutic effect of purgation in lessening the virulency of the attack, and tending to unload the appendix into the bowel, are certainly not based on sound reasoning. In very many cases operated on by me within the first thirty-six hours from the onset of the attack, where perforation had not occurred, the great omentum and several coils of the small intestines were softly adherent to the appendix. In several of these cases the appendix was on the verge of perforation; a necrotic area could be discerned. Had purgation been the treatment at this particular time, instead of operative interference, it is reasonable to conclude that the soft adhesions would have been torn away by the peristaltic action of the intestines and perforation of the appendix would have occurred in some of the cases, and perhaps diffuse peritonitis would have followed.

On the other hand, had operation in these cases been delayed, and, instead of purgation, a treatment had been instituted which would have arrested peristalsis in the intestines, it is as reasonable to conclude that walled-in abscesses would have occurred. The total arrest of peristalsis in the intestines will tend to protect the inflamed appendix and will not interfere with Nature's method of limiting the inflammation. Were it possible to anticipate an attack of appendicitis, thorough purgation for the single purpose of emptying the bowel would be advisable, or, at the actual onset of the attack, it would still be admissible, but the routine treatment of purgation several hours after the onset is capable of aggravating the disease. While it is the consensus of opinion that there is no medicinal treatment which can arrest the pathology in the appendix, it does seem that it has not been made plain that in cases refusing operation, or until the case is turned over to the surgeon, the treatment should be directed solely toward the protection of the peritoneum.

In a certain proportion of cases of appendicitis, variously stated at from 70 to 85 per cent., the pathology unaffected by treatment will not progress to the stage of ulceration and perforation, or to gangrene, but after an acute active course will become subacute and chronic and in some cases subside, leaving the appendix crippled and subject to recurrent attacks. This fact has led the unthinking physician to disfavor operative procedures and to rely on remedial agents directed toward the arrest of the pathology in the appendix. But the fact that, in the beginning of appendicitis, it is impossible to determine by any known method the cases which will safely pass through the initial attack and those which will perforate or become gangrenous has rightly placed the disease as a distinctly surgical one.

The physician, however, in the vast majority of cases, is expected to diagnose the disease and institute treat-

26. To appear in the Journal of Experimental Zoology; the experiments were briefly reported at the Association of American Anatomists at its meeting in Ann Arbor, December, 1905.

* Read before the Western Surgical and Gynecological Association at Kansas City.

ment until the patient and his friends agree to have a surgeon called. This frequently bodes delay, which makes it all important that the physician be capable of instituting the proper treatment until the arrival of the surgeon. That delay on the part of the physician (a) to make a correct diagnosis in appendicitis, and institute the proper treatment, (b) to promptly call the surgeon or refer his case to a surgeon, is productive of too great a number of cases of diffuse peritonitis, septicemia and pyemia as complicating pathology that it is the province of the surgeon to treat.

I believe that the many mooted questions of how best to treat the inflamed appendix until operative measures have been decided on have at last been well settled, and the treatment thus agreed on is the legitimate outcome of knowledge acquired from operative procedures during the different stages of the disease. Such knowledge, in connection with the proper understanding of the physiology of the peritoneum, the intestines, the mesentery and the great omentum has finally determined a rational treatment of the inflamed appendix, not with the hope of curing the pathology in the appendix, but rather for the protection of the general peritoneum.

It is necessary for the physician, in instituting treatment in appendicitis, to be thoroughly imbued with the following facts, which may be reasonably deducted from the present state of our knowledge of the subject: 1. The patient should be advised of the advantages of an early operation. 2. If this is impractical or will not be consented to, then treatment must be instituted to protect the peritoneum, the great source of danger to the patient, until operation is decided on or finally declined.

As no one is capable of predicting the course any case of appendicitis may pursue, whether to perforation or gangrene or to imperfect resolution, it is imperative that the early treatment in every case should be in anticipation of the occurrence of gangrene and perforation of the appendix and be directed toward the prevention of diffuse peritonitis. We should here interpret Nature's method of caring for the peritoneum, in the presence of infection within its cavity, viz., (*a*) by the formation of adhesions between the great omentum, intestines and appendix, (*b*) by the distention of the intestines and arrest of peristalsis, (*c*) by the rigidity of the overlying abdominal muscles and the underlying right psoas muscle.

It is the occurrence of the above-mentioned changes which effectually wall-in abscesses in perforative and gangrenous appendicitis, diffuse peritonitis being prevented. It is true that the above-mentioned phenomena do not occur in cases in which the inflammation does not extend through the lumen of the appendix, and are not always effectual in limiting the inflammation in perforative and gangrenous cases, but, until operation is decided on, I believe in assisting Nature's method of defense in every case.

The principles, then, of treatment should be the arrest of peristalsis in the small intestines and the maintaining of rest in bed. Peristalsis can be the most effectually arrested by abstinence from food and drink. Nourishment may be administered by the rectum. Posture may add something through the principle of gravity, so that we would place the patient in the improved Fowler position, that is, elevation of the head and left side of the bed. Lavage of the stomach should be practiced where vomiting is persistent. An ice bag placed over the region of the appendix for the first twenty-four or forty-eight hours will tend to relieve pain, but, should this measure fail, morphin should be administered hypodermically.

Cases thus treated from the incipiency of the attack, where early operation is declined, will have the usual percentage of perforation and gangrene of the appendix with walled-in abscesses, and as well the proportional number of cases of lymphatic infection with metastatic abscesses, but the proportional number of cases of diffuse peritonitis will be very much lessened.

WHEN TO OPERATE IN APPENDICITIS.

I am an advocate of the early operation in all well-pronounced cases of the disease, that is, within the first thirty-six hours. The dictum to operate as soon as the diagnosis is made may be dangerous, and should always be qualified, as the diagnosis may have been made too late for an early operation. When the case is seen too late for the early operation, as evidenced by the presence of circumscribed peritonitis or beginning diffuse peritonitis, then I would advise the abstinence from all food and drink, the instituting of rectal alimentation, the repeated administration of morphin to allay pain and the placing of the patient in the improved Fowler position. Such a plan of treatment, if rigidly carried out, will, in my opinion, safely carry a large number of cases through the first attack, and an interval operation can be made. A small percentage of such cases will have gangrene of the appendix, perforation and abscess formation, which will in most instances under such a course of treatment become walled-in, and operation may be deferred until the subsidence of acute symptoms. The fact that no one can be capable of diagnosing the extent of the pathology in and surrounding the appendix from the symptoms present, or, from any method of physical examination that can be instituted, in cases of appendicitis seen by the surgeon too late for an early operation, has led to the adoption of different methods of treatment, and it is this class of cases in which the greatest diversity of opinions exist among surgeons as to the best method of procedure.

In cases tending to abscess formation, the prevailing practice is to defer operation until the walling-in process has occurred. It has been quite well demonstrated that the pus tends to become less virulent from day to day and has been found sterile at operation. In perforative appendicitis, if the patient is in a hospital, or can be removed to a hospital within a few hours, immediate operation should be performed. However, when operation is delayed until progressive peritonitis is evident, then I would not advise operative interference, but would adopt the treatment heretofore mentioned, believing it to be more effectual in limiting the inflammation.

OPERATIVE METHODS AND TECHNIC IN ABSCESS CASES.

The question of how best to remove pus from a walled-in abscess within the peritoneal cavity successfully, without contaminating the general peritoneum, is still one of the problems in abdominal surgery. The location of the abscess, whether postcecal and extending high up behind the ascending colon, or reaching low down in the pelvis, or located anteriorly high or low in the abdomen, will determine to some extent the selection of a method of procedure. We are also confronted here by two distinct propositions—to perform drainage as a life-saving measure without the institution of complete work and to drain, remove the appendix, or, if the appendix has sloughed off, to close the opening in the cecum. The first is a mere life-saving measure, the sec-

ond radical complete work. I think I am correct in saying that the tendency is growing in favor of radical complete work, and the more competent the surgeon the more often is he able to do successful radical work. That there is, however, a certain number of abscess cases, in which the most competent surgeon would be content to do a mere drainage operation as a life-saving measure.

THE TECHNIC OF OPERATING THROUGH AN ABDOMINAL INCISION IN ABSCESS CASES.

I believe in the vast majority of abscess cases that a three- or four-inch incision along the outer border of the right rectus muscle is the best avenue of approach.

Through such an incision the abscess can be very well surrounded with pads of moist gauze and, whether adherent to the parietal peritoneum or not, can be evacuated with but little danger of infecting the general peritoneum. With such a technic one can the better do complete work, that is, search out the appendix and remove it, drainage being established through a stab wound in the flank, and the abdominal incision permanently closed. I do not favor the practice of cutting down immediately over the abscess site, unless mere drainage is aimed at or the abscess fills the greater part of the right side of the abdominal cavity. Through such an incision one must trust almost altogether to his dexterity in operative manipulation, and is never quite sure that he has not broken through the wall of protective adhesions in attempting to do complete work. While it is many times possible through such an incision to pad off the abdominal cavity satisfactorily, it can be done better through the above mentioned incision. In postcecal abscesses I prefer the incision along the outer border of the right rectus muscle, unless mere drainage is practiced, when the flank incision and postperitoneal drainage may be made; or in exceptionally favorable cases reaching well down in to the pelvis, drainage through the rectum may be practiced.

DIFFUSE PERITONITIS.

The aim of treatment in beginning diffuse peritonitis should be toward the arrest of the spread of the inflammation. It is here that surgeons differ very much as to the best method of procedure. Deaver, Morris and many other prominent surgeons recommend in this class of cases immediate operation, and this is probably the most universal practice. However, Ochsner pointed out a method by which the inflammation could be arrested by the walling-in process, in probably 90 per cent. of such cases, which would place them under the same category as abscess cases. In my judgment, the Ochsner plan of treatment is based on the proper interpretation of Nature's method of protecting the peritoneum, and as a general method of treatment I believe it to be the best.

It is also my opinion that many of the reported successes from operation in diffuse peritonitis originating from the appendix in reality have been cases in which only the right iliac and middle abdominal regions were involved, the inflammation being circumscribed. Diffuse peritonitis due to an infection from the appendix is usually of the purulo-gangrenous variety, and is very likely to become limited to the lower two-thirds of the abdomen.

It is evident at operation in diffuse peritonitis and at postmortems on these cases that Nature has most usually made some effort at limiting the progress of the inflammation by the formation of adhesions of the intestines and omentum. Nature should be assisted by favoring the arrest of peristalsis and by posture, operative procedures being deferred to a later period. Such cases will not all recover, but a larger percentage, I believe, will be saved than by operative procedures during the progressive stage of the inflammation. The operative technic in these cases should be identically the same as in large abscess cases, viz., incision and establishment of drainage.

CONCLUSIONS.

1. In incipient appendicitis, until the patient is placed in the hands of the surgeon, all food and drink should be withheld and the patient nourished by the rectum.

2. Every patient should be advised of the advantages of an early operation.

3. Radical work, that is, the removal of the appendix or closure of an opening in the cecum, should be done in abscess cases, when it can be done without additional risk to the life of the patient.

4. The practice of merely draining in every abscess case should be condemned as non-surgical.

5. Operation during a progressive diffuse peritonitis will be attended with a higher mortality than the method of procedure I recommend.

6. If the physician would direct his efforts, in the treatment of appendicitis, toward the protection of the peritoneum, until he could transfer his case to the surgeon, the mortality in this disease would be greatly lessened.

7. The adoption of the more rational method of dealing with diffuse peritonitis will convert a large percentage of these cases into circumscribed peritonitis, when they can be rightly classed as large abscess cases, having the same mortality rate.

AN OPERATION FOR PYOSALPINX WITHOUT LIGATURE, CLAMP, ARTERY FORCEPS OR BLEEDING, BY OVERTHROW PROVISIONAL SUTURE METHOD.*

REPORT OF FIFTY-NINE CASES WITH ONE DEATH.

W. D. KELLY, M.D., Ph.G.
ST. PAUL, MINN.

Pyosalpinx, or pus in the tube, is the result of an inflammatory action in and about the tube, due to an infection.

ETIOLOGY.

The most frequent causes of pyosalpinx are: Abortion or miscarriage, gonorrheal infection, tubercular infection, infection with the *Bacillus coli communis, streptococcus* or *staphylococcus* or infection through trauma or extension to tube of an appendicitis.

PATHOLOGY.

If the tube is infected from its proximal end, the mucous membrane is congested and distended with blood, thereby encroaching on the lumen of the tube. The infection is then advanced by this condition of affairs to the ampulla and then to the distal end of tube. Each and every extension causes or will cause what is spoken of by the patient as "cramp" or shooting or boring pains in the ovary. This condition is frequently spoken of by the physician as an "ovaritis," and if the patient becomes remonstrative her case is diagnosed as neurasthenic, hypochondriac or hysteric.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association at the Fifty-sixth Annual Session, July, 1905.

The fimbriated end of the tube is approximated by omentum, and this may become sealed against the tube and thus keep the inflammatory action within certain limits. When the tube is patulous, the infection spreads to the peritoneum and is accompanied by a local or general peritonitis. This condition tends to draw the uterus inward and downward until the distal end of the tube and ovary, in the majority of cases, is found deeply fixed in the pelvis, posterior to the uterus and filling up the Douglas pouch.

I have performed the following operation for several years: After opening the abdomen, the patient is placed in the Trendelenburg position; the bowels, if possible, are pushed back; if adherent, they can be dissected free with a dry sponge and then pushed back. The general cavity is walled off with one or two large strips of gauze. Bleeding from bowel or omentum, if any, should be sought for and vessels and tissues sutured, if necessary. The broad ligament is sought for and the finger is invaginated between the ligament and the mass and the tube partially freed at the distal end.

The index finger is then forced between the broad ligament and the tumor. A cutting needle, half curved, with No. 3 pyoktannin, is passed between the mass and the broad ligament on to the finger, and the broad ligament is tied off. Scissors are used to sever the tissue between the broad ligament and tube. The finger is still further advanced, and an overthrow provisional suture, which usually includes the ovarian artery, is taken in the broad ligament.

The separation of the mass is continued by the farther advancement of the finger; application of another provisional suture, and the severing of the mass from the broad ligament with the scissors, a little at a time. Immediately on severing the tissue the provisional overthrow suture is tightened, thus preventing hemorrhage. In the majority of cases it is well to put in the provisional Billroth suture before severing the artery. The finger is still farther advanced toward the uterus, and the broad ligament is severed as before described, following the provisional suture until the horn of the uterus is reached. The provisional suture is placed in the uterus, an elliptical incision is made, and the tube is removed from the uterus and the suture tightened. Another suture, if necessary, is imbedded in the uterus and tied. The uterus is then grasped with the hand and elevated, if possible. If not, an attempt is made to separate the adhesions directly behind the uterus, and in this way gradually to shell out the mass from before backward. It may be necessary to tie off some omentum or bands of adhesions.

I do not hesitate to operate in acute cases of pyosalpinx if the tube can be felt free in the pelvis. An anesthetic is used at the first examination. In 59 cases I succeeded in saving 51 or 52 specimens, and at a meeting of the pathologic section of the Ramsey County Medical Society I had the pleasure to show 39 specimens, all of which were intact and not opened or ruptured in any way and still containing large quantities of pus; the pus noted in the recording of my cases by my assistants and internes as a ruptured tube or ovary was found to be an extratubal or peritubal abscess in almost every instance except tubes or ovaries that were so macerated as to tear in making a dry dissection.

My reasons for reporting the following operations in detail are the different conditions, features and complications found.

CASE 1.—Mrs. J. O. D., aged 30, American.

History.—There have been repeated attacks of pain in the right lower quadrant of abdomen. She has had a discharge of pus from the bowel on two occasions following these attacks. While under my care, she passed large quantities of pus in the urine; this condition remained for thirty-six hours during the first attack and about one day longer in the second attack. In neither case was there any pain in urination or any amount of blood that I could detect with the naked eye in the urine; the discharge was not offensive.

Operation was not consented to until the beginning of another attack, which occurred about three months after previous attack.

Operation.—I made an incision in the median line, and found the omentum adherent to the anterior abdominal wall, completely hiding from view the contents of the abdomen. I began to separate the omentum at or about the junction with the bladder; immediately beneath I found the bladder adherent to several loops of gut; I stripped off the gut and came on several large broad bands, which at first appeared to be a portion of the bowel. Finally I cut through and tied off several long strips of dense adhesions, with several pieces of omentum. This brought me to what I supposed was the tube; after separating more adherent bowel and clearing up the field of operation I opened into an abscess cavity which extended up over the brim of the pelvis to the junction of the large and small bowel; the tube was then located in its usual pathologic position and removed as before described.

Deep in the pelvis was an abscess which was completely walled off by a membrane which was semitransparent. The pus could be seen plainly, moving with each effort the patient made while breathing, and snugly encased in its capsule. I punctured the capsule with my finger, mopped the cavity dry, and inserted a long, narrow, loose gauze drain; I did not sew up the abdominal wall, excepting two sutures in the peritoneum.

There was considerable shock, necessitating injections of saline solution; strychnin, gr. 1/16, was given hypodermically.

Patient made uneventful recovery.

CASE 2.—Mary McC. Sept. 21, 1899, aged 18, domestic, single.

History.—About six months ago the patient began having pain with monthly flow, which was excessive in quantity. She says she had yellowish discharge from the vagina last winter, accompanied with pain in her side; she was confined to her bed about three weeks during this attack; at the present time there is a yellowish discharge from the vagina, which began about two weeks ago, accompanied by considerable pain in the left side. Patient has been confined to her bed for one week.

Diagnosis.—Single pyosalpinx (left).

Operation.—Three-inch incision was made in the median line; hemorrhage was slight. The right tube was cystic. The tumor was the size of hen's egg and was aspirated; right ovary was normal; neither tube nor ovary were removed. The left tube was distended with pus and densely adherent to all surrounding structures.

The tumor was aspirated and about 100 c.c. of pus evacuated; the ovary was somewhat enlarged. Adhesions were broken up and the tube and ovary removed; the stump was cauterized with the actual cautery, and peritoneum sewed over the stump. Several small cysts along the tube were opened and drained. The wound was packed with sterile gauze and partially closed with silkworm gut.

The patient received two hypodermic injections of strychnin, gr. 1/20 each, while on the table, and an enema of one quart of salt solution immediately after operation.

There was considerable shock, but the patient rallied well. She was discharged, well, Nov. 8, 1899.

CASE 3.—Miss G., aged 21, American, single. July 10, 1899

History.—Patient complained of backache, general malaise, bearing down and localized pain in pelvis. Menstruation was irregular and profuse. She had leucorrhea, with a very offensive discharge. The uterus was retroflexed, pushed over to the left side and fixed laterally and posteriorly.

Operation.—Medium incision was made. The uterus and adnexa were in the bottom of the pelvis. The appendix was

found to cross over the brim of the pelvis and to imbed itself in the mass. An attempt was made to separate the appendix from the mass, which was successful only after removing the proximal end by cuff and purse-string method. The right tube and ovary were removed by method described; no shock; no bemorrhage. Patient left hospital, well, Aug. 12, 1899, with exception of some leucorrhea, which has since disappeared.

Case 4.—Mrs. M. N., aged 24, American. Aug. 5, 1899.

History.—She complained of pain in both sides and was constipated. There was pain on urination. She was hysterical. The history was given me by her family physician. He said she complained of everything aching and paining.

Examination.—Examination showed gonorrheal urethritis, offensive leucorrhea and aggravated retroflexion. The finger in the vagina encountered a solid, resisting mass to the left of the median line, which proved to be the fundus of the uterus. There was a large, resisting mass in the right iliac pelvic region.

Operation.—Oöphoro-salpingectomy and appendectomy. The abdomen was opened in the median line. The appendix could be plainly seen passing downward and losing itself in a large mass on the same side. I began to free it and found an appendix 6½ inches long, adherent to the lateral and posterior walls of the uterus. The tube was removed in usual manner, after rupture of ovary, containing pus. The cavity was dried in the usual manner. Patient made an uneventful recovery and was discharged Aug. 23, 1899.

Case 5.—C. S. was admitted to hospital Sept. 3, 1899, aged 26, single, clerk.

History.—Patient menstruated last three months previously. Ulcers were noticed on labia and on vagina. Purulent discharge was present. In July there was a general eruption all over the body, with headache and pains in the bones.

Diagnosis.—Tertiary syphilis, cystic ovaries, double pyosalpinx, specific panophthalmitis, with glaucoma adhesions.

Operation.—Double oöphoro-salpingectomy. An incision was made in the median line above the pubes. The wound bled profusely and the hemorrhage was controlled with some difficulty. Right ovary was somewhat cirrhotic and prolapsed; left ovary was cirrhotic, and tube thickened and distended. The tubes and ligaments were ligated close to the uterus. Ovaries and tubes were excised and the stumps sewed over with fine catgut. Adhesions of the broad ligament to the ovary were broken up. The wound was closed with catgut and a Halstead subcuticular suture of silkworm gut. She was discharged, improved, Nov. 24, 1899.

I examined patient about a year after operation; she had gained twenty pounds in flesh and was feeling, as she expressed it, very well.

Case 6.—M. M. was admitted to hospital Sept. 21, 1899. Age, 28; married; housewife.

History.—The patient has always enjoyed good health. She has had two normal labors and one miscarriage two years ago. She began to have a discharge from the vagina several weeks ago, followed shortly by pain low down in the abdomen on both sides. Menstruation was regular; the last time it was somewhat painful.

Examination.—Patient was well nourished, the tongue was clear; chest, heart, and lungs were normal. There was tenderness on deep palpitation over both ovaries; the abdomen was somewhat rigid; the uterus was fixed posteriorly and deflected to the left side. A tumor was distinctly felt in the right side.

Diagnosis.—Double salpingo-oöphoritis.

Operation.—A median incision was made about three inches long, beginning one inch below the umbilicus; the recti muscles were separated and the peritoneum opened. The right tube and ovary were found thickened and prolapsed into the cul-de-sac; the ovary was cirrhotic. The adhesions were extensive, especially to the sigmoid on the left side. By separating the tube from the sigmoid, a small abscess was opened and the tube and ovary were freed. The broad ligament was tied off and stitched over with peritoneum. The tube and ovary were removed and the right tube and ovary were freed and brought up into the wound. The tube was separated from the broad ligament by overstitching with the Billroth suture and tube and ovary were removed. The cavity was dried and closed with interrupted sutures of catgut; the skin was closed by subcuticular sutures of silkworm gut. The patient made an uneventful recovery and was discharged well Nov. 10, 1899.

Case 7.—J. D., aged 23, married, was admitted to hospital July 6, 1900, and operated on July 14, 1900.

History.—The patient always had been sickly and had a great deal of headache. She had kidney and liver trouble. Three years ago she had a very bad cold and was treated by a physician. She had diphtheria when 12 years old. On May 2 she gave birth to a child; labor was normal. She remained in bed two weeks, got up and went to her physician at his office. He made an examination and found lacerations of vagina and cervix; he said he could not operate until discharge ceased. He gave one treatment and the patient, after being up three weeks, was compelled to go to bed again. She complained of severe pain in right ovarian region. Her appetite has been very poor and bowels irregular; she had to take cathartics.

Diagnosis.—Retroflexed uterus, pyosalpinx, (double) rectocele, cystocele.

Operation.—Double salpingectomy and appendectomy. An incision about three inches long was made in the abdominal wall down to peritoneum. The peritoneum was picked up and a small incision made. Fingers then inserted and the peritoneum torn open. The bladder,uterus, appendix and intestines were found firmly united by adhesions. The appendix was picked up and found to be adherent to posterior wall of the uterus; it was removed by being tied off with catgut, and the serous membrane was then stitched over it. The adhesions were broken up between the intestines and the Fallopian tube; by so doing, the tubes gave way and allowed from two to four ounces of pus to escape into the abdominal cavity, which was sponged out with dry sponges. The tubes were separated from the surrounding structures and tied off with catgut and removed. The peritoneum was sutured with a running suture of catgut; the muscles were approximated with catgut sutures; the skin with subcuticular silkworm catgut suture. There was considerable shock and hemorrhage. Patient was discharged, well, Aug. 22, 1900.

Case 8.—A. S., aged 34, married, was admitted to hospital July 9, 1900, and operated on July 12, 1900.

History.—Patient has had three children and has always been in good health. While going upstairs four days ago she fell and struck against a pail; she was pregnant at the time. Pain of injury seems to have been down in the left iliac region.

Diagnosis.—Pyosalpinx (left).

Operation.—Single salpingo-oöphorectomy and appendectomy. A median incision was made about four inches long. Intestines, bladder, tubes and uterus were found to be all adherent. Adhesions were broken up by dry dissection, using sponge on finger. The right tube was freed and examined; it was somewhat enlarged. It was aspirated, but, as no fluid was found, it was replaced. The appendix was found deep in the pelvis and brought up, and the serous coat was stripped back, forming a cuff. The mesoappendix was cut away and overcast with running suture of No. 2 plain pyoktannin catgut; the appendix was clamped and cut off; the stump was cauterized with 95 per cent. carbolic acid, followed by alcohol, turned in and a purse-string suture put round cuff and drawn tight; No. 2 pyoktannin catgut was used. The left tube was much enlarged and firmly adherent, deep in the cul-de-sac. In freeing the tube an abscess was opened, allowing a fluid to escape; this was sponged away, the fimbriated extremity brought out, and ovary and tube cut away. Small cuts were taken and each one followed by overcasting the stump with a running button-hole stitch. Skin wound was closed with subcuticular stitch of silkworm gut. The patient was given an enema of warm oil and whisky. Recovery was uneventful. Patient was discharged July 19, 1900. No symptoms of miscarriage.

Case 9.—S. C. was admitted to hospital July 15, 1900, married, aged 20.

History.—Patient was well until one and one-half years ago. She had a child at full term previous to admission to hospital. She remained in bed three weeks after confinement, since which

time she has been well up to one week ago, when she began to have pain in the left lower abdomen, with weakness and loss of appetite. A slight bloody discharge from the vagina was present. First menstruation since confinement occurred one week ago; it was profuse and painless and lasted four days.

Diagnosis.—Lacerated perineum and cervix; postparametritis; left tubal abscess; subinvolution; granular endometritis.

Operation.—Left salpingo-oöphorectomy. There were very extensive adhesions found between the left ovary and tube and intestine; they were tied off and removed; the abscess was aspirated. The left ovary and tube were removed by ligaturing, beginning at the horn of the uterus; the tube was excised and the peritoneum sewed over stump and raw surface. Hemorrhage was severe and was counteracted by hypodermoclysis, strychnin and rectal enema. Shock was very severe. About two ounces of pus were removed August 10. Lobar pneumonia developed in the upper left lobe. Patient was convalescent August 22, and was discharged, well, Aug. 29, 1900.

Case 10.—A. Y., aged 21, single, was admitted to hospital May 9, 1901, with a diagnosis of right pyosalpinx.

Operation.—The right tube and ovary were found to have fallen down in the cul-de-sac of Douglas and to be lying somewhat behind the left tube and ovary. The right tube was enlarged to about the size of a man's finger; the ovary was somewhat enlarged and lobulated. The broad ligament was tied off with pyoktannin catgut and the stump stitched across, as the tube and ovary were removed with scissors. The vermiform appendix was found on examination to contain a small particle about the size of a grape seed. The mesoappendix and appendix were tied off and the appendix removed, the stump being stitched over by the cuff method. The peritoneum was dissected off and rolled down. The appendix was cut off and cauterized with actual cautery; the cuff was then stitched over the stump and a few more stitches of catgut put into the mesoappendix and vermiform appendix stump. There was some hemorrhage from a small artery in the mesoappendix; this was tied off with catgut; the peritoneum closed with a catgut suture, muscles with the same, skin and superficial fascia, subcuticular silkworm gut. There was slight hemorrhage, but no shock. Patient was discharged, well, Aug. 26, 1901.

Case 11.—A. H., aged 28, married, was admitted to hospital Aug. 4, 1903.

History.—Patient has had three children; two are living. She has had two miscarriages; the last one occurred about two years ago. Last child was born in 1897. About four months ago she had chills and severe headache; these chills were of short duration at first, but are longer now and more frequent; she does not have as much headache now as a few months ago; she says she has had a pain in the left iliac region for the past ten years and pain in region of spleen, which radiates toward the back, produced by pressure in the first place. She complains of pain starting in the left iliac region and radiating down the inner side of the leg to the toes, and also complains of pain in right lumbar region for the past two weeks. Menstruation has not been regular; sometimes it is early and sometimes late. In July there was not much, but in August the flow commenced a week and a half sooner than it should and lasted just two weeks. The amount was excessive in quantity, dark in color, containing clots.

Diagnosis.—Salpingitis, pyosalpinx.

Operation.—Salpingo-oöphorectomy. An incision was made in the median line, about 2 inches below the umbilicus and extending 2½ inches toward the pubes; the fibers of the rectus muscle were separated and the fascia, thus exposing the peritoneum, which was grasped with dissecting forceps and an opening made the size of the external incision. Numerous adhesions were broken up and the uterus and left tube were found adherent to the bladder; the left tube contained an abscess and about two ounces of pus aspirated. The abscess was of the tubo-ovarian variety, and, the ovary being much involved, it was deemed advisable to perform salpingo-oöphorectomy. A suture of pyoktannin catgut, No. 2, was employed and a quilt suture was used to stitch the broad ligament and to control hemorrhage. Great care was necessary so as not to injure the bladder, as it was closely united to ovary, tube and uterus; on the latter it was united nearly to the center of the fundus. The intestines were walled off by sponges to avoid general infection of peritoneal cavity; the cavity was thoroughly swabbed out and the peritoneum sutured with pyoktannin catgut, No. 2, quilt suture. The fascia and the muscles were approximated with like suture material and like stitch, the skin was closed with subcuticular stitch of silkworm gut and a dry gauze dressing was put over wound. Patient was discharged, well, Aug. 29, 1903.

Case 12.—K. P., aged 22, single, was admitted to the hospital Aug. 20, 1900.

History.—The patient was well till three years ago; since then she has been in hospital twice with present trouble. Three years ago she awakened at night with severe pain in the right iliac fossæ; she had chill after chill, followed by profuse sweating; she vomited, but got better in the morning; she remained in bed three days and then came to the hospital, attended by her physician; she improved and went home; six months later she returned to the hospital with the same trouble; in two weeks she again went home, since which time she has never been well. There were dragging pains in the right side; painful urination and defecation. A vaginal discharge was present, white and watery at first, later becoming thick and yellow.

Diagnosis.—Left pyosalpinx; anteversion of uterus.

Operation.—Salpingo-oöphorectomy. Right ovary was cystic. The tube was excised, tied at end and sewed up with catgut; one ligature was inserted. The left ovary and tube were found diseased and bound down to the uterus and intestines by very extensive adhesions. The left ovary and tube were removed. On examination the right ovary was found cystic and was resected. Appendix was normal. There was no hemorrhage nor shock. Patient was discharged, well, Sept. 10, 1900.

Case 13.—E. L., aged 33, widow, was admitted to hospital Aug. 26, 1902.

History.—About two months ago the patient says she lifted hard and felt as if something gave way within her abdomen. For two or three days after this happened she had burning pain across the lower abdomen. She says she had a fever and pain which gradually grew worse. About a week later she began to vomit; the vomiting caused her a great deal of pain. She says that pains are sharp and that they are getting worse and worse; she has not slept well at night for past two weeks. Abdomen was swollen and very tender. She has been regular in her menses, but flowed more than usual. She has had considerable pain during these periods, but more of late. She has not menstruated for two weeks and had a slight vaginal discharge day before entering hospital. She had a great deal of pain in the region of the bladder and was unable to urinate for two or three days. She was catheterized several times.

Diagnosis.—Gonorrheal salpingitis; tubo-ovarian abscess.

Operation.—Double salpingo-oöphorectomy. The fundus of the uterus was found bound down to the intestines with adhesions which had to be dissected away. After the fundus was free the tubes and ovaries were removed. The operation was attended by considerable hemorrhage. There were adhesions to bowel and rectum. The bowel was opened into by separation of adhesion. The wall of the abscess by pressure had produced atrophy of the wall of the bowel; in fact, the mucous membrane was all that prevented opening of the abscess into the bowel. The gut was resected and a Murphy button applied. The patient was discharged, well, Sept. 30, 1902.

Case 14.—D. E., aged 18, single, was admitted to hospital Aug. 23, 1902.

History.—The patient had had diphtheria and measles. She had had rheumatism and was confined to bed all winter. About a month ago she was taken ill with pain across the lower abdomen. Abdomen was tender and somewhat swollen. She said that pains seem to go down into legs and that during the attacks of pain she vomited several times. Pains were sharp and her head and back ached. Those symptoms, except the vomiting, kept up more or less until she entered the hospital. She said that her hands and feet are always cold and clammy. She does not sleep well.

Diagnosis.—Gallstones, gonorrhea, pyosalpinx, appendicitis.

Operation.—Laparotomy; salpingectomy; appendectomy.

The appendix was found curled on itself and adherent to the uterus. The left Fallopian tube was found to be inflamed and reddened. It was taken up with a purse-string suture of pyoktannin catgut, first being freed from intestinal adhesions. The tube and ovary were excised; the broad ligament being tied ahead of them, with a running suture of pyoktannin catgut. The appendix was freed from its mesentery and the serous membrane incised circularly with a knife about one-quarter of an inch above the attachment to the intestine; it was ligated close to this attachment and cut off where the circular incision was made. The stump was cauterized with carbolic acid and alcohol; a purse-string suture of pyoktannin catgut taken round it and the stump inverted and suture drawn. The patient was discharged, well, Sept. 30, 1902.

Case 15.—A. W., aged 28, single, was admitted to hospital July, 1903.

History.—In the past three years she has been troubled with pains in her pelvis. She began to menstruate and has had discharge ever since. She does not flow much during the menstrual period. About a week previously she began to have chills and sharp pains in the lower part of abdomen. She was in bed two days; then got up and pain began in back, which at last localized to one spot with a burning sensation. This was on the right side. Bowel movements caused pain.

Diagnosis.—Pyosalpinx and ovaritis of right side.

Operation.—Laparotomy: Salpingo-oöphorectomy. An incision was made in the median line, about four inches long, between the umbilicus and the pubes. Intestines, right tube and uterus were matted together in Douglas cul-de-sac, and the appendix was adherent to the tube. Adhesions were gently broken up. The tube was twisted and kinked, being very thick and irregular nearest the uterus; a pyoktannin, No. 2, ligature was passed round it, near the uterus, and tied and the uterine attachment cut. The ovary was grasped with a pair of forceps, but its pedicle was torn and the ovary was removed and torn. The pedicle was sutured with No. 2 pyoktannin catgut and the suture continued along the broad ligament at the uterine attachment, which was cut loose. The suture was continued by a needle passed through a loop of the preceding stitch. The mesoappendix was cut and then sutured in the same way as the broad ligament, and the peritoneum of the appendix was incised all around at the base and folded down as a cuff; the appendix was ligated about one-quarter of an inch below with the same kind of catgut and then cut a short distance from ligature, the end being touched first with 95 per cent. carbolic acid and then with alcohol. The open end was closed with No. 0 pyoktannin catgut and the peritoneal cuff folded over the end and sutured with the same. The peritoneum was closed with continuous suture, No. 2, and fascia and muscles in the same way. The skin was sutured with subcuticular silkworm gut. After closing it the line of suture was irrigated with hot normal salt solution. The patient was discharged well Aug. 22, 1903.

Case 16.—A. F., aged 22, married, was admitted to the hospital June 24, 1903.

History.—The patient has had one child, which died when 4 days old. About two weeks ago she had severe pains in the lower abdomen on both sides. About five days ago pains on left side stopped, but pain on right side persists. She says that when she urinates she has bearing-down pain on right side.

Diagnosis.—Double pyosalpinx (gonorrhea).

Operation.—Laparotomy: Salpingo-oöphorectomy. The abdomen was opened in the median line. On opening the peritoneal cavity, a large mass, consisting of adherent omentum, was brought into view. On investigation of the right ovarian region, another mass about the size of the first was discovered bound down with firm adhesions and lying more in the abdominal than in the pelvic cavity. This mass was separated from surrounding intestines, which later were walled off with gauze pads. Omental and intestinal adhesions were tied and cut. The pedicle of the mass was transfixed with needle, tied off with pyoktannin catgut and cut. The mass was lifted up, but ruptured before it could be removed. It proved to be a tubo-ovarian abscess, containing almost a cupful of yellowish pus. The pus was sponged out; the stump and edges of the broad ligament were brought together and sutured, a running suture of catgut being introduced. These stitches tore out and later had to be reintroduced. The left side was investigated and another tubo-ovarian abscess was found and treated in the same way, except that a portion of the ovary was dissected from the mass and allowed to remain. The pelvic and abdominal cavities were sponged dry; the peritoneum was closed with catgut. Muscle, fascia and aponeurosis were closed with Billroth's chain suture, pyoktannin catgut being used. The skin was closed with subcutaneous stitch of medium silkworm gut. Patient was discharged, well, Aug. 31, 1903.

(To be continued.)

DIAGNOSIS OF AFFECTIONS CHARACTERIZED BY INTESTINAL OBSTRUCTION.

G. PAUL LA ROQUE, M.D.

Lecturer and Bedside Instructor in Surgery at the University College of Medicine.

RICHMOND, VA.

Since the clinical phenomena presented by incomplete or partially obstructive lesions in this tube are referable, rather to the nature and location of the lesion than to obstruction, these affections will not be studied in this paper.

Complete obstruction to the passage of the contents of the intestinal canal is generally characterized clinically by the symptom-complex of an acute affection. The causative lesion, however, may be of acute (sudden) or chronic (slow) development. In accordance with the underlying clinically recognizable etiologic factor, the different varieties of acute intestinal obstruction (ileus) may be classified as (1) dynamic ileus and (2) mechanical obstruction.

1. *Dynamic Ileus.*—This is due to peristaltic paralysis either of the entire intestine or of a segment of gut and is typified by the absolute intestinal obstruction incident to general peritonitis. It is not rarely due to mechanical and chemical irritation of the peritoneum, such as is incident to extensive operations about the mesentery, vigorous toilet of the peritoneum, prolonged rough handling, chilling and exposure of this structure and was common in the days of antiseptic abdominal surgery under the use of carbolic acid spray and other antiseptics in the peritoneal cavity. Contusion of the peritoneum due to external violence is a cause. It may also result from excessive meteorism due to enteritis. Intestinal paresis may result from splanchnic and spinal nerve degeneration, cord injury, and is a common terminal condition often directly causative of death in certain systemic diseases, particularly pneumonia, uremia, meningitis, typhoid fever and others, and especially when associated with delirium, unconsciousness, coma and excessive pain and other symptoms which at the same time divert the attention from the abdomen and predispose to constipation and to meteorism. In mild form transient paretic ileus is noted after the removal of large abdominal tumors and ascites, and is the rule after childbirth. The temporary reflex intestinal paresis incident to injury of a testicle, operative procedures about the anus and rectum, during a paroxysm of severe renal, ovarian, biliary or pancreatic colic, and often conspicuous in the symptomatology of these affections, is non-progressive is severity and transient. In many cases of mechanical obstruction, particularly when due to strangulation, there may be initial reflex paresis of the entire gut, though the proximal portion soon recovers and becomes hyperactive against the strangulated para-

lyzed segment which constitutes a mechanical obstacle to peristalsis.

2. *Mechanical Obstruction.*—This may result from strangulation of a segment of intestine or its mesentery through occlusion of its blood vessels, the strangulated portion of gut constituting an obstacle to or solution of continuity of the peristaltic wave. It is typified by the ileus incident to mesenteric embolism and thrombosis, torsion of the mesentery, constriction of the blood vessels by bands, adhesions, hernial orifices and traction, and the early stages of incompletely occlusive invagination (intussusception). Mechanical occlusion, either by obturation or stenosis of the lumen of the intestine, is the typical cause of mechanical obstruction. Obturation results from impaction of gallstones, enteroliths, fecal material and innumerable varieties of foreign material introduced either by way of the mouth or *per anum*. Stenosis may result from stricture formation, cicatrical or neoplasmic in character, constriction from without by bands of peritoneal adhesions, any abdominal or pelvic tumor, distended and displaced organs and finally volvulus (torsion) or angulation (kinking).

I. DYNAMIC ILEUS.

Cardinal symptoms: (1) In all cases the signs of pseudoperitonitis or peritonitis are present and coincide with or antedate those of obstruction. (2) Absolute constipation to both feces and flatus exists, and with this (3) absent peristalsis. (4) Pernicious vomiting, becoming stercoraceous in character, supervenes. (5) Progressive uniformly distributed abdominal tympany becomes extreme. (6) Pain, at first, is that of the causative factor. As distention increases, general abdominal discomfort, costal breathing and shortness of breath are noted. These are ameliorated by belching of gas and evacuation through the rectal tube. True intestinal colic does not occur with absent peristalsis, though this symptom may precede those of obstruction. Other forms of colic must not be mistaken. When peritonitis is the cause (and this is the typical and most important variety of dynamic ileus) the pain of this affection antedates the signs of obstruction and continues till toward death. (7) Constitutional depression is generally conspicuous. Shock may exist as a coincident symptom or may be absent. (8) The urine is scanty, concentrated and contains an excess of indican if the condition is as much as twenty-four hours in duration.

II. MECHANICAL OBSTRUCTION.

The signs common to mechanical ileus may conveniently be enumerated in two groups, (A) strangulation; (B) obturation.

A. Strangulation Ileus: The signs of this condition are divisable into those of (*a*) strangulation *per se*, (*b*) peristaltic obstruction and intestinal distension, (*c*) gangrene of gut, (*d*) peritonitis.

(*a*) Strangulation *per se*.—(1) Sudden, violent, agonizing general abdominal pain is due to nerve irritation; (2) persistent nausea and vomiting are reflex in origin; (3) profound shock is noted; (4) peristalsis is commonly reflexly diminished in intensity or paralyzed. To these is soon added: (5) urgent desire to defecate, often to the degree of tenesmus. One or two good bowel movements may or may not occur, mucus and often blood are later ejected.

(*b*) peristaltic Obstruction and Intestinal Distention.—(6) Constipation becomes absolute to both feces and flatus; (7) nausea and vomiting increase in severity, becoming finally stercoraceous. (8) Intestinal tympany is first noted in the segment of gut strangulated, later in all the intestine above this seat. Distention of the distal portion of the bowel does not occur. (9) Exaggerated peristalsis is often visible, always audible as tumultuous sounds. (10) Pain is distinctly colicky in character and presents remissions and exacerbations in intensity.

(*c*) Gangrene.—With this there is: (11) shock or collapse; (12) diminution, often subsidence of pain; (13) enfeebled but still present peristalsis; (14) foul breath, coated tongue, headache, rise of temperature to normal or slightly above. These are all due to absorption of toxines (stercoremia).

If unrelieved these symptoms are soon followed by:

(*d*) Peritonitis—This is caused by intestinal permeability, perforation or rupture, and is heralded by (16) sharp pain (may be absent); (17) reflex rigidity; (18) fever; (19) leucocytosis; (20) all the signs of dynamic ileus (see above); (21) soon the evidence of free fluid in the peritoneal cavity; (22) peritoneal facies.

B. Obturation Ileus: The signs of this are divisible into local obstruction to the lumen of the gut, proximal distention, stercoremia (autointoxication), intestinal rupture. In this condition we note: (1) Constipation. This is sudden and generally absolute, though the lower bowel may be emptied. False diarrhea may occur. (2) Intestinal colic. (3) Exaggerated peristalsis is visible and audible. (4) Proximal progressive tympany; and (5) nausea and vomiting are all pronounced, progressive and finally vomiting becomes stercoraceous. (6) Foul breath, coated tongue and moderate rise of temperature. (7) Finally, the signs of intestinal rupture are engrafted and the clinical picture radically altered. Distention becomes uniform and peristalsis paralyzed. The patient, if conscious, may have felt a sensation of rupture. There is frequently a history of the administration of cathartics.

Given a case of mechanical intestinal obstruction, the following table will be useful in differentiating strangulation from occlusion:

TABLE FOR DIFFERENTIATING STRANGULATION FROM OCCLUSION.

STRANGULATION.	OCCLUSION.
A.—PAIN.	
Generally the first symptom. Sudden, violent, continuous, little chance to progress in severity, may subside with onset of gangrene. Due to nerve irritation.	A later symptom. Less sudden, less violent at first but progressive and paroxysmal. Due to intestinal spasm (colic).
B.—VOMITING AND NAUSEA.	
Initial symptoms, reflex in character, less definitely stercoraceous. Death may occur before feces are vomited.	Later symptom, due to overfilling of the canal. Stercoraceous material is sure to be noted in late stages.
C.—SHOCK.	
Sudden, pronounced and rapidly progressive.	May not be noted early and is of gradual development. Due to pain, autointoxication, sleeplessness, starvation and exhaustion.
D.—BOWEL ACTION.	
Peristalsis in earliest stages is reflexly diminished. False diarrhea with mucus and blood in passages may be noted in mesenteric embolism and in intussusception.	Peristalsis progressively increased from the beginning. False diarrhea is less rare and may be conspicuous. No blood in passages, though watery mucoid material may be ejected.
E.—INTESTINAL TYMPANY.	
Noted first in the loop of gut strangulated and then becomes general.	No circumscribed distention of loop, distention is general from the first.
F.—AUTOINTOXICATION.	
The signs of this are obscured by those of gangrene and peritonitis.	These signs are conspicuous long before peritonitis develops.
G.—CLINICAL COURSE.	
Always violently acute and rapidly followed by gangrene and peritonitis unless relieved.	May be acute, often chronic, with recurrent exacerbations dependent on the cause (see below). Peritonitis is late, gangrene may not occur.

Diagnosis of Cause of Mechanical Obstruction.

A. STRANGULATION.

In all cases of sudden abdominal pain with violent vomiting and constipation, especially after some sudden muscular effort as heavy lifting, all the hernial orifices must be examined. In one known to have a hernia, strangulation is the most probable cause.

Strangulated Hernia.—The obstruction symptoms are those of strangulation ileus (see above). Pain may be felt at the point of strangulation, the hernia becomes painful, tender, enlarged, generally irreducible, dull to percussion, the impulse on coughing is lost. If only the omentum is strangulated, constipation is less absolute. Sudden cessation of pain points to gangrene or to reduction. Strangulation must be differentiated from incarcerated and from inflamed hernia. In neither of the latter is impulse on coughing lost. In incarcerated hernia the gastrointestinal signs are of a mild imperfect obturation of the bowel. In inflamed hernia the signs are of local inflammation, with perhaps localized peritonitis, but never positive ileus.

On excluding strangulated external hernia the signs referable to the internal hernial orifices should be sought. Diaphragmatic, obturator, sciatic, duodenojejunal and retroperitoneal hernia must be suspected.

Diaphragmatic Hernia.—In this there are, in addition to the signs of strangulation ileus with little or no abdominal distention, the signs of suddenly developing pneumothorax, generally on the left side, without pulmonary or pleural cause. Vomiting is never fecal. Obturator and sciatic hernias are characterized by pain in the region of these orifices, often referred down the thigh. Tenderness may occasionally be elicited on rectal examination. These, together with retroperitoneal, duodenojejunal and other forms of internal hernias, are generally unrecognizable save as strangulation ileus.

Strangulation and Occlusion by Bands or Adhesions.—In about 70 per cent. of patients there is a history of previous peritonitis (due to appendicitis, salpingitis or previous abdominal section) though this may have to be interpreted from previous attacks of colic, etc., rather than by knowledge of the patient. It is extremely rare in childhood. The signs are of strangulation and mechanical ileus, with complete or incomplete occlusion (see above). Constipation is absolute; there is, as a rule, no tenesmus, nor is bloody mucus passed from the empty rectum. Stercoraceous vomiting is late. Distention is gradual and central (involving chiefly the small gut). A fixed, distended paralyzed loop of intestine may be discovered. The colon is apt to be empty and collapsed, causing lateral flattening as contrasted with central distention.

Mesenteric Embolism.—This form of obstruction is characterized by the signs of strangulation ileus, with intestinal hemorrhage, soon free fluid in the peritoneal cavity and occasionally a palpable blood tumor between the layers of the mesentery. There may have been no previous disease of the intestine and no signs of portal engorgement. There must be a source of embolism, i. e., cardiovascular disease, generally valvular in character, and signs of simultaneous embolism in other parts (lungs, spleen, joints, etc.) must be sought.

Intussusception.—In this affection the signs of strangulation ileus predominate, even though there be complete occlusion of the lumen of the canal. It is almost confined to children, appearing in the midst of perfect health, though dysentery and straining diarrhea may precede and predispose to the condition. Extreme meteorism is exceptional. Flatness in the region of the colon may be noted and in this situation a soft tumor may often be palpated. In rare cases the tumor may be of sausage shape, but this must not be expected. Occasionally the invaginated bowel may be palpated in the rectum or sigmoid. This must not be mistaken for the indurated circular rings incident to hypertrophy of the circular layer of muscle in the wall of the rectum attending chronic dysentery. Tenesmus is generally conspicuous, vomiting is exceptionally absent.

Volvulus is almost confined to individuals past middle age, generally the subject of chronic constipation. The large intestine is the portion involved. The sigmoid (left flank) is commonly the seat of a rounded, tympanitic, quiet tumor, and proximal intestinal distention rapidly becomes extreme. The signs are those of mechanical obstruction and constipation is absolute. Diarrhea, even of the false variety, is exceptional and passage of blood is rare. Tenesmus is common. Vomiting is occasionally absent.

B. INTERNAL OBTURATION.

The most common cause of this is fecal impaction. There are the signs of atony of the bowel. The patient is generally anemic and the victim of chronic gastric catarrh. Constipation for days before the onset of acute symptoms is the rule. The signs are of less rapid onset. Proximal distention and hyperperistalsis are marked. A doughy tumor may be palpated in the colon; rectal examination generally discovers a mass of hardened feces. There may be tenesmus and false diarrhea incident to irritative colitis (stercoraceous) or to channeling of the fecal mass. A high enema is generally curative.

Gall-stone Impaction.—This is rare. It occurs in individuals of gall-stone age and generally a history of cholelithiasis may be elicited. The signs are of mechanical occlusion. In rare instances a hard tumor may be felt in the situation of greatest pain. Should this tumor be made to alter its position in the gut or move downward spontaneously the diagnosis may be justified. A fluoroscopic examination may be useful, but not conclusive as a diagnostic measure. The signs may remit in intensity, and spontaneous passage of the stone in the large intestine is curative.

Impaction of Enteroliths.—This is causative of internal obturation. The diagnosis can be made only in rare cases, in which the mass can be palpated *per rectum*. X-ray examination may be positive or negative. Impaction of *other foreign bodies* can be recognized only when a positive history is obtainable or the material can be shown by *x*-ray examination.

Obstruction by Stricture Formation.—The diagnosis of this as a cause depends on diagnosis of the stricture. The signs are those of mechanical ileus. Obstruction occurs always in the large bowel and toward the anus. Syphilitic and tubercular stricture are found in the rectum and sigmoid. Cancer occurs at one of the curves. Constipation is rarely absolute. Mucus and blood in the fecal matter is frequent. Pain on defecation is present when the disease is located in the rectum or sigmoid.

Congenital Obstruction.—This is caused by imperforate anus, rectum or upper bowel, or by fistulæ between the gut and bladder, uterus or vagina. The symptoms of obstruction occur a few hours after birth. If the anus is imperforate the perineum bulges when the child cries. If the anus is formed a finger in the rectum notes bulging higher up in the pelvic cavity. If a fistula exists between the bowel, bladder or uterus, meconium may be discharged through these channels.

STUDY OF INDIVIDUAL SYMPTOMS.

While in many cases of intestinal obstruction the exact nature and location of the lesion can not be positively recognized before operation, the study of individual symptoms is helpful.

Pain.—This is due first to nerve irritation, later distention and congestion, finally peritonitis. It is generally first referred to the umbilicus, rapidly becoming general. It is colicky in character when obstruction is incomplete (due to spasm); constant and of short aching character when occlusion is complete (due to distention and congestion). Extreme tenderness and true rigidity, being due to peritonitis, are rare in early stages.

Collapse and Vomiting.—In acute cases these signs are due to nerve irritation, and when early severe they point generally to high obstruction, tight strangulation or pinching of the omentum. When occurring late, toxemia is the main cause and low obstruction is suspected. Frequently repeated, easy vomiting, with moderate uniform distention and oliguria, point to high obstruction. True fecal vomiting always means obstruction either in the lower ileum or colon or paralysis of the bowel from peritonitis. When occurring later, less urgent and slowly becoming stercoraceous, while abdominal distention is great, low obstruction or peritonitis is suspected. When obstruction is in the transverse colon the right loin is more distended than the left.

Constipation.—When this is absolute, even to flatus, it means complete obstruction and points to volvulus, acute strangulation by bands of adhesions or at a hernial orifice. In other causes of acute obstruction constipation may be incomplete. Tenesmus, with the passage of mucus and blood, generally points to location at least below the splenic flexure in individuals in middle age or past; to intussusception in children.

Central Distention with Flattening of the Loins.—This sign suggests a lesion of the small gut. Great lateral distention points to the transverse colon or sigmoid as the seat of disease. The greatest tympany is always above the obstruction.

Visible Peristalsis.—Hypertrophy of the muscular wall of the gut is indicated by this sign and is rare in acute obstruction. In all forms of mechanical ileus, peristalsis is greatly exaggerated on auscultation until peritonitis develops.

Rectal Capacity.—When the obstruction is at or below the sigmoid rectal capacity is diminished to one or two pints; when above this point the rectum may hold as many quarts.

A history of biliary colic suggests gall-stones as the cause; chronic constipation suggests impacted feces; previous peritonitis causes constriction from bands; tuberculosis, syphilis and dysentery cause obstruction by cicatricial contraction of healed ulcers. Typhoid ulcers do not constrict the gut.

In children the cause is most frequently intussusception. In middle and old age volvulus, bands and malignant disease are the causes. A doughy tumor in either colon points to fecal impaction, and this in every case must be excluded. In all cases the hernial orifices and rectum must be examined. Abdominal tumors must be sought. Often laparotomy is necessary to diagnose the cause positively.

Diaphragmatic hernia may give no abdominal distention, but signs of dyspnea, etc., aid the diagnosis. They must not be mistaken for pneumothorax.

DIFFERENTIAL DIAGNOSIS.

Mechanical obstruction must be differentiated from all forms of acute dynamic ileus. Particularly that due to torsion of the spermatic cord, acute epididymitis, injury of the testicle, violent paroxysms of ureteral colic (Dietl's crises). In all these the ileus is transient, being due to pain and is non-progressive. Acute pancreatitis, perforation or rupture of hollow viscera, rupture of an ectopic gestation sac, splenic infarction must not be mistaken.

All forms of intestinal obstruction must be differentiated from acute appendicitis, tabetic crises, acute dilatation and volvulus of the stomach. The pain and often bloody diarrhea attending visceral manifestations of the acute erythematous skin affections (Osler's disease) must not be mistaken for intussusception nor for mesenteric embolism.

Acute dilatation of the stomach has been observed after injuries sufficiently severe to cause paralysis of gastric motility, and in mild degree is seen as a result of paralytic overdistention. The cardinal sign is enormous distention as determined by physical examination. There are epigastric pain and tympanitic tumor. Vomiting occurs from overflow, but when the distention is gaseous from motor nerve paralysis this sign may be absent. Regurgitation of gas occurs and is productive of relief. The affection in severe form is extremely rare.

A few cases of volvulus of the stomach are on record. It is characterized by acute agonizing abdominal pain, most severe in the epigastric region, accompanied by shock, persistent violent nausea, with retching and vomiting of small quantities of material from the stomach. A tense tympanitic tumor in the epigastrium may or may not be discovered. Vomiting is never stercoraceous and constipation is not in any way characteristic.

Acute pancreatitis is characterized by sudden, violent, agonizing, shocking pain, most severe in the upper abdomen, attended by severe reflex vomiting. Abdominal distention rapidly occurs, beginning in the epigastric region, soon becoming general. There is epigastric rigidity and tenderness, and often if these two signs can be overcome a deep-seated mass may be palpated. Constipation generally exists at least temporarily, but is not absolute, and can be overcome. Steatorrhea is a later sign, glycosuria may or may not occur. There is generally moderate fever in spite of shock, and if the latter should subside the temperature rises higher. Dyspnea and cyanosis are often observed. Slight jaundice from co-existing catarrh of the biliary passages may be present. Unrelieved there occurs rapid gangrene, peritonitis and death.

The subjects affected are generally males about middle life who have suffered with chronic dyspepsia or obstruction biliary disease. Slight traumatism may be the exciting cause. Abdominal section discovers fat necrosis in the mesentery if the condition is of twelve or twenty-four hours duration (?).

Acute pancreatitis must be differentiated from mechanical intestinal obstruction, biliary colic, suppurative cholecystitis, rupture of the gall bladder, stomach, intestine and other abdominal organs, acute appendicitis, torsion of an ovarian cyst or spermatic cord, injury of the testicle, tabetic crises and all abdominal affections characterized by acute agonizing pain attended by shock.

506 East Grace Street.

Medicine. Osler says that medicine is the only world-wide profession following everywhere the same methods, actuated by the same ambitions, and pursuing the same ends.

THE THERAPEUTICS OF LUPULIN.*

THOMAS F. REILLY, M.D.
NEW YORK.

It is not my wish to call your attention to any new chemical product of coal tar nor to any of the modern medicinal agents that are guaranteed to cure all diseases, but rather to refresh your memories as to some old and, to myself at least, new properties of one of the oldest agents in the materia medica.

The history of the use of lupulin as a medicinal agent dates back as far as the oldest medical literature. Up to the early part of the last century it was used for almost every pain or disease. Before the discovery of the iodid it was considered almost a specific for scrofula, struma and the various skin diseases. In 1852 it was resurrected by the surgeons of the French genito-urinary school, and then for the first time came under the critical eye of modern clinical observation. After a few years of glory and grand enconiums it sank, at least as far as the literature is concerned, into complete oblivion.

Lupulin occurs as minute yellow granules at the base of the scales of the hop. Under the microscope this is seen to consist of a glandular mucus. These granules are greasy to the touch, are inflammable and emit a peculiar odor. According to recent investigations, they contain lupulinic and humulic acids and a volatile oil. The bitter taste is due to amorphous hopresins rather than to alkaloids. The aroma is due to volatile oil. Much of the disrepute into which this agent has fallen is due to the poor quality of the lupulin employed. Only that derived from the best Bohemian hops (Saatz) is of any service. It must be fresh and not exposed to light or heat, otherwise it is inert.

The active principle is closely related to valerianic acid. The resinous oxidation product of lupulinic acid is inimical to the growth of the lactic acid, but has no effect on the butyric ferment. Research with the object of determining the exact chemistry and also the physiologic action of this agent is at present being conducted by Dr. Stern and myself at the Institute for Medical Diagnosis and Research. This will be reported on at a later time. When taken into the body by the mouth, lupulin gives a sense of lively warmth, first in the epigastrium and later over the whole abdomen. It also acts as a mild diuretic. In some individuals it lowers the pulse rate from 10 to 20 beats a minute.

The two principal results that I found to be fairly constant following its use are the production of sleep and the relief of pain. The use of hops in some form or other as a sleep-producing agent is as old as mankind. The employment of hop tea is well known to most of you, and every one knows that beer will often produce the same result. The ancient beers did not contain lupulin. In England from 1050 to 1530 its use in beer was prohibited, presumably on account of its sleep-producing qualities. I have found that lupulin in doses of 20 grains repeated in a half-hour, acts as a mild somnifacient. It is of especial value in the sleeplessness or nervousness following a mild debauch. It then acts nicely on the digestive organs, as well as on the tremor and restlessness. In such cases it may be combined advantageously with tincture of capsic. The bitter taste has this peculiarity in that it does not persist in the mouth as is the case with most bitter agents.

As a general pain-relieving agent it is to be classed with the milder anodynes. It frequently relieves intestinal pain when not due to peritonitis. In the colics of children it is of great service. Those who have employed it in the painful conditions accompanying acute prostatic disease speak very highly of it. In neurasthenia and hysteria it has a calmative influence, lessening the irritability and often promoting sleep. It frequently relieves the occipital headache and pains that so often accompany these ailments. The menstrual pain and backache of these patients, when not associated with pathologic lesions, are generally relieved if it be given at frequent intervals. The French genitourinary surgeons extol to the skies its virtues as a preventive of seminal emissions and of chordee.

The use of a hop poultice as an anodyne is in general use among the laity, but I can not convince myself that it has any especial value. When given internally lupulin is best administered in capsule form. For children the powder may be mixed with sugar and is then readily taken. Aromatic spirits of ammonia forms a good vehicle when it must be given in liquid form. The officinal tincture is bitter and is not a satisfactory way of administering it. The dose varies from 10 to 60 gr., repeated every half-hour. In case of gastric intolerance suppositories may be employed. As a pain-relieving agent its field of usefulness falls in the same class as that of viburnum prunifolium and valerian. It is somewhat more active than either, and we avoid the disagreeable smell and taste of these two agents. In children it can generally be substituted for opium. In old people with advanced renal disease it can often supplant an opiate when a narcotic is necessary.

In this era of a high-tension civilization the practitioner is not infrequently brought face to face with the treatment of pains and aches and insomnias which are not in themselves severe and do not have any orgauic disease as a cause. These patients are neurotic and high strung and are not suffering enough to demand the use of an opiate, and yet in these very people habits are easily formed. The coal tar series of the past decade has seemed the surest way out of such a dilemma. The laity know it as well as we do and act accordingly. Now that the formation of a coal-tar product is generally-recognized, it will probably be a major problem in the next generation. Any one who has seen the cyanosis, palpitation, etc., following the use of any of these agents in some people must conclude that they are not in any case without some harm, however slight it may be. In many of the cases described above in which we are tempted to use the coal-tar series, we may substitute lupulin and we may go home and sleep soundly, confident that the patient will have been, in a measure, relieved and that he will not be found dead in bed the next morning as has not infrequently happened when an acetanilid powder has been taken to soothe his nervous complaints.

DISCUSSION.

Dr. W. C. Abbott, Chicago, said that Dr. Reilly's recommendation which gives us something tangible out of our own hop fields to substitute for the graft on the American people that comes from the dye works of Europe ought to be grasped by every one in this country. Dr. Abbott says that he has given many doses of acetanilid, and every time he knew he had done wrong in giving it; but sometimes one judges of a remedy as to whether it will do for that time and occasion more good than harm. Dr. Abbott desires to be regarded as being strongly opposed, not only on principle, but from a pure scientific therapeutic standpoint, to the use of any and all coal-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

tar derivatives when it is possible, as it usually is possible, to use instead thereof something that will do a great deal more good and that can not possibly do the amount of harm. Lupulin is something in which he has been interested for a long time, and he is glad to have his ideas on the subject so ably supplemented and so far overreached by the studies of Dr. Reilly. Lupulin, he said, is certainly a good thing, and all coal-tar derivatives are bad things.

Dr. John W. Foss, Phoenix, Ariz., said that he has used lupulin in a large number of cases with excellent results. He has found it a harmless yet effective drug in cases of insomnia and nervousness.

Dr. W. F. Waugh, Chicago, said that he has had a little experience with lupulin, having given about one-half ton of it as a medicine while resident physician of an insane hospital. Lupulin was the basis of the composing medicines at night, but the doses recommended by Dr. Reilly were not found sufficient. A little whisky glass was filled with lupulin, an ounce or two ounces, enough tincture of conium was poured in to wet it and then 60 grains of potassium bromid were added. That was the average dose. It is not an easy thing to find a hypnotic that the insane can take night after night, for weeks and months, and which will still produce comparative quiet; yet that combination answered every requirement. That occurred in 1871 and 1872. Dr. Waugh also mentioned the use of lupulin at that time in cases of delirium tremens—not as a hypnotic, because he does not believe in this method; but it quieted the patient's nerves, and at the same time produced added benefit by settling the stomach and restoring some amount of circulatory equilibrium. It was found to be safe and was made a standby in the treatment of that affection. While Dr. Waugh believes that there are better remedies now for delirium tremens yet, he says, there is no denying the value of this drug in these cases.

Dr. H. Stern, New York, stated that he and Dr. Reilly have made these experiments together and that he has worked on the question for the last four years. Dr. Abbott, he said, is mistaken if he thinks lupulin grows in the fields of this country. Dr. Stern said that he had experimented with almost every variety of lupulin on the market, and he is sorry to say that no first-class hops or lupulin are produced in this country. He has a friend in New York who is a "beer doctor." Beer has its diseases, and this man is a scientific expert on these diseases. In his laboratory Dr. Stern made observations four years ago. The only lupulin of therapeutic usefulness comes from Bohemia. That lupulin comes from a little place called Saaz, which is the center of the hop industry in Bohemia This lupulin Dr. Stern has compared with that in the market, especially with Merck's, which he said is inert. It can not be kept longer than seven or eight months. One must have fresh lupulin; otherwise it is useless. Dr. Stern stated that he obtained lupulin directly from Bohemia. Nobody in this country imports it. Some brewers use this lupulin in addition to hops, to give the special flavor to their beer, but very few, because of its cost. Dr. Stern called attention to the antiseptic value of lupulin. Whether this is due to the lupulin alone, or in a measure to the yeast, is hard to say at present. If to beer which is full of bacteria some of this lupulin be added, the bacteria are killed off in less than five minutes. In 1893 or 1894, at one of the German congresses, Professor Quincke said that it was very remarkable that in the epidemic of cholera in Hamburg every man who was permitted to take beer survived. He thought it was the yeast; but beer does not contain yeast. So if it was not the yeast that did the work, it must have been the lupulin. For gastric and intestinal diseases Dr. Stern has used lupulin during the last year and a half with the utmost benefit. The lupulin which he has now is almost inert, although he kept it as cool and hermetically sealed as possible.

Dr. C. S. N. Hallberg, Chicago, called attention to the fact that lupulin is an official drug and has been for a long time. There is no use, he said, of talking about some one's preparation of lupulin. There may be a superior quality of lupulin from Saaz because that is where the Anheuser Busch or Budweiser company get their hops. The same principle is in the lupulin as in the hops. If the Germans had only isolated the principles and sent it to this country then everybody would probably be using it. As it is, they have overlooked it. Dr. Hallberg said that there is no intestinal antiseptic among the 500 phenol or benzene derivatives that approaches that derived from lupulin with about 5 per cent. alcohol in the form of an amber liquid. He believes that it is the best intestinal antiseptic there is, because it adds, 5 per cent. natural alcohol to its antiseptic properties.

Dr. T. F. Reilly said in concluding the discussion that according to the *Index Medicus* nothing has been added to the literature on this subject since 1853.

THE BLOOD PLATES.

THEIR NUMERATION IN PHYSIOLOGY AND PATHOLOGY.*

GEORGE T. KEMP, M.D., Ph.D.

Professor of Physiology, University of Illinois.

WITH THE COLLABORATION OF HENRIETTA CALHOUN, A.M., AND CHESTER E. HARRIS, A.M.

CHAMPAIGN, ILL.

INTRODUCTION.

The blood plates have always had a special interest for me, since they were the subject of my thesis for the doctorate in 1886. At that time I suggested a method for their enumeration which involved the use of osmic acid as a fixative. This worked very well for the blood plates, but tended to clump the red corpuscles so that in making comparative counts the results were so unsatisfactory that I did not publish them. About six years ago I took up the work again, using formaldehyd in physiologic salt solution as a fixative, and found this method to be a success. In consulting the literature, up to that time, so many new and interesting problems were suggested that I have given as much time as I could spare to their investigation, and have also assigned such research for thesis work to graduate students in my department at the University of Illinois. Our work culminated in an expedition of six of us to Cripple Creek and Pike's Peak to study the effect of altitude on the blood.

I find the literature of this subject very much scattered; it has not been brought together in any English paper for fifteen years. There are errors which have evidently been copied by one author from another, and often work by inaccurate methods has been quoted by the side of work which is good, without any sign of discrimination. I have, therefore, undertaken the task of consulting the original papers whenever possible and of giving references, by page, to statements quoted.

I. METHODS.

The blood plates are small round or oval bodies, varying considerably in size, but on an average about one-third the diameter of the red corpuscles. Unless special means are employed to preserve them, they become sticky and clump together or adhere to any foreign substance immediately after the blood is drawn. They then undergo a peculiar disintegration which is closely connected with the process of the clotting of the blood. The rapidity with which they break down is profoundly affected by the roughness of the surface with which they come in contact and by the temperature. A surface of neutral oil or clean paraffin will preserve them for some minutes. At zero, centigrade, they are preserved. It is necessary to bear these facts in mind in order to appreciate the discussion which is to follow.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

For convenience of description and criticism, the methods which have been employed for counting the blood plates may be enumerated as follows:

A. Direct examination: Blood in thin layers undiluted.
B. Direct examination: Blood mixed with a fixative diluent.
C. Direct examination: Blood mixed with a non-fixative diluent.
D. Direct examination: Blood in dry films.
E. Pipette method (simple).
F. Pipette method with refrigerated pipette.
G. The Ratio-method. (Laker's method).
H. The Thoma-Zeiss counting chamber in blood plate numerations.
J. Special forms of counting chambers.
K. Devices which obviate the use of counting chambers.

A. Direct Examination: Blood in Thin Layers Undiluted.—This method was employed before definite numeration methods were suggested, and it has also been used, to some extent, since. It is untrustworthy in the highest degree. The blood plates stick to the glass where they first touch, and one may find few or many of them, according to the part of the preparation examined. Moreover, the plates are found clumped in masses, and greatly altered in form, so that a genuine numeration of them would be impossible. This may easily be demonstrated by taking a drop of blood on a cover-glass and laying it on a slide in the usual way. As soon as the cover-glass is in place get the blood in focus (low power) as quickly as possible. Next place a drop of 0.75 per cent. sodium chlorid solution on the slide so that it just touches the edge of the cover-glass, and to the opposite edge of the cover-glass apply a small piece of filter paper and allow it to remain in this position. The filter paper will draw the blood from under the cover-glass and the salt solution will rush in to take its place.

On observing the red corpuscles in the swirling currents thus set up, it will be observed that they bump against stationary islands which adhere to the glass. These islands increase in size, and, as the red corpuscles are washed away so as to make a comparatively clear field, the islands will be seen to be made up of agglutinated blood plates. The islands are thickest where the blood first touched the cover-glass. This makes a good class demonstration and will convince any one that the red corpuscles move freely while the blood plates stick to the glass and to each other. Try to count them —it will be impossible. For purposes of demonstration, the drop of salt solution may be followed by a second drop of the same solution, colored with Lugol's solution. This makes the plates very prominent and will also bring out fibrin threads if the blood has stood long enough to clot.

B. Direct Examination: Blood Mixed with a Fixative Diluent.—The term fixative is here used in its strict histologic sense, viz., one which will kill a cell and preserve it in an approximately natural form. A rapid fixative for the blood plates removes at once their power to change their form or to develop the adhesive properties referred to above, and allows them to float freely side by side with the red corpuscles. Everything else being equal, such fluids are to be preferred. Unfortunately, of the many fixatives employed in histology few can be used with blood owing to secondary effects, such as causing precipitates, decolorizing or distorting the corpuscles, etc. The only fixative fluids which we have found to be free from all these objections are those containing formaldehyd (best about 2 to 3 per cent.) in the presence of certain neutral salts. The various fluids employed by different observers for the numeration of blood plates will be discussed under fluids. With an unobjectionable fluid of this class, the ratio of the plates to the red corpuscles can be determined directly, and, the number of reds being known, the number of plates can be calculated. A simple examination would enable an experienced observer to say whether the plates were greatly increased or decreased, in comparison with the reds, without making an actual count for the ratio.

In employing this method, even for simple examinations, never let the blood touch the cover-glass until after it has mixed well with the fixing fluid. The following experiment will demonstrate the importance of this: Place on the slide a pool of several drops of fluid containing 2.5 per cent. formic aldehyd and 1 per cent sodium chlorid in water. From a puncture on the finger take on the center of a cover-glass a drop of blood the size of a small French pea. Place the cover-glass, blood side down, on the fluid on the slide and remove the excess of fluid with filter paper. Over the area where the drop first touched, the plates will be seen in large numbers adhering to the cover-glass; elsewhere they will float free, but sometimes in clumps. Now repeat the experiment by placing a large drop of the fluid over the puncture to receive the blood the instant it emerges. Take a small drop of blood and mix the blood with the fixative on the finger by a few gentle strokes with a clean needle. Place the mixed drop on a slide, lay on the cover-glass and examine. The plates will all float free and unclumped along with the red corpuscles.

These demonstrations may be made more striking by coloring the solution with methyl violet, which stains the plates. A convenient way to do this is to use an uncolored aldehyd mixture on the finger so as to judge the amount of blood taken, then blend the mixed blood and aldehyd salt solution with a drop of the colored solution placed on the slides. Cover and examine. The all-important point of the procedure is that no part of the blood drop shall touch the glass before it has mixed with the fixing fluid.

C. Direct Examination: Blood Mixed with a Non-fixative.—Non-fixative fluids are hard to discuss, as a whole. There is no general rule that will apply to them. The value of the results of observers who have used such fluids depends on the details of their method, as well as on the fluid used. One crucial point is: Does the fluid in question allow the plates to clump or to stick to the glass? If it does, it is untrustworthy to that extent. Another point is: How does it preserve the red corpuscles? Since the relative number of plates and red corpuscles is what we are after, it is obvious that each must be preserved—at least long enough to make a satisfactory examination. If the fluid or the method otherwise permits the red corpuscles to bud off small fragments, it introduces an additional source of error which is very serious, as these fragments of the red corpuscles may lose their hemoglobin and be mistaken for blood plates. We believe that the Arnold buds are artifacts which belong in this category.[1]

D. Direct Examination: Blood in Dry Films.—This method consists in attempting to judge whether the plates are increased or decreased by direct examination of dry preparations prepared in the ordinary way. As early as 1885 Schimmelbusch[2] tried to count the plates

1. Arnold: Virch. Arch., vol. cxlv, p. 1 et seq.; also vol. clv, pp. 171, 189 and 193.
2. Schimmelbusch: Virch. Arch. 1885, vol. ci, p. 229; also Eberth and Schimmelbusch; "Die Thrombose," etc., Stuttgart, 1888, pp. 33 and 34.

by this method and found it impracticable. Since then it has been unsparingly condemned by the majority[3] of those who have tried to use it. We are unhesitatingly with this majority.

E. Pipette Method (Simple).—This method consists in measuring the blood directly in some form of pipette, then mixing it with a known amount of diluting fluid, counting the number of blood plates in a given volume of the diluted blood and calculating their number per cubic millimeter just as is done when making similar counts of the red corpuscles. The Hayem-Malassez, Gowers, and Thoma-Zeiss instruments have all been used in such numerations. The chief objection to this method is the use of the measuring pipette for the blood. The adhesive properties which the blood plates develop when they touch foreign substances make them stick to the pipette. It is a significant fact that, as a rule, the counts made by this method are lower than when some method is employed which obviates this source of error. The objections to this method have been pointed out by nearly all the writers on the subject, and those who have used it have done so in default of something better, pointing out that, though the results are only approximately accurate, they are still of value. One variable factor in the error of this method is the temperature of the pipette. In a warm room the error would be greater than in a cold one. In spite of all this, we feel that there is a great deal of truth in the contention that comparative results obtained by the pipette method, while by no means accurate, need not be discarded altogether, though we would by no means advocate the method.

F. Pipette Method, with Refrigerated Pipette.—This method was devised by van Emden[4] to reduce to a minimum the adhesion of the blood plates to the pipette. The measuring pipette is placed in a dry short test-tube furnished with a perforated stopper, and the test-tube is placed in a cold bath.[5]. Further details are not given. He uses a diluting fluid, recommended by Prus, which decolorizes the red corpuscles so that they do not obstruct the view. This enables him to get a very large number of plates in the field for counting and consequently reduces the error. He has compared this method with the ratio method, which we recommend and describe below, and finds that each gives equally good results.

G. The Ratio Method (Laker's Method).—Recognizing the errors of the pipette method, mentioned above, Laker[6] and Kemp,[7] independently and simultaneously, proposed a new method for determining the number of blood plates by first getting their ratio to the red corpuscles. The number of the reds being obtained by one of the ordinary methods, the number of plates could be calculated by the simple rule of proportion. This is commonly referred to as Laker's method.

H. The Thoma-Zeiss Counting Chamber in Blood-Plate Numerations.—This is the method which has been chosen by the majority of late observers. The instrument is now in common use and is readily procurable almost anywhere. We have used it, for the most part, in our experiments. With a fluid which fixes the blood plates immediately, and has such a low specific gravity as to allow them to settle readily to the bottom of the chamber, we have found that it gives very satisfactory results; but other observers, working with different fluids, have found serious drawbacks which have led some of them to discard it.

The first objection to the Thoma-Zeiss counting chamber is that it is too deep, that often when it is desirable to employ an extra high power it can not be done. This is a valid objection, but it is not fatal to the method. In determining the ratio of the plates to the red corpuscles, the exact capacity of the space over the ruled field is of no consequence. Therefore, we have been in the habit of using, in such determinations, an ordinary cover-glass instead of the special one employed in counting the reds. By this simple substitution we can use a sufficiently high power to settle, in ninety-nine cases out of a hundred, whether or not a given body is a blood plate.

The second objection, that the plates do not settle to the bottom so as to be seen against the lines, deserves special consideration. Determann[8] cautions that the observer must not fail to focus up and down with the fine adjustment of the microscope, so as to search the fluid of the chamber from top to bottom. He says "the red corpuscles always sink very rapidly, while the plates may be seen in the upper layers of the liquid for some time later (*noch lange*)." This focusing up and down, away from the ruled bottom of the chamber, would be extremely inconvenient and, we fear, would introduce a serious error.

On examining the details of Determann's work we are convinced that the fluid he used and some of the details of the method he employed are together responsible for the difficulty. His directions are as follows: First stick the finger, then place over the puncture a drop of the diluting fluid. As soon as the first drop of blood appears and mixes with the diluting fluid, the mixed drop is taken quickly on the cover-glass and further mixed until the blood is evenly distributed through the diluting mixture. If too large a drop of blood is taken, it is further diluted on the cover-glass. He tried fourteen different diluting fluids and finally selected two, viz., 0.9 per cent. Nat'l solution colored with a little methyl-violet (practically Bizzozero's fluid), which is his favorite, and one of Wlassow's fluids (an aqueous solution of 1 per cent. sodium chlorid and 5 per cent. potassium bichromate), which he says is very good (sehr geignet). Now it so happens that, of the fourteen fluids he mentions, none combines the advantages of fixing the plates and of having a low specific gravity like the fluid we shall recommend. If the fluid has a high specific gravity the plates will settle more slowly or they may even float at the surface and not settle at all. This was found to be the case by Pratt[9] and by Helber,[10] as well as by Determann, as above referred to.

Still more serious objections may be made to the modified Bizzozero fluid which Determann used. This has a low specific gravity, but it is a very imperfect fixative. The blood plates are not wholly prevented, by its action, from sticking to glass, and, moreover, they swell (probably by the imbibition of water). Determann himself

3. Among the latest of these, see Preisich and Helm: Virch. Arch., 1901, vol. clxxviii, p. 50, for a review of theoretical and practical reasons against it.

4. van Emden: Fortsch. d. Med., 1898, vol. xvi, p. 215.

5. Die Zählpipette wird, von einem kurzen, mit einem durchbohrten Stöpsel versehenen Reagenzröhrchen umgeben, in eine Kältemischung gesteckt. In dieser Weise bleibt sie trocken, bekommt aber bald eine niedere Temperatur.

6. Laker: Sitzungsberichte d. Kais. Akad., Vienna, Part III, May, 1880, p. 32.

7. Kemp: Studies from the Biological Laboratory, Johns Hopkins Univ., May, 1886, vol. III, p. 308.

8. Determann: Deutsch. Archiv. f. klin. Med., 1898, vol. lxi, pp. 366-368.

9. Pratt: Archiv. f. exp. Path. u. Pharm., 1903, vol. xlix, p. 303; also Jour. of Med. Research, 1903, vol. x, p. 123.

10. Helber: Deutsch. Arch. f. klin. Med., 1904, vol. lxxxi, p. 318.

has noticed this swelling;[11] and Bizzozero[12] calls especial attention to their sticking to the glass. We have had a large experience in examining blood plates in Bizzozero's fluid and can corroborate these observations. We see how the swelling of the blood plates might make them float, though we have not given special attention to this point; but we have no doubt about them sticking to the glass, and when we read that the fresh drop of blood, just blended with the Bizzozero fluid, is mixed more perfectly on the cover-glass, and if too much blood is taken more diluting fluid must be added, we see how this might introduce an error in the same line as the use of the pipette method, or it might group the plates just where they were to be counted and make the count too high. We are suspicious of this when we see Determann giving records in which the blood plates were four times as numerous as the red corpuscles.[13]

It is interesting to note in this connection that when Bizzozero counts the blood plates he discards his older fluid and substitutes one which contains osmic acid,[14] thus making his fluid a true fixative. Since the blood plates are lighter than the red corpuscles and settle to the bottom of the chamber more slowly, we can not determine the ratio of the plates to the reds before both have settled and can be seen lying in the squares. With the Kemp and Calhoun fluid this requires from two to three minutes, but it has been our custom to wait five minutes so as to be on the safe side.

The time required for the plates to settle was determined by the following simple method: After the drop of the diluted blood is placed in the counting chamber and the cover-glass is in position, focus on the bottom, using a 1/6-inch objective. Keep the same field under observation and note the position, with regard to the lines, of the blood plates which have settled immediately. Within the first minute it will not be unusual to see a new blood plate descend and rest on the bottom. By the end of the third minute they are all down, as may be determined by making successive counts of the ratio in the same field.

J. Special Forms of Counting Chambers.—For counting the plates Hayem[15] employs a counting chamber made especially shallow (0.1 mm.), with a thin flat cover-glass. This admits the use of a higher magnification than is customary in counting the red corpuscles (Nachet objective 6 instead of 5). The base of the chamber is ruled so that a cubic unit is a parallelopipedon having a base of one-fifth of a millimeter and a height of one-tenth of a millimeter. While this chamber was made especially shallow, it was so only in comparison with the older French form. It has the same depth as the Thoma-Zeiss counting-cell, and, therefore, may be considered as having been treated with that instrument in the discussion above. More recently Helber[16] has employed a counting chamber which he has had made specially for blood-plate work. It has a depth of 0.02 mm., otherwise it is exactly like the Thoma-Zeiss instrument. With a thin cover-glass this enables one to use a sufficiently high power to determine, beyond doubt, whether a given body under observation is a blood plate. Pratt had tried the same thing with a chamber intermediate in depth between the Thoma-Zeiss cell and the one later recommended by Helber. He was dissatisfied with the results, however, and discarded the counting chamber for a method which will be described later.

K. Devices which Obviate the Use of Counting Chambers.—The first observers to employ the ratio method for actual numeration without a counting chamber were Bizzozero[14] and Salvioli,[16] each of whom used an ocular with a scale ruled in squares, and determined the ratio of the plates to the red corpuscles, in the areas thus marked out, in ordinary preparations of blood diluted with a fixative.

Following Bizzozero and Salvioli, we made a number of experiments, using scales ruled on glass to fit in the ocular. These were prepared for us in the physical laboratory of the University of Illinois by Mr. E. F. Bracken, a graduate student in physics, through the courtesy of Professor F. A. Sager. Several scales were ruled to suit different magnifications, and the distance between the lines was calculated so that the squares represented known areas in the field of the microscope. We compared the results of this method with those obtained from the same blood, using the Thoma-Zeiss instrument, and they were found to be the same. We can, therefore, recommend this method for accuracy.

In the earlier experiments of Pratt[9] and in those of Helber, these observers tried to use the Thoma-Zeiss chamber with a 10 per cent. solution of sodium metaphosphate, and, as Pratt says, the experiments "were wrecked on technical difficulties." These, we infer from the context, were chiefly the fact that the plates floated at the top of the liquid and could not be brought in focus with the lines at the bottom of the chamber, nor could a very high power be employed. Helber got around these difficulties by using the shallow chamber described above; Pratt solved the problem by using an Ehrlich ocular. He has more recently replaced the Ehrlich ocular by a disk of cardboard, with a square hole cut in it, which is laid in the eyepiece.

We gather from a paper by Richardson[17] that this was also the arrangement used by him. This simple device does away with the necessity of any special apparatus for obtaining the ratio between the plates and the red corpuscles. The slide is moved about and the ratio is determined in a number of the places taken at random. A lens of any power can be used. We have tried the Ehrlich ocular and found that it worked, so that the same may be said for the cardboard substitute.

After our experience with the ruled squares in the eyepiece, the Ehrlich ocular, and the Thoma-Zeiss chamber, we must say we prefer the latter rather as a matter of convenience than because the others are not accurate. It was purely an accident that we began with a fixative fluid of low specific gravity, and thus avoided the rock on which the first experiments of Pratt and of Helber were wrecked. The method yielded strikingly constant results and we became used to it. We adopted the routine practice of taking a bird's-eye view of the field to see if the corpuscles were evenly distributed, just as we do before counting the red corpuscles. When the lines move with the field, it makes orientation easier, and one knows at a glance that he is not examining the same part of the specimen twice. Then, again, if swift currents are set up and continue in one direction, we can not escape the suspicion that the plates, being smaller, would be swept along more rapidly than the red cor-

11. Determann: "Die Plättchen quellen oder sich sonstig verändern."

12. Bizzozero: Virch. Arch., 1882, vol. xc, p. 278.

13. Determann: Deutsch. Arch. f. klin. Med., 1898, vol. lxi, p. 382, Case 45. Compare also pp. 367-368.

14. Bizzozero: Arch. ital. de Biol., 1891, vol. xvi, p. 388. Also Pizzini: Riforma medica, 1894, vol. ii, p. 376.

15. Hayem: Arch. de Physiol., 1878, vol. v, p. 721; also, "Du Sang," Paris, 1889, p. 38.

16. Salvioli: Virch. Arch., 1891, vol. cxxv, p. 378.

17. Richardson: Jour. of Med. Research, 1904, vol. xiii, p. 101.

puscles, and thus destroy the true ratio in any given part of the field. It was more difficult to avoid this with an ordinary slide than with the Thoma-Zeiss chamber, and it required more care to get the red corpuscles evenly distributed. For this reason we rejected preparations where the distribution was very unequal.

The Helber chamber posssesses all the advantages claimed here for the Thoma-Zeiss, and we are inclined to believe that it is the more satisfactory, though we have not tried it. Certainly instances have arisen where we have wished to swing on a higher power to examine a given blood plate and were unable to do so owing to the depth of the chamber. In counting the plates in pathologic blood, especially where the red corpuscles show signs of disintegration, or where precipitates exist in the plasma, we can easily conceive of instances in which the Thoma-Zeiss cell should not be used, and where the counting devices of Helber, of Pratt, or of Bizzozero and of Salvioli could be employed to advantage.[18]

II. FLUIDS.

The fluids used in numerating the blood plates have, in nearly every instance, become associated with the name of the observer who proposed them. So that they will be found below, for the most part, under the authors' names, in alphabetical order.

Acid, Osmic.—Osmic acid is an immediate fixative, and is recommended as an ingredient of a number of numeration fluids, especially by observers of the Italian school.[19] We have tried osmic acid in a large number of combinations, and none has been satisfactory. It preserves the blood plates, but it has a tendency to clump or to distort the red corpuscles, and in some combinations it decolorizes them. Several observers have tried osmic acid, but reject it for some more favored fluid without stating wherein the osmic acid was objectionable. Marchner[20] has been more specific, and we find that his objections are the same as ours. With fluids containing osmic acid, the results are better when neutral salts are present than when the acid is used in simple aqueous solution.

Afanassiew[21] took the suggestion, for a preservative fluid for the blood plates, from the classical researches of Schmidt-Mühlheim, Fano, and Bizzozero on the action of peptone in preventing clotting. His directions for preparing the fluid he used are as follows: In a 0.6 per cent. sodium chlorid solution, dissolve 0.6 per cent. of dry peptone, and add methyl violet about 1 part to 10,000 or even 1 part to 20,000. Boil, filter and preserve in sterilized flasks plugged with cotton. Fermentation may also be prevented by adding small amounts of methyl alcohol[22] or phenyl alcohol, or corrosive sublimate, or carbolic acid. He prefers this solution to others which he tried, because it preserves the red corpuscles and the plates and mixes well with anilin stains for coloring the latter and the leucocytes. We have not tried this fluid, but Fusari[23] finds that while it preserves the plates it decolorizes a large number of the red corpuscles, and Brodie and Russell object to it on the ground that it does not entirely prevent the plates from adhering to the glass. It can not be classed among the fixative fluids.

Aldehyd Formic.—Formic aldehyd, as a fixative in diluting solutions for numerating the blood plates, was first used by Kemp and Calhoun.[24] We have extended these earlier observations of two of our number, and are convinced that formic aldehyd, combined with neutral salts, is a thoroughly efficient reagent for the purposes for which we employ it. Our fluid is conveniently made by the following formula:

Formalin, 40 per cent. aqueous solution of H.COH.	10 c.c.
Sodium chlorid, 1 per cent. aqueous solution......	150 c.c.

(Color with methyl green or methyl violet if desired.)

This gives a 2.5 per cent. solution of formaldehyd. When the aldehyd solution was used without the addition of salt, we found that the red corpuscles were decolorized in a short time. The use of salt prevents this decolorizing effect.

About equally good results are obtained when the sodium chlorid is present in anywhere from 0.75 per cent. to 3 per cent. Above 3 per cent. the reds become crenated, and below 0.75 per cent. they may lose their hemoglobin. The percentage of formaldehyd may also be varied within wide limits, but strong solutions are undesirable as they clump the red corpuscles and form precipitates.

In the course of our work we found one specimen of our solution which decolorized the red corpuscles. We suspected this decolorization to be due to acid formed by the oxidation of the aldehyd. On testing the fluid with litmus it was found to be slightly acid. This led us to make some experiments on solutions containing varying amounts of formic acid. If to the 2.5 per cent. formaldehyd containing salt, we add enough formic acid to make a 1 per cent. solution, the red corpuscles are clumped and decolorized. The action on the leucocytes and plates was similar to that of 1 per cent. acetic acid. The formaldehyd mixture with enough acid to make a 0.1 per cent. solution decolorized the red corpuscles almost immediately. With a 0.01 per cent. solution the reds were not clumped, although they were slightly swollen and no longer bi-concave. They retained their color six hours. We found that salt was always necessary to preserve the hemoglobin in the red corpuscles. The results of a more extended series of observations are given in the following table:

Per cent. of formaldehyd.	Per cent. of formic acid.	Per cent of salt.	Time of decolorization.
2.5	0.1	None.	Immediately
2.5	0.075	None.	Immediately.
2.5	0.05	None.	Immediately.
2.5	0.025	None.	Immediately
2.5	0.001	None.	Immediately.
2.5	0.1	0.75	Immediately.
2.5	0.075	0.75	Immediately.
2.5	0.075	1.50	15 minutes.
2.5	0.05	0.75	2 minutes.
2.5	0.025	0.75	No change in 1 hour.
2.5	0.001	0.75	Not decolorized.

The proportion of blood to the fluid does not have any effect within wide limits; if the amount of blood be large and the amount of aldehyd small, precipitates, probably of albumin, are formed. The dilution should be so regulated that the field is not so crowded with red corpuscles as to mask any of the plates. The aldehyd solution will preserve the blood plates indefinitely. The figures given for our solutions refer to absolute percentages of formic aldehyd and of formic acid. These experiments show conclusively that small amounts of formic acid (0.025 per cent.) do not decolorize the red cor-

18. Additional literature on this section by Rahl will be found in Wien. Klin. Wochft., 1896, vol. ix, pp. 1061-1062.

19. Bizzozero, Fusari, Petrone, Pizzini and Salvioli. The fluid of Pro... also contains osmic acid and deserves special consideration.

20. Marchner: Prag. med. Wochft., 1895, p. 355.

21. Afanassiew: Deutsch. Arch. f. k. Med., 1884, vol. xxxv, p. 226. The English equivalent for this Russian observer's name is given as "Afanasyev" in the Index Medicus, and as "Afanasiev" in Minerva. As his work is almost universally referred to under the German spelling "Afanassiew" we retain that spelling here.

22. In the original this word is "methylen alcohol."

23. Fusari: Arch. per le scienze mediche, 1886, vol. x, p. 212.

24. Kemp and Calhoun: Proceedings of the Amer. Physiol. Soc. Am. Jour. of Physiol., 1901, vol. v, p. iv.

puscles, while higher percentages would introduce an error. They also show that higher percentages of salt retard the decolorization. In five years' experience we have used formalin from a number of different firms and have found only one specimen which contained enough acid to compromise the efficiency of the counting fluid when diluted with fifteen times its volume of water, as called for by the formula. We shook up this specimen of formalin with lead carbonate and allowed it to settle. The bottle stood for a year in the laboratory, and during this time we decanted several lots of formalin for making specimens of counting fluid, and compared these with a similar fluid made from other formalin. We found that the acidity was neutralized and that the small amount of lead salts which went into solution had no appreciable effect. We feel, therefore, that we can recommend this method for treating suspicious specimens of formalin and for keeping a stock of neutral formalin on hand.

Sodium chlorid is not the only salt which may be used in connection with formaldehyd to preserve both the red corpuscles and the blood plates. Marcano's[25] fluid for counting the red corpuscles is Malassez's classic solution of sodium sulphate (specific gravity 1020), combined with formaldehyd in the proportion:

Na_2SO_4 solution : Formol : : 90 : 10.

Marcano recommends this solution for the red corpuscles without mentioning the blood plates. We have tried it, and find that it is an excellent fixative for both of these elements. Marcano has also called attention to the fact that formaldehyd without salt will not do; Brodie and Russell[26] condemn aldehyd fluids in general, but they make no mention of having used salts with the aldehyd, so we suppose they were omitted.

After searching all the literature at our command and trying nearly all the fluids which have been recommended, we have found none which combines all the desirable points possessed by the solution which we use. We may enumerate these points as follows:

a. Rapid fixation of both blood plates and red corpuscles. The plates do not clump or stick. The reds do not become decolorized or give off buds.

b. The red corpuscles are not clumped, but are distributed perfectly freely through the liquid.

c. There is no precipitate formed to obscure the field or to be confused with the plates.

d. The fluid mixes readily with a large number of anilin dyes. Kemp and Calhoun combined methyl green with the fluid in the routine work. By using the dyes the plates may be stained and rendered more prominent. Certain histologic points may also be studied at the same time that the plates are counted.[27]

e. The fluid has a low specific gravity; hence the plates will settle more readily than in a more concentrated solution. It can be used with any counting device mentioned in Section 1, including the Thoma-Zeiss hemocytometer.

f. Neither bacteria nor molds will grow in the fluid. To all intents and purposes it will keep indefinitely. We have never had any of the fluid go bad, and we have tested specimens which have stood for several months. In making this statement we are not unmindful of the chemical properties of aldehyds: the possibility that they may polymerize or be oxidized to acid. If a specimen becomes sufficiently acid to decolorize the red corpuscles, it should be thrown out and a new solution made.

g. It is cheap and easily prepared. The ingredients are to be found in every drug store.

(To be continued.)

25. Marcano: Arch. de méd. exp. 1889, vol. xi, pp. 436-438.

26. Brodie and Russell: Jour of Physiol., 1897, vol. xxi, pp. 391 to 395.

27. The use of the methyl green was discontinued because with increased experience we felt we could see the plates well enough without it, and the clear fluid enables one to observe better the mixing of the blood with the fixative which is placed over the puncture. For beginners with the method, we might still recommend the use of a stain; and would suggest methyl violet for the purpose, as a weaker solution of this dye will stain the plates effectively.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XV.

CIRCULATORY STIMULANTS.

The subject of circulatory changes is entirely too extensive for anything like a comprehensive treatment in the limited space that has been allotted to this series of articles. We shall endeavor, however, to discuss some of the indications for influencing these changes and try to indicate how they may be brought about.

The term "heart tonic" has been so loosely employed that it is better to avoid it altogether, or, to use it only with reference to those drugs which, acting directly on the heart, improve the muscular tone.

The heart is but one and, in some respects, even a minor factor in the question of blood pressure, on which the state of the circulation largely depends. Hence, while a "heart tonic" implies an agent which improves the action of the myocardium, the actual changes in the circulation depend not alone on the amount of work done by the central organ, but on the combination of that and the constriction or dilatation of the blood vessels.

Since the relative amounts of blood existing in the veins and arteries, and the amount which passes through a given area or organ in a given time are dependent on several more or less closely related factors, we may direct our efforts toward influencing one or more of these factors when we wish to increase or to diminish the blood supply of an organ, or when we wish to hasten the transfer of blood from veins to arteries.

An increase in the rate of the heart or strength of the beat, without a compensating change, either in the heart itself or in the blood vessels, will, of course, increase the general circulation, and conversely, a diminished action would lessen the circulation, but so delicately is the complex circulatory mechanism adjusted that such a simple change probably never occurs alone in the intact body, though it may at times predominate over other accompanying changes.

The simplest means of increasing the blood pressure consists in increasing the strength of the individual beats, whereby the heart is more completely and more forcibly emptied, and securing just enough slowing to enable the heart to dilate more fully and to become filled with a larger volume of blood. These two actions insure a larger volume of blood being thrown into the aorta in a given length of time than occurred under previous conditions. An increased volume of blood with increased force, must, of course, insure an increased circulation in those areas in which there is no great change in the caliber of the smaller vessels.

A high blood pressure on the other hand may be most simply reduced by slowing the heart without increasing its strength, or by acting on the vessels peripherally or through the vasomotor centers, causing dilation.

The accumulation of an undue amount of blood in the veins is relieved by increasing the efficiency of the heart as mentioned for raising the blood pressure—by slowing and strengthening its beat—for, as we have seen, this improves the drainage from the veins by lengthening the diastole, while the strengthening throws a larger volume of blood into the arteries.

We may arrange the agents affecting circulation into two groups as follows: Those mainly affecting the heart, directly or indirectly; those mainly affecting the vessels, directly or indirectly.

The most important group of circulatory stimulants consists of digitalis and a number of similarly acting substances. While, as is well known, barium chlorid has to some extent a similar action to digitalis, nearly all the other members of this group that are of therapeutic importance are somewhat allied chemically; for the most part the active principles of these drugs are glucosids or resins. The exact chemistry of the drugs of this class is still obscure, despite numerous investigations, and it demands but little consideration here; their pharmacologic action, however, serves to explain their therapeutic indications, and may aid in choosing the one best suited to a given condition.

The circulatory conditions demanding stimulation are mainly those in which undue relaxation occurs, and in which an imperfectly acting heart, including such conditions as valvular insufficiency and stenosis, permits the blood to accumulate in the veins. Any increase in the work of the heart must tend to relieve these conditions, particularly if there is at the same time just sufficient slowing to secure complete distention of the heart with blood during diastole.

An increase in the strength of the contraction more completely squeezes the venous blood out of the heart muscle, which is then supplied with a larger proportion of arterial blood. The increased force of the pulse wave must first be felt more strongly in the coronary artery than elsewhere, since there is less inertia to be overcome in the much shorter column of blood between the aortic valve and the opening into the coronary artery. The longer diastole then permits a more perfect supply to the capillaries in the heart, thus improving the nutrition of the heart to an even greater degree than would correspond to the extra work thrown on the ventricles by their being compelled to contract against an increased arterial pressure.

As we have just said, the slowing of the heart should be just sufficient to enable the heart to become fully distended, for a greatly slowed heart would suffer in lessened nutrition, because, other things being equal, the rate of flow through the coronary circulation varies with the number of the pulsations in a given space of time.

This improved nutrition of the myocardium is the first essential for a sustained increase in the force of the beats, either from a more energetic action of the unaltered heart or after hypertrophy; because however much a muscle might be stimulated to unusual activity, exhaustion and paralysis must follow unless nutrition keeps pace with the work performed. Langendorff has shown experimentally that the energy of the heart is enormously influenced by the available blood supply. A drug might affect one or more phases of the heart beat, or the local and central action may be in part antagonistic and the effect on the blood pressure in the general circulation will in the latter case be dependent on the kinds of influence and the degree to which each is excited.

Slight slowing with increased strength of contraction may improve the nutrition, and it will be readily understood why it is difficult to secure equally perfect nutrition of the heart when it is made to beat more rapidly, since the only factor here which makes for an improved coronary circulation is the more frequent squeezing out of venous blood by the contractions while all other conditions are unfavorable, a greater number of contractions, each throwing out less blood and meaning more energy expended for a given amount of work performed —a more frequent overcoming of the inertia of the blood in the arteries—so that a very rapid heart soon exhausts itself. For these reasons we do not often seek to raise blood pressure or to improve the general circulation by increasing the rate of the heart unless it is extremely slow.

Shock and collapse are conditions that are due to depression of the respiratory, cardiac and vasomotor centers. The depression of the vasomotor center permits the vessels to dilate and the blood gravitates to the vessels of the splanchnic area, which are capable of holding a very large amount. This dilatation is accompanied by a fall of pressure in the general circulation, less blood goes to the centers and to the coronary circulation, the heart beats more feebly and the respiration becomes weaker. This condition obviously calls for prompt stimulation of the circulation. It is apparent, however, that a stimulation of the heart alone would only result in increased work while its own nutrition would not be correspondingly improved because the pressure in the coronary circulation can not be greatly increased while the voluminous vessels of the splanchnic area offer cavernous spaces for the blood which is pumped from the heart.

Stimulation of the constrictor mechanism of the vessels is urgently demanded in collapse, and this is secured in the mildest cases by gravity determining the blood to the head when the head is placed lower than the body. The centers are toned up by the better blood supply, and this increased tone of the vasomotor center causes constriction of the splanchnic vessels, raises the blood pressure and improves the general circulation, which in turn further tones up the centers and the heart, which is also stimulated by the improved tone of the cardiac center. The respiration is improved at the same time owing to the improved tone of the respiratory center.

Dr. George Crile has devised a pneumatic suit whereby pressure may be applied to the surface of the limbs, thus forcing a large amount of blood into the body and head, and gravity (lowering the head) may be made to assist in driving it to the head—the essential fact being to supply the medulla oblongata with blood.

Physiologic Salt Solution.

Heat, mainly supplied by hot water bottles, should be used with any other measure in shock. The amount of fluid in the vessels may be considerably increased by injecting, under aseptic precautions, into a vein, or even under the skin, normal saline solution, or as it is better to term it, physiologic salt solution, made by dissolving 9 grams of sodium chlorid in enough water to make one liter (approximately 132 grains of sodium chlorid to 1 quart of water.). The solution should be boiled (to render it sterile) and then cooled to about 40° C. (104° F.). As noted above this solution may be used hypodermically or it may be injected directly into a vein. Another, and at times a very satisfactory, method of attaining the same result is to inject slowly one or two liters of this solution into the rectum, whence it is readily absorbed into the circulation.

Drugs which act on the vasomotor centers are indicated in collapse but the simple means just enumerated serve, as explained, to tone up the centers in mild cases by an improved blood supply, and they are of course preferable to mere stimulation by drugs. Then, too, in proportion to the emergency of the case is the difficulty of securing stimulation of the centers. In profound shock the stimulants of the vasomotor centers appear to have no lasting effect or to increase the trouble. In collapse of a mild character, however, a vasoconstrictor acting more powerfully on the vessels of the splanchnic area causes the general blood pressure to rise, more blood goes to the centers, and they are placed in better tone, exactly as is the case when gravity sends the blood to the head.

Hot alcoholic drinks are very commonly employed in collapse and shock; they probably act reflexly from the stomach.

Some clinicians maintain that morphin improves a weakened heart. As a depressed center is less susceptible to shock from reflex influences, morphin may lessen shock or depression due to pain and the center will then be able to exert a better influence on the heart. It has often been claimed that opium or morphin causes an increased supply of blood to the brain by dilating the vessels of that organ, and this may account for an increased circulation to the cardiac center and hence an improvement in the heart. The depression of the respiratory center by morphin is rather strong evidence against any stimulation of the cardiac center however. Morphin has no direct effect on the heart and its vasomotor effects are variable.

The pharmacologic action of digitalis and that of its available active principles have been more extensively studied than has been done in the case of any other member of the group. The isolated frog's heart, and later the mammalian, has been used to determine the action on that organ apart from the influence through the centers. The rate of the isolated mammalian heart is either increased or little affected by

digitalis or its principles, but Gottlieb and Magnus found that the strength of the individual contractions is increased by it and that more actual work is done by the isolated heart. In the intact mammal digitalis slows the heart by stimulation of the vagus center, and the strength of the beat is increased by the action on the myocardium. The vasomotor centers are stimulated at the same time. The direct results of these several actions have been detailed in the introductory paragraphs.

Digitoxin, the most active of the principles that have been isolated from digitalis, has essentially the same action on the circulatory system as the drug itself, but being insoluble in water it is slow in producing its effects. Albert Fraenkel has found that about sixty hours elapsed after a single effective dose was injected, hypodermically, into a cat before the typical action was induced.

Digitalin, or "Digitalinum verum," is somewhat more soluble in water and its action was elicited in twenty-four hours after a dose, corresponding in activity to that of digitoxin just mentioned, was injected into a cat, while strophanthin (obtained from strophanthus seeds), which is very soluble in water, produced its effects much more rapidly. The therapeutic action of these three substances is very similar, but Gottlieb and Magnus found that digitoxin is capable of restoring an irregularly beating heart to rhythmic pulsations to an astonishing degree: indeed, they were able to restore isolated and perfused hearts to strong regular beats after they had gone into delirium cordis.

Digitalis and the other members of this group have the great disadvantage of causing cumulative effects when used continuously for some time. Digitoxin produces these effects more readily than strophanthin and digitalin. Fraenkel was able to continue the administration of digitalin daily for ninety-two days at near the toxic dose without cumulative action. No habituation occurred in this period, however, thus disproving the claims of Heide, based on a much shorter period of experimentation, that such takes place.

Gastric irritation is the first evidence of a toxic action from a single toxic dose or from cumulative action, and the drug digitalis, or any of its congeners without exception, must be stopped for a time when cumulative effects are seen. When the heart is slowed by any member of the digitalis group the action is very persistent.

Fraenkel concludes that the duration of the action on the heart is proportioned to the stability of the union which takes place between the drug and the mechanism affected, but that the interval elapsing between the time of administration and the beginning of the action is proportional to the insolubility of the principle. Gottlieb and Magnus in experimenting on the isolated heart found that digitoxin caused a constriction of the coronary arteries, but that this did not occur after strophanthin.

The following official drugs belong to the digitalis group. As noted before, there are other drugs and chemicals that possess a somewhat similar action, but it must be evident to all that nothing is to be gained, and that much harm may result from giving heed to unwarranted and exaggerated claims of the nostrum maker who lands a preparation which ostensibly depends on some little known drug, such, for instance, as the several species of cactus.

By far the most interesting as well as the most important of the official drugs of the group now under consideration is:

Digitalis.—U. S.—This consists of the dried leaves of *Digitalis purpurea*, collected from the second year's growth at the commencement of flowering. This drug is official in all pharmacopeias and is generally accepted as being particularly susceptible to chemical change. It should be carefully preserved and should not be kept for more than one year.

Average dose: 0.05 gm. (1 grain).

While the chemistry of digitalis is far from being thoroughly understood, there are a number of proximate principles derived from digitalis that are now being marketed in a commercial way and have well-defined chemical as well as physiologic properties; several of them at least are being extensively used in this country as well as abroad. The most potent of these unofficial articles is:

Digitoxin: This, as has been noted before, is soluble in alcohol but is nearly insoluble in water. The older and in some respects better known French preparations, variously called digitalin, crystallisée, or French digitalin, closely resemble digitoxin in physical properties and also in physiologic activity.

Digitalin (Digitalinum verum, Kiliani): This is a white amorphous glucosid that is readily soluble in alcohol but only slightly soluble in water. While it is less toxic than digitoxin and may be given in much larger doses, it closely resembles that principle in its therapeutic action and uses.

Digitin (Merck): This is also readily soluble in alcohol and only slightly soluble in water. While still available it is now generally thought to be physiologically inactive as a circulatory stimulant.

Digitalein (Schmiedeberg): This is readily soluble in water and is probably a mixture of several proximate principles.

Digitalin "German": This occurs as a yellowish white, amorphous powder that is soluble in both water and alcohol. It is said to consist of a variable mixture of Digitalinum verum (Kiliani), digitalein and digitonin.

The official preparations of digitalis[1] are:

Extractum Digitalis.—U. S.—This is made from the fluidextract by evaporation.

Average dose: 0.01 gm. (10 mg. 1 5 grain).

Fluidextractum Digitalis.—U. S.—Fluidextract of digitalis is made with diluted alcohol.

Average dose: 0.05 c.c. (1 minim).

Infusum Digitalis.—U. S.—Infusion of digitalis contains 1.5 per cent. of digitalis, 10 per cent. of alcohol and 15 per cent. of cinnamon water.

Average dose: 8 c.c. (2 fluidrams).

Tinctura Digitalis.—U. S.—This now represents 10 per cent. of the crude drug in diluted alcohol in place of 15 per cent. as formerly official.

Average dose: 1 c.c. (15 minims).

Strophanthinum.—U. S.—This is a glucosid, or mixture of glucosids, obtained from strophanthus.

Average dose: 0.0003 gm. (0.3 mg. 1/200 grain).

Strophanthus.—U. S.—This consists of the ripe seeds of *Strophanthus Kombé*. It is preferably administered in the form of the official tincture.

Tinctura Strophanthi.—U. S.—This preparation now represents 10 per cent. of the drug in 65 per cent. alcohol, a case 0.16x double the strength of the tincture official in the U. S. ly exPharmacopeia, 1890. ly shows

Average dose 0.5 c.c. (8 minims). the spine

Apocynum.—U. S.—This is the dried rhizome of *A* recently *cannabinum*, or of other closely allied species of apoc bilhar- This drug is said to have been used by the American Ind in various ailments, and has long been in use as a household remedy. More recently it has again attracted attention by itse possible uses as a circulatory stimulant, though the practical results that so far have been attained do not appear to warrant its use in all cases. The only official preparation is:

Fluidextractum Apocyni.—U. S.—The fluidextract of apocynum is directed to be made with a mixture of 10 per cent. of glycerin, 60 per cent. of alcohol and 30 per cent. of water.

Average dose: 1 c.c. (15 minims).

Convallaria.—U. S.—This consists of the dried rhizome and roots of *Convallaria majalis*.

Average dose: 0.5 gm. (7½ grains).

Fluidextractum Convallariæ.—U. S.—This is made with a mixture of 65 parts of alcohol and 35 parts of water.

Average dose: 0.5 c.c. (8 minims).

1. From what we know of the chemistry of this particular drug, and from the action of the known isolated proximate principles, it would appear that in this connection it was particularly unfortunate that the committee on revision did not see their way clear to adhere more strictly to the proposed international standards for the formula of potent medicaments and direct, for the extraction of digitalis, the proposed 70 per cent. alcohol in place of the diluted alcohol of the U. S. Pharmacopeia. The stronger alcohol would have had the advantage of insuring a more ready and more complete solution of the active principles, of answering better as a preservative and of materially reducing the amount of inert, and, therefore, unnecessary, extractive now contained in the official tincture.

Therapeutic Actions of the Digitalis Group.

Digitalis has been referred to under the heading of diuretics (Chapter V), and for this purpose the infusion is usually to be preferred.

As a circulatory stimulant one of the drugs of the digitalis group is indicated when the heart is weak and rapid and the blood pressure low, conditions which arise under a variety of circumstances.

In cardiac dilatation with weak systole digitalis affords an ideal remedy as may be readily understood from its pharmacologic action. In pneumonia the right ventricle suffers primarily and digitalis is indicated, for while it affects the right ventricle less than the left, and the auricle least, this does not affect its usefulness in this condition, because the nutrition of the heart—both left and right—is supported by the improved coronary circulation, a most important factor, as we have seen, when extra work is thrown on the heart and the pulmonary circulation is not affected by the general vasoconstrictor action of the digitalis. In this connection the lengthened diastole, while it undoubtedly affords a better chance for the emptying of the pulmonary veins, is a factor of but minor importance. The use of digitalis in mitral insufficiency is familiar to all and the pharmacologic action readily explains its usefulness in this connection.

Digitalis and its congeners are said to be harmful in some cases of mitral stenosis, and they may fail to prove beneficial in insufficiency of the aortic valves. It is suggested that in this condition the blood may gravitate from the brain through the aortic valve during the lengthened diastole. The action of the drugs must be carefully observed in these conditions and they must be withdrawn if they appear to be doing harm.

Drugs of the digitalis series are contraindicated in cases of fatty degeneration of the heart, since a heart so weakened could scarcely support the additional burden imposed by the increased arterial tension, nor can hypertrophy be expected to occur in such a heart. They are also contraindicated in all conditions in which an increasing blood pressure would be dangerous, for instance, in aneurism.

With digitalis particularly, one must constantly watch for the first symptoms of cumulative action, usually gastric disturbance, and it, or other members of the same group, should be temporarily withdrawn when suggestive symptoms occur.

Powdered tincture of digitalis contains a larger proportion of the soluble digitoxin than does the infusion, in which the essential principle present is held in solution by means of digitonin, from a which being the most irritant of the known principles of digitalis, the infusion, containing digitalin principally, will be found preferred.

When the heart is weak and irregular digitoxin is probably the most efficient remedy we possess for restoring it to normal beat and action. An alcoholic solution of digitoxin may be used to advantage, provided it be well diluted with water when administered or taken. It is altogether too irritant for hypodermic injection, but if the claim made by Cloetta to the effect that he has succeeded in preparing a stable, water soluble form of digitoxin, which is not very irritant, is substantiated, a distinct advance will have been made in digitalis therapy.

The dose of digitoxin as given by the different authors is somewhat variable. Cushny states that 0.02 mg. (1/350 grain) of crystalline digitoxin may be given three times daily. Schmiedeberg recommends 1.5 mg. (1/330 grain) of the crystalline digitoxin three times daily. This is the dose used by Marx with good results in Naunyn's clinic. The physician will do well not to exceed this latter dose too greatly, bearing in mind that cumulative effects may, and sometimes do, develop quite suddenly, even with a dose which has been apparently harmless.

Digitoxin and digitalin, pure or in the leaf, are changed into substances with a convulsive action in the presence of moisture by bacteriologic action, hence old infusions should not be used nor should such leaves be employed which bear evidences of not having been properly dried or carefully preserved.

Digitoxin and digitalin may be kept dissolved in alcohol and diluted as required. The dose of digitalin, or digitalinum verum, is from 2 to 6 mg. (1/30 to 1/10 grain) three times daily.

Digitoxin may be prescribed as follows:

Digitoxini (cryst.)	gr. 1/12	(0.005
Alcoholis q. s. ad	ʒiii	100)

M. Ft. solutio. Sig.: One teaspoonful in a little water three times a day.

Digitalin can be prescribed in the same way but 0.05 is used in place of 0.005 gm. thus:

Digitalini veri	gr. i	(0.5
Alcoholis q. s. ad	ʒiii	100)

M. Ft. solutio. Sig.: One teaspoonful in water three times daily.

The tincture of digitalis, diluted with water, is given alone three times a day. Owing to the slow excretion it is not necessary to repeat the dose more frequently, and the drug should be stopped for two days about once a week to avoid cumulative effects, whether one of the active principles or a Galenic preparation of digitalis is being used.

Sollmann has suggested that strophanthin may deserve an even greater popularity than digitalis, and this suggestion has found support in more recent investigations. Strophanthin is now official, whereas the active principles of digitalis have not as yet been included in our Pharmacopeia.

Strophanthin does not cause vasoconstriction and it therefore deserves the preference over digitalis and its principles when increased blood pressure is to be avoided. Thus, when dilatation of the heart is due to high blood pressure from increased arterial tension, strophanthin may be used, or if digitalis is employed, a vasodilator such as nitroglycerin or one of the nitrites should be given at the same time.

Because of its more prompt effect on the heart, strophanthin may be employed to usher in the action when digitalis is to be employed. This promptness of action would also render it preferable to digitalis in shock or collapse were it not that the vasoconstrictor action is wanting.

Digitalis, or one of its principles, may be given several hours before an operation when there is reason to apprehend shock, so that its action may coincide with the time that shock occurs instead of waiting till that condition has actually developed before giving the slowly acting remedy.

Owing to the variable quality of the strophanthus seed and the tinctures that are now obtainable, it may be well for the physician to use the pure principle, strophanthin. This is easily obtainable and is readily soluble in water so that it may be prescribed in simple solution.

Strophanthin, it should be added, is also somewhat variable in quality and composition, but since it acts much more quickly than digitalis the dose may be cautiously increased if necessary. It undergoes decomposition, and it is therefore better to prescribe it in diluted alcohol: 0.01 gm. (1/5 grain) may be directed to be dissolved in 150 c.c. (5 fluidounces) of diluted alcohol and one teaspoonful of this solution, diluted with water, given three times a day.

Dr. H. C. Wood, Jr., recommends Canadian hemp as a satisfactory and reliable circulatory stimulant, but as his published work appears to have been done with a fluidextract of *Apocynum cannabinum* and as the Pharmacopeia itself recognizes closely allied species of apocynum, that may or may not have similar physiologic properties and therapeutic uses, it may be well to await the results of further investigations before trusting too implicitly in the possible results to be obtained from this drug.

Other official members of this group have little to recommend them in preference to the more prominent ones just described.

It might be added that the alkaloid of the suprarenal gland is not suited for long continued administration. It does not influence blood pressure when given by the stomach, and but slightly or not at all when injected just beneath the skin. When injected into the muscle there is a transient rise of blood pressure. Its local use has been discussed at greater length in connection with astringents (Chapter XIII).

Autosuggestion and the Mentally Defective.—Gordon of Philadelphia, in *American Medicine*, states that mentally defective children are particularly inclined to autosuggestion, and that the same symptom is observed in adults similarly affected.

Clinical Notes

BILHARZIA DISEASE.

REPORT OF TWO CASES OBSERVED AMONG PORTO RICANS IN SAN FRANCISCO.*

HERBERT GUNN, M.D.

Instructor of Clinical Medicine, Cooper Medical College; Associate Professor of Tropical Medicine, Postgraduate Department University of California (San Francisco Polyclinic.)

SAN FRANCISCO.

Bilharzia disease, called also endemic hematuria and bilharziosis, is caused by a trematode worm or fluke inhabiting principally the portal venous system, where it deposits its eggs, the escape of which into certain organs produces the various symptoms of the disease.

Bilharz discovered the parasite in 1851, and later the disease was named after him.

The disease is quite prevalent in some parts of the world, but until recently few cases had been observed outside of endemic areas. In many parts of Africa it is quite common.

In Egypt over 50 per cent. of the population harbors the parasite. Cases have been observed in Cyprus, Sicily and Mauritius.

British soldiers returning from South Africa have probably disseminated the disease to a considerable extent, as recently shown by Douglass[1] and Hardy.

In the United States, so far as I am able to find, only six cases have been reported.

The descriptions given of the findings in two of these cases are so at variance with the teachings of authorities on the subject that one is doubtful as to the correctness of the diagnoses.

The first case was reported by Booth of Sparta in 1882 and was supposed to have originated in Illinois, but the description given of it does not warrant its acceptance as one of bilharziosis. The second case, reported in 1895 by B. F. Curtis[2] of New York, occurred in an English soldier who had contracted the disease in Egypt. The third, reported in 1897 by Brooks[3] of New York, was an imported case. The fourth was reported by Walker[4] of Indiana in 1900. This patient was supposed to have contracted the disease in the same neighborhood in Illinois as the first patient reported by Booth. What was said of Case 1 undoubtedly holds true in this case and it is impossible to consider it as one of bilharziosis. The fifth case was reported by Pool,[5] New York, in 1903 and was an imported case. The sixth was reported in 1904 by O'Neil,[6] Boston, and was also an imported case. A seventh case, not as yet reported recently came under the care of Dr. M. E. Lando, U. S. Navy, at the Mare Island Navy Yard Hospital. The patient, I understand, had been in Africa. Thus, there have occurred in the United States, so far as we know, only five cases of this disease, in all of which the urinary tract was the seat of the lesions.

The two cases I here report represent, I believe, the first appearance in this country of the intestinal form of bilharzia disease.

Manson[7] reported a case of the intestinal variety of bilharziosis occurring in an Englishman who had resided for many years in the West Indies and who must have contracted the disease there. Porto Rico was apparently not among the islands visited by this patient. Manson concluded that at least one island of the West Indies group was infected with this disease. Recent observations have proved that Manson's conclusion is correct, as the disease has been observed in Porto Rico by Ashford and others. Both of my patients resided for a time in Hawaii, and, as they had passed through the United States on their way from Porto Rico there, the source of their infection must have been one of the three places. The United States can practically be eliminated as a possible source.

The disease has never been observed in the Hawaiian Islands and is not found in China or Japan, from which countries Hawaii draws largely for her coolie laborers.

Catto[8] described a new worm greatly resembling bilharzia hematobia occurring in the Chinese and Japanese, but the ova are quite distinctive and confusion of the two would be impossible. It is safe to assume, therefore, that the infection in my cases originated in Porto Rico.

The adult worm, which is never found in the excreta, inhabits principally the portal venous system and its branches. It has been found in the vena cava and elsewhere occasionally, but it has been suggested that, if diligently sought for, it might be more frequently encountered in other organs. Several hundred worms may be present, as many as three hundred having been found.

The following description of the parasite is taken largely from Manson's work on "Tropical Diseases":

> The bilharzia hematobia or the schistosomum hematobium is a distome and is bisexual. The male is white, cylindroid, and from 11 to 15 mm. long by 1 mm. broad. There is an oval and ventral sucker placed close together. The body of the worm is flat and infolded, forming a gynecophoric canal, in which the female is inclosed during copulation. The female is longer than the male, measuring about 20 mm., and it is dark r and filiform. The genital openings are situated just back of the ventral sucker. The ovum is oval and measures about 0.16x 0.06 mm. It presents a terminal or lateral spine, as the case may be, which difference has never been satisfactorily explained. When found in the urine, the ovum invariably shows the terminal spine, but when obtained in the feces the spine is placed laterally. An exception to this rule has been recently noted by Duncan,[9] who found in the urine of a case of bilharziosis eggs with lateral spines.
>
> Considerable variation in the size of the ova may be observed. The egg often contains a ciliated embryo which, in mature specimens, may escape through a longitudinal break in the shell and swim about, frequently changing its shape. This process is expedited by adding fresh water to the specimen.

The life history of the embryo is practically unknown. In all probability some fresh water animal acts as an intermediate host.

The mode of infection can not be understood until the extracorporeal life of the parasite is more fully demonstrated. Infection is supposed to occur through the drinking water, and, according to Loos, possibly directly through the skin. The symptoms are produced by the passage of the ova through the tissues, the sharp spinous process probably being an important factor. It appears that the vast majority of persons infected with bilharzia hematobia present no symptoms whatever. Vague pains in the back and slight malaise may be all that is complained of. In the small percentage of cases in which definite symptoms occur any degree of severity may be observed from an occasional slight burning on urination, with possibly a few drops of blood at the

* Read before the California Academy of Medicine.

1. Lancet, Oct. 10, 1903.
2. Trans. N. Y. Surg. Soc., Oct. 23, 1895.
3. Med. Rec., April 3, 1897.
4. The Journal A. M. A., Feb. 17, 1900.
5. Proc. N. Y. Path. Soc., April, 1903.
6. Boston Med. and Surg. Jour., vol. cli, 1904.
7. British Med. Jour., Dec. 20, 1902.
8. British Med. Jour., Jan. 7, 1905.
9. Trans. Clin. Soc., London, vol. xxxv., p. 187.

end of the act, to the most intense suffering with almost incessant micturition, causing excruciating pain and accompanied by quite profuse hemorrhage.

The symptoms of cystitis may remain constant, or, what is more probable, remissions and exacerbations may occur. The ureters may become involved in the inflammatory condition and occlusion be produced, either by inflammatory thickening of their walls or by stone formation, hydronephrosis or pyonephrosis resulting.

When the intestine, usually the rectum, is involved the symptoms when present are those of a dysentery of varying degrees of severity. Polypoid growths and excrescences are frequently observed.

Naturally the general health suffers greatly in severe infections, such patients being very susceptible to intercurrent diseases. The prostate or seminal vesicles may become involved, ova then being found in the semen. Urinary fistulæ frequently occur, often in the perineum. Vesical calculi sometimes result, also carcinoma. Ova have been found in the liver and lungs, where, as a rule, they produce no symptoms. They have also been observed in gall stones and recently in the thickened walls of a diseased appendix. Any degree of anemia may be present, depending on the amount of blood lost.

The blood[10] shows a decided eosinophilia, ranging between 2 and 40 per cent. and averaging about 16 per cent. The increase of eosinophiles occurs usually at the expense of the polynuclear neutrophile leucocytes. The pathologic findings naturally depend on the degree and duration of the infection. Groups of fine granular elevations are found in the mucosa of the bladder, also polypoid masses and adherent strings. Areas of ulceration may occur. Considerable thickening of the bladder walls may be found, the submucosa especially being involved.

The tissues are infiltrated with ova and on sections are dense. Areas of calcification and deposits of phosphates are formed. Sloughing of the thickened walls or of the polyps may occur or the smaller blood vessels may be completely occluded by masses of ova.

The diagnosis is made by finding in the feces or urine the characteristic ova. In cases in which but few ova are passed the last few drops of urine are most likely to show the greatest number.

The prognosis depends on the degree of infection and the effect on the general health. In regard to life it is good, death rarely resulting directly from the effects of this disease. Indirectly and from intercurrent diseases the prognosis may be grave. The parasite may die within the host, and yet results of the disease remain for years. Often the symptoms gradually disappear and the health becomes perfectly restored. Man may harbor the parasite for many years. One case is reported, in which no fresh infection could have occurred, where it was present for nine years.

The treatment is purely symptomatic, no drug having any influence on the parent worm in the portal system. Polypoid growths, calculi, etc., may be removed if necessary and the cystitis or dysentery treated. The symptoms can be relieved or ameliorated, but a cure can not be effected.

Manson, during the recent Lane lectures at Cooper Medical College, emphasized the importance of recognizing this disease from the urinary examination, thereby avoiding unnecessary and perhaps harmful manipulation and instrumentation.

10. Looss, Oct. 10, 1903.

Of the two cases that I have observed the second showed absolutely no symptoms attributable to the disease; the first showed but few symptoms that could be entirely ascribed to the infection with the distomum hematobium. Both patients were infected with *Uncinaria americana*, and appropriate treatment in that direction relieved practically all symptoms. Both harbored *Tricocephalus dispar*, and in Case 2 *Strongyloides intestinalis* was present.

Both patients lived in Porto Rico until four or five years ago, when they went to the Hawaiian Islands, where they worked on the sugar plantations. About a year ago they came to San Francisco.

CASE 1.—The patient, referred to me in February, 1905, for treatment of uncinariasis, was a male, aged 25, married.

History.—He enjoyed perfect health until two years ago, while in Honolulu, when there appeared abdominal pain, weakness, palpitation and frequent bloody stools, numbering from eight to twenty-eight a day. This condition has remained practically the same until the present time.

Examination.—There has been some loss of weight. The examination showed moderate anemia, great weakness, abdominal distention and tenderness. The stools contained small amounts of mucus and blood and showed ova of uncinaria, ova of the whipworm and very few ova of the *Distomum hematobium*.

Treatment.—After ridding the intestine of the uncinaria, practically all subjective symptoms disappeared.

Result.—There was a gain in weight of ten pounds and the patient felt perfectly well, except for occasional attacks of diarrhea. Occasionally a trace of blood is observed in the stools and a reaction for occult blood is at times present. Ova of bilharzia and of the whipworm are still present.

CASE 2.—There were no symptoms due to the bilharzia infection.

Eosinophilia was observed in both of these cases, but the presence of other parasites made it impossible to know what relation it had to the distomum hematobium.

In neither case was anything abnormal found on rectal examination.

Manson, while in San Francisco, examined the ova and pronounced them similar to those he had observed in his West Indian case. He is of the opinion that the lateral-spined ova are produced by a different species of worm from the one producing the terminal-spined eggs. Catto's discovery of a very similar parasite, but with a quite different egg, would lend color to this view. It seems impossible to account for the radical difference in the shape of the eggs and the constancy with which one apears in the urine and the other in the feces under any other hypothesis.

In my own cases I have observed that the embryo does not develop so rapidly, and when developed does not leave the shell and become free as in the terminal-pointed eggs. Specimens have been kept for weeks and months diluted with water, some in the incubator and others at room temperature, but in no case has a motile embryo been observed nor has a ruptured shell or free embryo been encountered giving evidence of motility.* Artificially the shell has been ruptured and the contained embryo expressed, but all have been motionless. This is quite a different course from that pursued by the terminal-spined variety, in which there is abundant evidence of considerable motility. This, I believe, is further evidence that a different species of worm produces the lateral-spined ova, at least that found in the Porto Rican.

* Since writing the above a few ruptured shells have been observed in a culture four months' old; the embryos could not be found.

New Instruments

NEW NASAL SNARE.

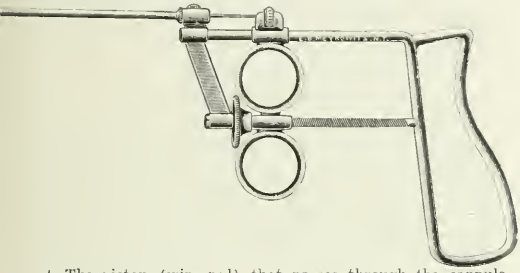
T. EDWARD DUFFEE, M.D.
WINCHENDON, MASS.

This is one of a series of instruments designed for nose and throat work, the special feature of each being the "pistol grip" handle, which allows the operator an unobstructed view of the field of operation and an easy natural position which does not cramp the hand or fingers. The nasal snare shown here is very light, being made from nickled tubular brass, is well reinforced, exceedingly strong and durable, and I believe embodies several features that will make it a valuable instrument.

1. The direct draft decreases resistance, with the index and middle fingers in the rings the operator gets a purchase which makes a much more powerful snare than any with which I am familiar.

2. The double carriage avoids binding when traction is made, at the same time reinforces the whole instrument so there is no springing even when considerable force is exerted.

3. When greater force is needed the large thumb screw (follower) is easily operated by the free hand.



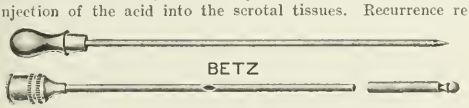
4. The piston (wire rod) that passes through the cannula or barrel is adjusted by another smaller follower set inside a slot on top of the carriage so it can be made any length desired by simply turning the thumb screw (follower), at the same time it is held securely in place, thus avoiding slipping or flying back or out. At the distal end of this rod there are two small eyes where either end of the wire after being cut the length desired may be threaded and bent so as to lay close to the rod, then drawn just inside the barrel (cannula). This method of threading is a feature that saves much trouble and is common to one or more snares now in use. After being used the piston can be very readily pushed back to be rethreaded if desired.

5. It has no nuts to work loose, no wires to protrude or slip and its general simplicity of construction will, I believe, appeal to the busy and practical operator.

A NEW INSTRUMENT FOR THE CURE OF HYDROCELE.

WILLIAM T. BELFIELD, M.D.
CHICAGO.

The cure of hydrocele by injection with carbolic acid has obvious advantages over the cutting operations. Its serious defects have been (1) uncertainty of a cure, (2) unintentional injection of the acid into the scrotal tissues. Recurrence results from failure to destroy the serous surface, and this in turn from incomplete removal of the albuminous hydrocele fluid, an adherent layer of which protects the serous surface from the caustic effect of the acid.



These defects are remedied by the following method with the instrument herewith pictured, whose distinctive feature is the window in the canula.

METHOD OF USE.

The distended scrotum is transfixed from above downward; after withdrawal of trocar and escape of fluid, the lower end of the canula is closed by the cap and the sac is distended with warm salt solution injected through the upper end. Removal of the cap allows the solution to escape; and this flushing of the sac is repeated until the escaping water shows only a trace of albumin by the nitric acid test. The cap being replaced, an ounce or more (according to capacity of sac) of carbolic acid—pure or 95 per cent.—is injected, the scrotum thoroughly manipulated to secure contact throughout, and the acid allowed to escape; residual acid is neutralized by injection of alcohol; after escape of latter the canula is withdrawn and punctures are sealed. Confinement to the house is unnecessary. The fluid which refills the sac in the next few days will be absorbed, but is better removed by a simple puncture.

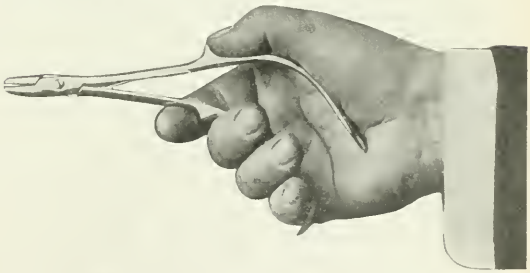
This method, employed in 17 cases without recurrence, seems to offer all of the good and none of the evil features of the various cutting operations for simple hydrocele.

A SIMPLE NEEDLE-HOLDER.

WILLIAM E. GROUND, M.D.
SUPERIOR, WIS.

The multiplicity of needle-holding devices attests the lack of an instrument that meets the requirements of the busy surgeon. Most of them, if so constructed that they will hold a needle securely, are complicated and clumsy, requiring an unnecessary loss of time in locking and unlocking. A great deal of ingenuity has been expended on the construction of a jaw that would hold any needle and with this have gone complicated-locking mechanisms, so that when in actual use the average needle-holder was about as unhandy as it was possible to make a useful article.

The different patterns of needles are as varied as are the needle-holders, so that the technic of wound suture is anything but satisfactory to the majority of operators.



It has been my object to simplify both needles and needle-holders and to limit the kind used to a few effective styles of needles, and to devise a needle-holder with which these may be handled with the utmost ease and facility.

A few years ago it occurred to me that if I had a needle-holder that would fit naturally in the hand, so that the hand could be used in an unconstrained position, I could handle any needle dexterously without recourse to catching devices, thus rendering the instrument simple, efficient and time-saving. I therefore turned my attention to arranging a handle to different styles of jaws already in use, and finally adopted the style shown in the illustration. I have used this instrument for several months and it has greatly facilitated the application of the needle and suture. The handle fits nicely in the hand, and with the hand in a natural position the shaft of the needle-holder is parallel with the forearm; in fact, is a direct continuation of it. With a full curved needle in use a mere rotation of the forearm sends the needle through the tissues, and when the hand is relaxed the holder flies open and is ready to grasp the needle as it emerges and to repeat the process with no loss of time caused by the locking and unlocking of catches.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, APRIL 7, 1906.

THE SERUM DISEASE.

The appearance of rashes after the injection of alien blood in human beings was noted as early as 1874, but it is only since the introduction of serotherapeutic measures that rashes and other local and general phenomena supervening on the injection of animal serum, most commonly equine, has attracted general notice. Pirquet and Schick, in Vienna, recently issued a monograph on this "Serum Disease," a brief discussion of some phases of which may not be without interest.

The symptoms traceable to the single injection of serum usually appear after an incubation period of from 8 to 12 days. Sometimes the general symptoms are preceded by a prodromal sensitiveness and slight redness of the skin above the point of injection associated with a moderate swelling of the regional lymph nodes. Fever is the most constant sign, commonly remittent but sometimes intermittent toward the end. A high fever usually accompanies morbilliform eruptions. The rashes vary not only in different individuals but even in the same person. The most common type is the urticarial. When generalized the eruptions tend to be symmetrical; their duration rarely exceeds three days. Swelling of the lymph nodes is one of the most important signs in both the diagnostic and the prognostic sense; it may become more or less generalized; its subsidence indicates the end of the disease. Articular involvement is less frequent; the joints most commonly involved are the metacarpophalangeal, the wrist and the knee. The salicylates have no effect on the joint symptoms. Edema is constant, usually in the same location as the edema of renal origin, and sometimes succeeded by a slight albuminuria.

In those receiving more than one injection of serum the symptoms may appear almost at once or in four or five days after the last injection. According to Pirquet and Schick the "immediate reaction" is the rule when the patient receives a large dose of serum for the first time, followed by a second injection in from three to eight weeks, while the "precocious reaction" occurs commonly when there is a longer interval between the two injections.

Years ago (1895) Heubner and Bókay first showed that the specific antibodies in serum play no part in producing the symptoms referred to in the foregoing. Recently Hamburger and Moro traced the eruptions to the union of the precipitins formed in the injected body with precipitable substances still remaining as residues, so to speak, of the foreign (horse) serum, the precipitates so formed causing mechanical obstructions to the circulation in the skin and possibly elsewhere. There is no constant relation, however, between the existence of precipitins and the symptoms of serum disease. Thus the precipitins usually pass out of the blood in from five to nine weeks after the first injection of the serum, while the immediate reaction referred to may appear even after twice as many months. Furthermore, eruptions and other symptoms may occur after one injection in individuals whose sera contain no precipitins, and, reversely, symptoms may fail to develop in patients whose sera contain precipitins in abundance. Hence, we are without any satisfactory explanation of the genesis of the serum disease. It remains to be seen whether the concentration of diphtheria antitoxin by means of Gibson's method of precipitation will remove fully the substances that give rise to the reactions in the injected organism comprised under the term serum disease.

HARMONY VERSUS STRIFE.

Profound economic reforms are seldom effected by force of arms; great economic problems are never solved by means of the "big stick." So true is this that one searches history in vain for an illustration to the contrary. It is true that, during the process of evolution, occasionally and incidentally, violence has occurred which has resulted in some great economic or sociologic movement. In all such instances, the violence has been due to other causes, or has, *per se*, had little or nothing to do with bringing about the result so far as economic change is concerned. During the past generation economic changes and reforms have been brought about in some parts of England and in continental Europe which seem almost incredible to one who hears of them for the first time, yet so quietly has this been done that scarcely a word of it all has reached us, and doubtless less than 1 per cent. of the people of this country have the slightest knowledge of the bare existence of these sociologic movements. Tremendous as these movements have been, with the resulting enormous betterment of certain classes of laboring people, no single act of strife worth noting has marked their progress.

Serious economic problems confront the medical profession of this country, and probably the greatest of these is the question of lodge and similar contract practice. It is purely a problem in economic sociology, and to one who gives it careful thought it becomes evident that it is a problem not to be solved by strife; the "big stick" can have no place in its solution. That this class of practice is a great and a growing evil probably no one will venture to deny; that it is an evil which disastrously affects the general public more than the medical profession will appear on careful study. When an unlimited amount of service is demanded and paid for by

a very limited compensation, that service will be slighted, no matter how conscientious the individual performing it may think himself. Any intelligent practitioner who is doing lodge practice often realizes that he is imposed on; that his services and his time are demanded when, under other circumstances, and if they had to be paid for at regular rates, he would not be disturbed. As a result, there is a feeling of resentment and the patient gets scant attention. The patient suffers from his own greed, and the people who participate in this wholesale medical service are really the ones who suffer most.

Indirectly, this class of practice reacts on all physicians and on all laymen. That a certain portion of the community is getting medical attention, of a sort, for a very small cost, soon leads the remainder of the community to believe that it, too, should get its medical attention at a less cost, and there is a demand for lower medical fees. Those who make this demand, however, do not realize that in the end they themselves will have to pay the bill. They do not appreciate the fact that, in order to keep himself up to the highest point of efficiency, the physician of to-day must have a good income. He must study unceasingly; he must constantly add to his equipment, material as well as mental; he must leave his home from time to time and study the work and the methods of other men. These things can only be done if the physician receives sufficient compensation to enable him to take a portion of his time for his own betterment.

It is thus evident that there is the fullest community of interest so far as this question is concerned; the real welfare of the general public, though now they know it not, demands a cure of this evil just as much as does the welfare of the medical profession. It is the duty of the medical profession to settle this and other economic problems affecting the public, and this duty should not be forgotten or ignored. Strife will not cure the lodge practice evil; fighting will not settle economic problems. Harmony and unity in action are the only means by which betterment may be brought about.

And this improvement must have its origin in the particular community interested; the harmony must be that of the local profession. The county medical society is, or should be, the most potent agent for effecting these economic changes. In the county society should be secured that harmony and unity of purpose and action which the welfare of the people demands. State associations can do but little; the American Medical Association can do no more; it is all in the hands of the physicians in each county. The substitution of friendly feelings for jealousy and animosity; the replacing of strife by harmony, through the knowledge of one another gained in the county society—in other words, the bringing about of an actual community of interest—will see the absolute eradication of the "lodge practice" evil.

THE QUESTION OF RECREATION.

The dependence of good health on recreation has always been recognized, though it is clear that there have been differences of opinion as to what constitutes recreation. In our day the word calls up visions of the tennis court, the gridiron or the golf links, and is generally used synonymously with sport, but it must not be forgotten that widespread as is the craving for exercise there are some who prefer the pleasures of the library or the card room. Women, while they are much more sensible regarding rational exercise than in former generations, are still too apt to regard a cooped-up afternoon at cards in a stuffy and poisonous atmosphere as recreation, and it can not be denied that the sterner sex offend the dictates of physiology almost as frequently. Even in medical meetings we have known listeners to be lulled to sleep by the carbonated air of the meeting hall. The matter of recreation has been discussed recently before the American Academy of Medicine[1] in a series of papers which attack the problem from different sides.

Used in the sense of exercise, the physiologic effects of recreation are manifest and obvious. To the individual who spends his days cooped in the counting room, the exercise of the muscles, especially in the open air, has a stimulating effect on the circulation, the respiration, and the muscular metabolism, promotes the oxygenation of the blood and increases the appetite. From the psychic side it is important that the exercise be accompanied by a certain mental stimulus. To exercise for exercise's sake is a tiresome matter, but to take exercise in the form of a game which supplies a certain element of competition, and requires mental and physical adroitness, is a pleasure. In these days of the strenuous life we are apt to be strenuous in our play as well as in our work, and it is important that we do not take our pleasures too seriously and degrade them below the level of true sport by a policy of "win at any price."

In considering the effect of exercise on the nervous system—and we must not forget that in the end the nervous system is the source of all energy—we should take into account the fact that different occupations make a call on the energy of different areas in the brain. In exercise we must attempt to rest the areas used in the daily routine and to bring into play different areas. Naturally muscle workers do not require the same sort of recreation as brain workers. In fact, the two classes need forms of recreation almost diametrically opposed. In adults, personal preference plays so strong a part that definite rules can not be formulated.

Recreation in connection with educational institutions requires special consideration, both because we are dealing with immature bodies and because the ethical aspects of play must be considered. The recent outbreak of public opinion regarding football is largely due to the fact that many of the casualties could

1. Bull. Amer. Acad. of Med. 1906, vii, 269.

have been prevented by restricting the game to the physically mature and that the ethical attitude of college men has been visibly debased by the game.

As physicians we are constantly preaching the doctrine of recreation, which we almost as constantly fail to practice. The fact is that there is a great need in our cities of means by which the mass of men can cheaply and conveniently get outdoor exercise. It is an expensive luxury for an individual in a sedentary business to keep well in a large city. The few athletic clubs which exist are as a drop in the bucket and come within the means of the rich only. It is to be hoped that in time the necessity for means of recreative exercise for those living in large cities will be recognized; that athletic outdoor sports may be regarded as necessities, not as luxuries for the well-to-do only.

TINKERING WITH THE PURE-FOOD BILL.

The Pure Food and Drug Bill, known as the Heyburn Bill, passed the Senate more than a month ago, while the House measure, practically identical, known as the Hepburn Bill, is now in committee, where two very important—not to say dangerous—amendments have been proposed. To understand the exact significance of these, it is important to bear in mind that the original measures provide that the examination of foods and drugs shall be made in the Bureau of Chemistry under the direction of the chief, by and with the advice of such experts as he may select for the purpose of determining whether or not such articles are adulterated, misbranded or unwholesome, and that if they are found to be adulterated or unwholesome the information shall be brought before a court which shall determine the facts and impose the penalty after hearing the case. It will thus be seen that the power which was intended to be delegated to the Bureau of Chemistry was in effect that of a grand jury which has no right to render a verdict, but limits its functions to a mere accusation. No usurpation of the judicial function was contemplated and the functions of the courts were left entirely undisturbed.

This bill received the approval of the medical profession, ascertained by a referendum sent into nearly every county in the United States. The enemies of the bill, it seems, have framed an amendment which provides for the appointment of a committee of five experts to consider the question of the wholesomeness of any preservatives or other substance in food, if the manufacturer or other person interested opposing the decision of the Bureau of Chemistry requests reference of the subject to such a commission. This commission is to pass on and essentially to have final jurisdiction on such questions.

There are several objections to this amendment. It limits the Secretary of Agriculture, to whom, as chief of the department which includes the Bureau of Chemistry, is intrusted the execution of the law, to a consultation with only five experts. This is a distinct and hurtful contraction of his present powers and of the powers which it was contemplated to bestow on him by the act as originally drawn. That this is true becomes apparent when it is remembered that he now has the right, which he frequently exercises, to enter into consultation with the ablest experts of the country without numerical limitation. The commission which it is proposed to establish by the amendment, and which would be more or less permanent, is further open to the objection of appointment by strictly political influence, and consequently does not give a guarantee of that careful and severe selection which would be exercised by an executive officer personally responsible for an efficient administration of the law. Furthermore, the proposed commission, vested, as it would be, with distinctly judicial functions, would be so far an infraction of the constitutional rights bestowed on the courts that the entire act would be imperiled.

In view of these facts, it becomes perfectly apparent that, under the guise of apparent fairness, the enemies of the Pure Food Bill, some of them experts employed by large food-preserving establishments, etc., have succeeded in securing the serious consideration of a proposition which in more ways than one would destroy the effectiveness, if not the actual existence, of the proposed law. Members of the medical profession, alive to the enormity of the crimes perpetrated on society through the manufacture and sale of impure foods and impure medicines, should at once and in most emphatic terms bring their forces to bear in an effort to defeat this pernicious amendment.

If, however, the preceding amendment is to be recognized as pernicious, what can be said of the second amendment, which has likewise been brought forward by the enemies of the reform in the manufacture of foods and drugs? Under the bill as first presented and as endorsed by the medical profession, it was provided that the manufacturer of any proprietary medicine containing alcohol or any enslaving drug should publish the formula on each original package. This has prompted the "patent-medicine" men to present an amendment to the effect that when an article contained in any one of these nostrums "be not described in the U. S. Pharmacopeia and in the National Formulary, and be not the prescription of a regularly licensed physician, and if the package fails to bear a statement on the label of the quantity or proportion of any alcohol, morphin, opium, heroin, eucain, chloral hydrate, or other enslaving drug, or any proportion of such substances contained therein, it shall be deemed misbranded; provided, however"—and here is where the quack medicine fiend gets in his work—"the quantity or proportion of alcohol need not be stated when not more than the quantity or proportion prescribed by the U. S. Pharmacopeia or National Formulary, as a solvent or preservative of the actual constituents of the medicines or preparation in such package used, and provided, furthermore"—and here is where the quack

medicine fiend becomes a fiend indeed—"that the quantity or proportion of opium or morphin need not be stated when the contents of the package contain not more than two grains of opium or ¼ grain of morphin to the fluid ounce, or, if a solid preparation, to an avoirdupois ounce."

This is probably the most brazen effort that has ever been made in public to promote and to continue the sale of enslaving drugs—drugs the mere unrestrained and unadvised taking of which by the public establishes the necessity for their continued consumption. The attempt to manufacture drunkards by concealing the presence of alcohol in these preparations under the specious plea that they are necessary solvents of other constituents is simply an attempt to sell poor whisky and to call it medicine. The reference to the U. S. Pharmacopeia and the National Formulary is made simply to throw dust in the eyes of the public and to give to the effort the appearance of a scientific basis, an effort that will deceive none with ordinary intelligence or possessed of the ordinary instincts of honesty and decency. If, however, this phase of the proposed amendment is reprehensible, what is to be said of the proposed attempt to exempt the publication on labels of the most enslaving drugs—drugs the most insidious in their encroachment on the mind and body of their victims. The mere proposition that these drugs, such as opium, morphin, heroin, chloral hydrate, and other narcotics, are to be exempted because they occur only in a certain apparently small proportion is as vicious as it is stupid. To enact such a law would be virtually to grant a license for the unlimited sale of enslaving drugs in a state of dilution. It is well known to every physician, as it ought to be known to every legislator, that when there is enough cocain or morphin in a preparation to do good there is enough to do harm; less than enough to do good is useless.

The foregoing considerations themselves ought to be sufficient to arouse every physician to active antagonism to the proposed measure and to prompt him to insist that his representatives in both branches of Congress shall exert their fullest possible influence not only in defeating the two proposed amendments, but in securing the enactment of the Pure Food and Drug Bill as originally drawn.

AMERICAN MEDICINE BECOMES A MONTHLY.

Our highly esteemed contemporary, *American Medicine*, will shortly cease to be a weekly and will be issued as a monthly medical journal. At the annual meeting of the stockholders the proposition was fully discussed and a large majority favored such a change. While we shall be sorry not to receive *American Medicine* every week, there is a wide field for it as a monthly. Its bright, progressive editorials, dealing with subjects always of great interest and importance to the profession, and its valuable original articles by men thoroughly competent to speak have placed it in a very high position among medical journals of to-day. The acknowledged ability of the editors and the high character of the contributed articles will insure the production of an excellent monthly journal. We wish it success and we trust that it may always stand for everything good and for nothing that in any way will hinder the progressive advance of an enlightened profession.

MARRIAGE OF DEFECTIVES IN NEW YORK.

The public seems to be on the way toward a very sane attitude on the subject of marriage of defective persons, if we may judge by a number of indications. One is a bill now before the New York State Legislature to prohibit the marriage of insane, epileptic, imbecile or feebleminded persons. If this bill becomes a law, a marriage contracted by such persons will be absolutely void. There is a provision which will allow one to be married if, thirty days before such marriage, one files in the county clerk's office a certificate signed by two physicians stating that cure has taken place and that there is no probability that the previously-existing defects will be transmitted to the offspring. This may be a loophole, but the bill, as a whole, is praiseworthy. The increasing favor with which such measures are regarded is a good sign for the future.

DRUNKENNESS.

The question was recently raised in a British medico-legal society as to the legal definition of when a man is drunk. The result can not be predicted exactly by the amount taken; for example, the judge sitting on the bench may have just taken into his system a much larger amount of alcohol than that which has brought the prisoner before him for judgment. This was considered an injustice. Since the question of individual tolerance is seldom raised, it was urged, the really minor sinner suffers. The point seems to us not well taken. The consequences must necessarily control the legal aspect of the case. In the absence of blue laws, the drunkard is not brought to court because he drank, but because of his condition which threatens peace, order and the safety of others.

DENITROGENIZING THE ATMOSPHERE.

About five years ago a noted English scientist sent out a rather disturbing prophecy that, with the rapidly increasing population of the earth, the wheat supply would become insufficient for lack of nitrogenous fertilizers. The present sources of supply are not inexhaustible, and his prediction excited some attention at the time, though we are not aware that it had any decided bull effect on the wheat market. Now comes another British scientist, Sir William Ramsay, who points out that the air over each square mile of the earth's surface contains enough free nitrogen to afford sufficient plant food for sixty years of the world's needs, and that measures are now under way to bring the atmospheric nitrogen into useful combinations for fertilizing purposes. We could probably spare a square

mile of atmospheric nitrogen once or twice a century without seriously affecting the general average of the atmosphere, and it is probable that, after having served its purpose, it would again, sooner or later, become a constituent of the world's gaseous envelope. It would be interesting, however, to note whether or not any local effects like those imagined by one or two well-known writers of fiction would be the sequence; whether we could repeat "Dr. Ox's" experiment as described by Jules Verne, for example. The vicinity of the nitrogen-combining plants, with their denitrogenized atmosphere, might be utilized as stimulating health resorts if Sir William Ramsay's anticipations are realized. There is room here for considerable fanciful suggestion, to say the least.

A NEW RADIUM DANGER.

The explosion of a glass tube in which a number of milligrams of radium bromid had been sealed up for eleven months is described in a German paper.[1] The tension producing the explosion was estimated at twenty atmospheres, possibly accumulated during that time by the liberation of helium in the tube. As physicians are using radium as a therapeutic agent it is well for them to be advised of this danger, the more so since other instances are said to be on record, and since its high cost will tend to its long keeping. The reporter of this accident, Herr Julius Precht, has undertaken to investigate the ratio in which pressure may develop from radium in a sealed tube. He publishes his experience as a caution to those who are in possession of tubes that have been sealed for a long time.

PULMONARY TUBERCULOSIS IN SCHOOLS.

The fact that phthisis is frequently spread in places where large bodies of people are gathered is too well known to require much emphasis. Schools are undoubtedly prominent in disseminating consumption, and consequently school buildings should always be as well ventilated as possible. There is at all times a considerable amount of tubercular disease among school children. The medical officer of Blackburn, Lancashire, England, in a recent report stated that he found that nearly 10 per cent. of the children examined in some of the schools had pulmonary consumption. In the Paris schools the state of affairs in this respect was even worse, the figures being from 11 to 14 per cent. among boys and from 17 to 20 per cent. among girls. At the International Tuberculosis Congress held in Paris last year the statement was made that one of the most fruitful sources of consumption among school children was the use of school buildings by adults for public meetings. It goes without saying that school rooms require plentiful ventilation, and that if they be filled with people in the evening, as well as in the day-time, that this desideratum is impossible of attainment. A speaker at a meeting of an educational society said that he thought that public meetings should not be permitted in school buildings except in rare cases, and that in order to lessen the dangers after such meetings the schoolroom should be washed with a weak solution of formaldehyd.

1. Physikalische Zeitschrift (Leipzig), Jan. 15, 1906.

THE TUBERCULOSIS EXHIBITIONS.

Both the public and the profession are to be congratulated on the interest that has been taken in the various tuberculosis exhibitions in several of the principal cities of the country. We have commented on those held in the East, and now a successful exhibition has been held in Indianapolis and another is in session in Chicago, both being well attended by the public. This feature of the campaign against tuberculosis is certainly valuable. We should be glad to see similar exhibitions concerning other communicable diseases, such as have been in operation in Germany for some time. The public is ready to be informed on all these subjects, and the medical profession certainly has work to do along this line. We congratulate all those who have labored so faithfully for the arranging and carrying out of these exhibitions and hope that their success will be a stimulus to further work in this direction.

Medical News

ALABAMA.

Coming Convention.—The Medical Association of the State of Alabama will convene at Birmingham April 17.

Established Quarantine.—The Mobile Bay quarantine board has established quarantine against Puerto Cortez, Honduras, on account of the presence of yellow fever at that place.

Personal.—Dr. Thomas J. Springfield, Ensley, who was operated on recently in Birmingham for malignant diseases of the bowel, is reported to be improving.——Dr. T. W. Ayers, Anniston, a medical missionary in Hwang Hien, China, has returned to America on a year's leave of absence.——Dr. William C. Mapes, Scottsboro, is dangerously ill with pneumonia.——Dr. and Mrs. Cunningham Wilson, Birmingham, sailed for Europe March 14.——Dr. Albert E. Meadow, Birmingham, is seriously ill with influenza.

ARKANSAS.

Bequest to Hospital. Under the provisions of the will of the late Major W. H. Davis $5,000 is bequeathed to the Davis Hospital, to be erected in Pine Bluff.

Change of Meeting Place.—The Arksansas Medical Society will not meet at Pine Bluff on May 8-10, it is announced, on account of insufficient hotel accommodations. The meeting will be held at Hot Springs.

Physicians and Surgeons' Association of Searcy.—This association has been organized with the following officers: President, Dr. John B. Grammer; vice-president, Dr. H. C. Jones, and secretary and treasurer, Dr. Luther E. Moore.

Councilor District Meeting.—A meeting of the Tenth Councilor District Medical Society was held at Fort Smith March 20. Dr. Joseph T. Clegg, Siloam Springs, was elected president; Dr. James A. Foltz, Fort Smith, vice-president; Dr. Charles E. Hurley, Bentonville, secretary, and Dr. Othello M. Bourland, Van Buren, treasurer. The next meeting will be held in Monte Ne.

New Rule in Hot Springs.—Dr. William H. Barry, president of the Government Medical Board, Hot Springs, has issued the following notice:

> Notice is hereby given to all parties whom it may concern that hereafter when a name of a physician is dropped from the list of registered physicians, neither the Department of the Interior nor the board will entertain an application for restoration to such list until the lapse of one year from the date of the dropping of the name from the registered list.

Drumming Prohibited. The Supreme Court of Arkansas has declared valid the state law passed in 1901 prohibiting the "drumming" of patients to physicians at Hot Springs. The Chancery Court at Hot Springs had declared this law unconstitutional.——Dr. T. B. Ryder, Hot Springs, was arrested March 13, charged with violation of the new city ordinance which provides that any physician convicted of soliciting or drumming patients may be deprived of his right to practice. On March 19 Dr. Ryder was found guilty, fined $100, and his license to practice revoked.

ILLINOIS.

New Maternity Hospital.—Plans are being completed for the Elizabeth Williams Maternity Hospital, to be built adjacent to the Evanston Hospital. The building will be three stories in height, fireproof, and will cost about $25,000.

Few Seek Positions.—Only twelve applicants took the examinations for nurses and chief nurses in the state charitable institutions which were held March 29 by the Illinois Civil Service Commission in Chicago, and at the Illinois Hospital for the Incurable Insane, Bartonville.

Go Abroad.—Drs. Franklin C. Vandervoort, John W. Fulwiler and Robert A. Noble, Bloomington, sailed for Europe, April 3. On March 28 these gentlemen were given a farewell dinner by Dr. Franklin H. Godfrey, at his home in Bloomington. Drs. Ernest Mammen, William E. Guthrie and the departing physicians responded to toasts.

Smallpox.—An epidemic of smallpox is said to prevail at Christopher, and the Illinois Central Railroad has declared a quarantine on that place.——A number of cases of smallpox have been reported at Rushville. The disease is also said to be present at Benton.——Smallpox appeared at Freeport in a factory and a number of persons have been exposed. The usual precautions have been taken to prevent the spread of the disease.

Chicago.

Medical Student Dies.—S. D. Haury, a senior student at the Northwestern University Medical School, who had already obtained an interneship at St. Francis' Hospital, Wichita, Kan., died suddenly in Chicago, March 18, from brain disease.

Fraternity Election.—At the annual meeting of the Rush Medical College Alumni Section of the Alpha-Omega-Alpha Fraternity the following officers were elected: President, Dr. C. Hugh McKenna; vice-president, Dr. R. L. Sensenick; secretary, Dr. William J. Swift, and treasurer, Dr. L. A. Beaton.

Deaths of the Week.—The total deaths for the week ended March 31 was 582, equivalent to an annual mortality rate of 14.80 per 1,000. Pneumonia, of course, led with 102. Consumption held, as usual, the second place, with 70. Then came heart diseases, with 48; nephritis, with 37; violence, including suicide, with 36, and nervous diseases, with 30. Ten deaths were reported from scarlet fever, as compared with one death from that disease during the corresponding week of 1905.

Deaths of the Month.—The total deaths during March were 2,463, equivalent to an annual mortality rate of 14.14 per 1,000, which compares favorably with the rate of 15.33 per 1,000, reported for March, 1905. Among the death causes pneumonia led with 421, consumption coming next with 304. Among other notable death causes were: Heart disease, with 203; nephritis, with 152; violence, including suicide, with 137; nervous diseases, with 129, and acute intestinal diseases, with 114 deaths.

Chicago's Health.—The mortality of Chicago for the first three months of 1906 was at the annual rate of 14.32 per 1,000, a decrease of 6.1 per cent. as compared with 1905. Among the decreased important causes of death were apoplexy, bronchitis, consumption, convulsions, influenza, measles, pneumonia, smallpox, suicide and whooping cough. The causes of death that showed an increase as compared with 1905 were nephritis, cancer, diphtheria, heart diseases, acute intestinal diseases, nervous diseases, scarlet fever and violence other than suicide. The most marked decrease was in bronchitis, and the most pronounced increase, scarlet fever.

Dr. Senn's Vacation.—Dr. Nicholas Senn left Chicago, April 4, for his regular summer vacation, and will return about August 4. He goes to Lisbon, where he will attend the International Medical Congress and deliver the oration on surgery for America, which will appear in THE JOURNAL. He then traverses the Mediterranean, goes through the Suez Canal and the Red Sea, down the east coast of Africa to Beira, then across country to Buluwayo, from there makes a trip to Victoria Falls, on the Zambesi, and then goes to Cape Town, where he takes steamer for England. During his trip Dr. Senn will send THE JOURNAL a report of the International Medical Congress and also occasional letters regarding his tour and the results of his study of the natives and diseases of the countries through which he passes.

Chicago Tuberculosis Exhibition.—An exhibition was opened in the Public Library Building April 2 under the auspices of the National Association for the Study and Prevention of Tuberculosis, the Chicago Tuberculosis Institute and the Illinois State Association for the Prevention of Tuberculosis. The exhibition contains everything pertaining to the cause, nature and effects of tuberculosis, also the means now used throughout the country for its prevention and cure. During the twenty-six days of the exhibition special lectures and conferences on tuberculosis will be held and exhibits will be demonstrated. The chief conferences to be held are those on the "Outdoor Treatment of Tuberculosis," "Workers and Tuberculosis," "Tuberculosis and Charity Organizations," "The School and Tuberculosis," and on April 14 a western tuberculosis conference will be held, over which Dr. H. B. Favill, Chicago, will preside, and at which Drs. Lawrence F. Flick, Philadelphia, and S. A. Knopf, New York, will deliver addresses. The exhibition is open free to the public on week days from 10 a. m. to 6:30 p. m., and also on the evenings on which addresses are to be given.

INDIANA.

Communicable Diseases.—Scarlet fever is said to be epidemic at Sardinia and Greensburg.——Whooping cough and measles are said to be epidemic at Linden.

Discourages Advertising.—The Medical Society of Shelby County has passed a resolution discouraging the use of physicians' names by the lay press, in the reports of deaths, births, accidents, etc.

New Hospital.—The Sisters of St. Francis have purchased two city blocks at Logansport on which a new three-story hospital with accommodations for 100 patients will be erected at a cost of about $50,000.

Osteopath Acquitted.—H. J. Baughman, an osteopath of Connorsville, charged with practicing medicine without a license, was declared "not guilty" March 25. The defendant admitted practicing osteopathy without a license, but claimed that the law passed by the last legislature providing for the practice of osteopathy in Indiana was unconstitutional.

Knox County Society Active.—At the regular quarterly meeting of this society, held in Vincennes, March 13, resolutions were passed urging the passage of the pure-food law, and advocating co-operation with the adjoining counties in maintaining the present fees for life insurance examinations. A committee of five was appointed to investigate any and all contract practice by members of the society and to report to the society.

Endow Fellowships in University.—A Chicago physician who does not wish his name revealed and Dr. Benjamin T. Terry, New York City, have offered to endow fellowships for pathologic research in the Indiana University, Bloomington. The first endowment is for a research fellowship in serum pathology, the second for a similar position in pathologic physiology. The income of each fellowship is $750 a year. These are conditional on the provision by the university of adequate library and laboratory facilities.

February Diseases and Deaths.—During February there were 912 fewer deaths than in February last year, and the disease prevalence was about 30 per cent. less. Pneumonia caused 403 deaths; tuberculosis, 372; violence, 109; cerebrospinal meningitis, 40; typhoid fever, 29; diphtheria, 20; puerperal fever, 14, and whooping-cough, 12. The death rate per 1,000 was 17.2 for cities and 11.7 for the country. Smallpox existed in 15 counties, but no deaths occurred. Of the deaths from violence, 5 were homicides and 20 suicides.

Personal.—Dr. Forbes H. Broughton, Wolcottville, was recently operated on in Detroit for the removal of gallstones.——Dr. Milo Gibbs, Greenfield, is critically ill with neuralgia of the heart.——Dr. Christian B. Stemen, Fort Wayne, completed thirty years of service as surgeon of the Pennsylvania Lines March 10.——Dr. Leo J. Weinstein has been made consulting gynecologist and Dr. Joseph H. Weinstein, attending gynecologist of the University Hospital, Terre Haute.——Dr. Austin Funk, New Albany, has returned from England.——Dr. John E. Owen, Evansville, is seriously ill.

IOWA.

Scarlet Fever.—An epidemic of scarlet fever is reported in Sioux City.

Personal. Dr. Andrew Marugg, Sherrills, was seriously injured in a runaway accident, March 20.

Hospital Overcrowded.—The State Inebriate Hospital, opened only a few weeks ago, is full to overflowing and the board of control has ordered that no more patients be received until vacancies occur.

Hospital Notes.—The Corning Hospital was opened last week for the accommodation of patients.

Itinerant Practitioners Leave.—The attempts of local physicians of Council Bluffs to force out of practice in that city two itinerant physicians calling themselves "Hot Springs Doctors," have been successful, and one of the individuals has gone to Des Moines, the other to Waterloo.

Hospital Accident Suit.—In the case of Mrs. Jesse Haase, Eldora, against Drs. Morton & Morton, Iowa Falls, in which the plaintiff claimed damages of $25,000 for a fall at the Ellsworth Hospital in January, 1905, the jury gave a verdict for the plaintiff, March 22, awarding her damages of $1,100.

State Asylum Report.—The second biennial report of the State Hospital for the Insane, Cherokee, shows a total of 716 patients in the hospital and a daily average for the two years of 66. The percentage of recoveries was about 27 and of deaths 5.7. The average age at death was 49 years, and 26 per cent. of the mortality was due to tuberculosis.

Summer School at State University.—The College of Medicine at the State University of Iowa, Iowa City, has decided to give a summer course. Work will be done in the departments of clinical medicine, operative surgery, pathology, bacteriology, ophthalmology, otology, rhinology, laryngology, experimental pharmacology, sanitary chemistry and surgical and applied anatomy.

KENTUCKY.

Sanatorium Bill Passes.—The state senate has passed a bill appropriating $20,000 to establish a state tuberculosis sanatorium. The bill originally called for $50,000, but the committee thought the former sum would do for a beginning. The committee to locate and build the institution will be appointed by the governor.

Personal.—Dr. John P. Ferguson, Louisville, was thrown from his carriage, March 1, and fractured two ribs.——Dr. J. Halpin O'Reilly is critically ill with pneumonia.——Dr. H. C. Lassing, Beaver Lick, was recently stricken with paralysis.——Dr. John Q. Taylor, Paducah, has gone to California for a month's vacation.——Dr. James A. Averdick, Covington, is suffering from septicemia.

LOUISIANA.

Acquitted.—Dr. John B. C. Gazzo, Thibodeaux, charged with killing Clerville Guedry near Raceland in July last, has been acquitted.

Gives Vase to Hospital. The French government has presented a beautiful Sevres vase to the Eye, Ear, Throat and Nose Hospital, New Orleans.

Reward Not Claimed.—The $5 reward offered by the New Orleans board of health for the first live stegomyia mosquito found in New Orleans in March has not been claimed.

Quarantine Against Cuba and Central America.—The State Board of Health has decided that the restrictions against Cuban and Central American ports shall become operative on and after March 15.

Found Guilty of Murder.—Dr. Albert P. Bush, Sligo, was found guilty, at Shreveport, March 7, of the murder of Jack C. Guice, an electrician, on Dec. 16, 1904. The jury returned a verdict of "guilty as charged, without capital punishment."

Quarantine Station Discontinued.—The State Board of Health has decided that the Port Eads quarantine station shall be temporarily discontinued, and that the inspection previously done at this post shall be carried out at the upper quarantine station.

Suspicious Case Not Yellow Fever.—In the case of Zeles Ebernz, supposed to have had yellow fever, the patient died, March 18, at the Charity Hospital, New Orleans. The autopsy proved that the man did not have yellow fever, but died from catarrhal jaundice.

Presentation to Dr. White.—As a token of appreciation from the citizens of New Orleans, a superb silver service was given to Surgeon Joseph H. White, United States Public Health and Marine Hospital Service, March 24. The address of presentation was made by Col. Charles Janvier, and Dr. White made a suitable response.

Personal.—Dr. C. J. Gremillion, Alexandria, president of the local board of health, is recovering from an attack of appendicitis.——Dr. Richard O. Simmons, Alexandria, has been elected president of the Rapides Parish board of health, succeeding Dr. A. R. Chapin.——Dr. Simon G. Gill, New Orleans, has been ordered to Havana as resident inspector of the State Board of Health at that point.——Dr. Elijah M. Ellis, Crowley, has resigned the presidency of the local board of health and will make his home in Fort Smith, Ark.

For Yellow-Fever Inspection and Publicity.—At a representative gathering of the citizens of New Orleans, March 6, the following preamble and resolutions were adopted:

Whereas, It is essential to the welfare of this community that the city of New Orleans should be rendered immune against yellow fever; and,

Whereas, This condition is entirely possible by the strict enforcement of the anti-mosquito ordinance and such other sanitary measures as can be readily undertaken; therefore be it

Resolved, That this meeting of citizens does hereby earnestly urge that each of the ward organizations immediately reorganize and actually prepare to perform a thorough inspection service. Be it further,

Resolved, That this meeting pledges itself to furnish all the funds necessary, and requests the following citizens to form a central committee, having power to add to its numbers, for the purpose of handling this campaign.

At the regular meeting of the Orleans Parish Medical Society, March 22, the following preamble and resolutions were unanimously adopted:

Whereas, The experiences of the past summer furnished ample corroboration of the correctness of the mosquito doctrine of the propagation of yellow fever, also the importance of prompt and full reports of cases of the disease, as well as the danger of early and mild cases; be it

Resolved, That it is the sense of this society that it is the solemn duty of physicians to report immediately all cases of yellow fever, or suspected yellow fever, occurring in their practice. Be it further

Resolved, That any member of this society failing to make such a report will be deemed guilty of unprofessional conduct, and be tried for such by the judiciary committee according to the by-laws of this society. Be it further,

Resolved, That the members of this society urge their friends, their patients and the public in general to keep all patients completely protected by mosquito bars. Be it further

Resolved, That these resolutions be furnished to the daily press for publication.

MAINE.

Hospital Completed.—The Aroostook Hospital, Houlton, is completed and will be conducted by Drs. Thomas S. Dickison and Gibson.

Fire at Hospital.—A fire in Trull Hospital, Biddeford, March 14, caused damage amounting to $15,000. The 17 patients were removed without casualty.

Hospital Corps Instituted.—General orders have been issued by the adjutant general providing for the organization of a hospital corps in the National Guard of the State of Maine.

Personal.—Dr. Charles A. Packard, dean of the medical faculty of Bath, was given a complimentary dinner by the physicians of the city, March 7.——Dr. Martin P. Judkins, Rockland, is convalescent from his recent operation.

MARYLAND.

State Tuberculosis Sanatorium Assured. The legislature has passed the bill appropriating $100,000 for a state sanatorium for consumptives.

Addition to Hospital.—The regents of the University of Maryland have purchased considerable property in the vicinity of the institution for the benefit of the school of medicine. A large addition will be erected to the University Hospital, Baltimore, in the near future.

Personal.—Drs. Henry Barton Jacobs and John C. Hemmeter, Baltimore, will visit Europe this summer. Dr. Hemmeter will deliver the annual oration before the Ohio State Medical Society at Canton, Ohio, May 9.——Dr. Eugene Jones of Kensington has been very ill with rheumatism.

Sent to Prison. Dr. John H. Tompkins, a colored physician of Cumberland, who at his second trial for causing a death by criminal operation, was found guilty and sentenced to imprisonment in the penitentiary for six years. His accomplice, a druggist, received a sentence of imprisonment for ten years.

Milk Supply of Baltimore. The seventh of the course of lectures being delivered weekly at Johns Hopkins University was given by Assistant Commissioner of Health, C. Hampson Jones, M.D., April 3, on "The Present Aspect and Needs of the Milk Supply of Baltimore." Dr. Lewellys F. Barker presided.

Appropriation for New University Buildings. The trustees of Johns Hopkins University are endeavoring to secure an appropriation of $100,000 from the legislature, so that with this sum as interest, they may be able to borrow something like a million dollars which they need for the construction of buildings on the new university site in the northern suburbs. Two years ago this beautiful site of nearly 200 acres was given to the university by some of its friends, but removal to it has thus far been impossible from lack of funds necessary to erect the buildings.

MICHIGAN.

Smallpox.—An outbreak of smallpox is reported in at least three families in Ingalls.

Fire Damage.—Fire on March 18 did damage to the extent of $500 to the residence of Dr. William A. Crandall at Hesperia.

Epidemic Disease in Kalamazoo.—Kalamazoo reports 300 cases of German measles and 200 cases of whooping cough, with a rapid spread of the diseases.

Jury Disagrees.—In the case of "Dr." Allen Raymond, Battle Creek, charged with violation of the state medical law, the defendant admitted the facts, but the jury disagreed after six hours' deliberation.

Wins Libel Suit.—In the suit of Dr. Charles J. Sorsen, Calumet, against the editor of a Finnish paper at Hancock, in which $10,000 damages was claimed for injury to the reputation of the plaintiff by the publication of an alleged libelous article, the jury returned a verdict awarding him $3,000.

Incorporated to Wipe Out Quackery.—The Calhoun County Medical Society has been incorporated with the following officers: President, Dr. Herbert A. Powers; secretary, Dr. Eugene Miller, and treasurer, Dr. Clarence G. Vary, all of Battle Creek. The society has decided to make an appropriation for prosecuting violators of the registration laws.

Women Physicians Organize.—The Women's Academy of Medicine, Detroit, was organized March 13, with the charter membership of 14. The following officers were elected: Dr. Lucy J. Utter, president; Dr. Mary G. Haskins, vice-president; Dr. Anna M. F. Starring, secretary; Dr. Minta B. Kemp, treasurer, and Drs. Florence Huson, Louise R. Thompson and Isabella Holdom, censors.

Hospital Notes.—The ways and means committee of Grand Rapids has appropriated $20,000 for a contagious disease hospital.——St. Mary's Hospital, Marquette, was formally opened February 27.——The Port Huron Hospital and Home received a check for $1,000, the proceeds of the annual hospital ball.——Mr. George F. Sonner, Benton Harbor, has given $5,000 toward the erection of a new $15,000 hospital in Benton Harbor, provided that $10,000 additional be raised before July 1.

Personal.—Dr. William H. Van Slyke, Hancock, suffered severe injuries in a fall.——Dr. Michael P. Fenelon, Escanaba, has been elected physician of Delta County.——Dr. Mason W. Gray, Pontiac, has been elected delegate of the Oakland County Medical Society to the state medical society, and Dr. Clark J. Sutherland, Clarkston, alternate.——Drs. James F. Breakey and R. B. Canfield, Ann Arbor, have been elected delegates, and Drs. Andros Gulde, Chelsea, and John A. Wessinger, Ann Arbor, alternates, from the Washtenaw County Medical Society to the state medical society.——Dr. Frederick Townesend, Sault Ste Marie, has been appointed local surgeon of the Soo Line and the Duluth, South Shore & Atlantic.

NEBRASKA.

May Not Practice.—The State Board of Health has decided that Dr. Albert C. Welch, Haigler, must not practice medicine at this time. He has, however, been given leave to file an amended petition for a license.

Hospital News.—Wesleyan Hospital, Lincoln, opened for the reception of patients last week.——It is reported that the Hospital for Crippled Children, Lincoln, will be obliged to close because of lack of funds for carrying on its work.

Pension Examiner Exonerated.—Dr. Edgar D. Cummins, Plattsmouth, a member of the pension medical examining board, charged with prejudice against Union soldiers applying for pensions, has been exonerated, after investigation by special agents of the department.

Personal.—Drs. A. E. Gerish, Auburn, and James Kay, Nemaha City, have been appointed physicians of Nemaha County.——Dr. William B. Kern, superintendent of the Hastings Hospital for the Chronic Insane, is seriously ill and has been taken to Rochester, Minn., for operation for appendicitis.

NEW HAMPSHIRE.

Suit Settled.—The suit of Lewellyn F. Hobbs, Northampton, against Dr. Joseph W. Odell, Greenland, for alleged malpractice, has been settled out of court.

Oppose Anti-Contract Action.—The fraternal orders of Concord have adopted resolutions protesting against the actions of the Central District Medical Society in opposing contract medical practice, and resenting this action as a conspiracy against fraternal organizations and physicians connected therewith.

Hospital Staff Reorganized.—The medical staff of the Laconia Cottage Hospital has been reorganized with Dr. Alfred W. Abbott, president, and Dr. Alpha H. Harriman, secretary.

Personal.—Dr. Stephen Young, Dover, slipped and fell, breaking his right leg at the ankle.——Dr. David P. Goodhue has completed 40 years of active practice at West Springfield.——Dr. Albert J. Nute, city physician of Portsmouth, has resigned, and Dr. Andrew B. Sherburne has been elected to fill the unexpired term.

Hospital Notes.—During 1905, 318 patients were admitted to the Mary Pillsbury Hospital, Concord. The permanent funds of the hospital have been increased by a legacy of $1,000 from the estate of Henry W. Randlett and a donation of $4,000 by the late Emeline Harvey Sage of Hopkinton. The children's free bed fund has been completed by the payment of $5,000 to the treasurer.——Wentworth Hospital, Dover, erected at the cost of $70,000, is almost completed and will be opened in June. The hospital has accommodations for 35 patients.——Nashua Hospital has elected Dr. Isaiah G. Anthoine, clerk, and Drs. Augustus W. Shea, Bradford Allen, Herbert L. Smith, Benjamin G. Moran, Sam S. Dearborn and Isaiah G. Anthoine, trustees.

NEW YORK.

Coroners' Physicians Increased.—The Dowling bill, which provides for an increase in the number of coroners' physicians to four in Manhattan, two in the Bronx, four in Brooklyn, three in Queens and two in Richmond, passed the assembly, March 26.

Against the Transfer of Patients.—A bill has been introduced into the legislature by Senator Fitzgerald imposing a fine of $5,000 or imprisonment for five years for any one in authority in a New York hospital who orders the removal to another hospital of a patient who is seriously ill.

Osteopathy Bill Opposed.—The county medical society at its meeting March 26, decided to oppose the bill now before the assembly entitled, "An act regulating the practice of osteopathy in the State of New York." This society construes the bill as it now stands as an act permitting the licensing of osteopaths to practice medicine without an examination.

New York City.

Smallpox on Liner.—A case of smallpox of about four days' duration was discovered among the passengers of the steamer *Rhein*, which arrived at quarantine March 28. About 230 of the 2,399 pasengers on this vessel were sent to Hoffman Island.

Want Prisoners Cleaned.—A committee has been appointed by the board of magistrates to consult with the board of health and endeavor to make some arrangement for the washing and disinfection of the filthy prisoners whom the police have been in the habit of bringing into court.

Criminal "Doctors" Out of Business.—It has been announced by the postmaster-general that 52 illegal "medical offices" in New York and Brooklyn have been practically put out of business by the efforts of the postmasters. The business done by some of these concerns was large. As many as twenty criminal operations a day are said to have been performed by some of them, and the incomes ranged as high as $2,000 a week.

The Smoke Nuisance.—Last year 187 smoke nuisances were abated by the board of health, but these were chiefly small concerns. It is now stated that the board will proceed against big corporations. Summonses are about to be issued to the Interborough Company, the Edison Company and others. The Interborough Company once defeated the health department in an action, but the health department is hopeful of getting a favorable decision this time.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended March 24, 1,952 cases of measles, with 47 deaths; 453 cases of tuberculosis, with 200 deaths; 370 cases of diphtheria, with 50 deaths; 209 cases of scarlet fever, with 8 deaths; 36 cases of cerebrospinal meningitis, with 23 deaths; 25 cases of pertussis, with 2 deaths; 15 cases of typhoid fever, with 5 deaths; 159 cases of varicella, and one case of smallpox, a total of 3,220 cases, with 335 deaths.

To Visit European Hospitals.—The building of hospitals for contagious diseases in various parts of the city and a tuberculosis sanitarium at Otisville, together with the fact that a municipal filtration plant is under consideration, has decided the board of health to send Dr. Herman M. Biggs, chief med-

ical officer of the board, to Europe to inspect the hospitals and filtration plants there. On the return of Dr. Biggs, in about three months, Commissioner Darlington will take up the question of a filtration plant with the board of estimate.

Athletic Boys Must be Examined.—The Public School Athletic League will hereafter not permit a boy to take part in contests unless he is certified as to physical condition by a physician of the department of health. It has been realized that the one flaw in the work of the athletic league was the fact that boys who were unfit physically could not be barred out of the games. The examinations will be made by the school physicians, who will add to their usual inquiries, special tests to determine whether or not the child shall be allowed to enter contests.

The Overtrained Nurse.—This was the subject of a symposium at the New York Academy of Medicine on March 29. With only one exception the speakers were of the opinion that the nurse of to-day was overtrained. There was complaint that in the present system there is too much theory and too little practice. Drs. W. Gilman Thompson, A. Alexander Smith, Robert Abbe and Arpad G. Gerster pleaded for fewer subjects and more thorough teaching. Dr. Smith spoke for the old-fashioned nurse whose principal asset was her sympathy and proper equipment of character.

Will Subpoena Medical Staff.—An investigation has been conducted in the case of Walter Crocker, who was injured by a car, taken to Roosevelt Hospital and then transferred to Bellevue, dying fourteen minutes afterward. The coroner states that the whole medical staff of Roosevelt Hospital who were on duty at the time of the transfer will be subpoenaed, and that he will compel them to produce the books that he may view the record in every suspicious case of transfer. It was stated at Bellevue that Crocker's death was due to consumption, but the coroner's physician found that it was due to a fracture of the skull.

NORTH CAROLINA.

Fire Endangers Hospital.—A fire which caused a loss of $250,000 in Fayetteville, March 25, placed the Highsmith Hospital in such imminent peril, as the flames were attacking the building on three sides, that it was necessary to remove the patients from the building.

Address Graduating Classes.—Dr. Robert Lee Payne, Norfolk, Va., has accepted an invitation to deliver the annual address to the graduating class in medicine at the University of North Carolina, Chapel Hill, May 11. Dr. Benjamin K. Hays, Oxford, will deliver the annual address to the graduating class of the North Carolina Medical College, Davidson, at its commencement next month.

Prevention of Tuberculosis.—At the last session of the Medical Society of the State of North Carolina a paper was read by Dr. Martin L. Stevens, Asheville, advocating the organization of a North Carolina Society for the Prevention of Tuberculosis. The society authorized the appointment of a committee to consider plans for organizing this society, to report to the state society at its next meeting in May. The following committee has been appointed: Dr. Martin L. Stevens, Asheville, chairman, and Drs. Richard H. Lewis, Raleigh; George G. Thomas, Wilmington; J. Howell Way, Waynesville; James A. Burroughs, Asheville; James M. Parrott, Kingston; Charles M. Strong, Charlotte; W. H. H. Cobb, Goldsboro; Benjamin K. Hays, Oxford; Albert Anderson, Wilson; Charles A. Julian, Thomasville, and Watson S. Rankin, Wake Forest.

PENNSYLVANIA.

Health of the State.—The interest taken by the medical profession of the state in the collection and compilation of data concerning the prevalence of contagious disease in the state is becoming more evident from the reports handed in each month. During the month of February there were reported to the health department 12,539 cases. Of these 11,011 were in cities and boroughs, and 1,528 in rural districts and townships. There were 2,280 cases of typhoid fever reported, of which only 116 were from rural districts, while 2,172 were from cities and boroughs. Typhoid fever during the month was reported in 51 counties, being particularly prevalent in Philadelphia, Montour, Fulton Erie and Allegheny. Measles continues to be epidemic throughout the state, the number of cases reported representing 45 per cent. of the total diseases reported from all causes. Diphtheria shows a decrease of 157 cases for the month. There were in all 885 cases reported. There were 875 cases of scarlet fever, a decrease of 4 over those reported in the previous month. There were only 9 cases of smallpox reported from the entire state, 6 of which were from cities and boroughs and 3 from the rural districts.

Philadelphia.

Keen to Close Hospital.—Dr. W. W. Keen announces that he will close his private hospital permanently after June 1. Thereafter his patients will be taken care of in the Jefferson Medical College Hospital.

Personal.—Dr. John H. Musser addresed the Alumni Association of the University of Pennsylvania in Brooklyn, N. Y., March 22. Dr. Francis D. Patterson is confined to his home with a punctured wound of the foot.

Leffmann on Health Board.—Dr. Henry Leffmann, professor of chemistry in the Woman's Medical College of Pennsylvania, has been appointed a member of the board of health by Mayor Weaver to take the place of Dr. Charles B. Penrose, resigned.

Voodoo Doctor's Sentence Commuted.—George P. Hossey, the negro voodoo doctor who was senteneed to death a short time ago, was pardoned by the state board of pardoas, which recommended that his sentence be changed from death to life imprisonment.

New Head for Blockley.—Dr. Henry Sykes, for many years superintendent of the Episcopal Hospital of Philadelphia, has been appointed medical superintendent of the Philadelphia Hospital to succeed Dr. Montgomery Biggs, resigned. Dr. Sykes has devoted practically his entire life to institutional medicine.

New Hospital Trustees.—Two new trustees have been elected to the board of the Medico-Chirurgical Hospital to fill vacancies caused by the retirement of Judge A. M. Beitler and William C. Mason. The new members are Justice William P. Potter of the Supreme Court, and Dr. William H. Green, formerly professor of chemistry at the Central High School and for several years demonstrator of chemistry in the University of Pennsylvania.

Hospital Examinations.—Examination of applicants for internships in the Phoenixville Hospital will be held in the hospital April 21. The salary is $100 per year.——The Reading City Hospital will conduct its examination for internes at the Hotel Walton, Philadelphia, April 17. For information address the secretary of the board, Dr. Israel Cleaver, Reading.——Examination of applicants for the position of resident interne in the Williamsport City Hospital will be held in the Y. M. C. A. building, Philadelphia, April 12.

Money for Charity.—The executive committee of the nineteenth annual German-American Charity Ball has decided to divide the net receipts of the ball, $2,261.92, among the following institutions: The Children's Hospital of Philadelphia, the Pennsylvania Epileptic Hospital and the Kensington Hospital for Women. As a result of the Jewish Charity Bazar, given for the benefit of the Jewish Industrial Home, the institution will receive between $3,000 and $4,000.——By the will of the late John F. Young the Episcopal Hospital will receive $700.

Health Report.—The total number of deaths for the week ended March 31 aggregated 625. This is an increase of 39 over the number reported last week, and an increase of 80 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 33; measles, 10; pertussis, 8; diphtheria, 10; consumption, 72; cancer, 18; apoplexy, 22; heart disease, 60; acute respiratory disease, 127; marasmus, 9; enteritis, 21; hepatic cirrhosis, 11; Bright's disease, 46; accidents, 11, and suicide, 2. There were 365 cases of contagious disease reported, with 45 deaths, as compared with 332 cases and 34 deaths in the preceding week. Typhoid fever is still prevalent and on the increase, as shown by 225 cases, with 33 deaths reported, as compared with 186 cases and 27 deaths reported in the previous week.

New Consumptive Hospital.—A new hospital, known as the Kensington Dispensary for the Treatment of Tuberculosis, was formally opened for inspection March 29. The hospital is located at Susquehanna and Trenton avenues, in the congested mill district of Kensington. The plan of the institution is said to be entirely new and the dispensary will be conducted on modern plans, but will have no special hospital facilities. Patients who are unable to visit the dispensary will be treated at their homes. Medicines and the diet of milk and eggs will be furnished free at the dispensary. Members of the staff and nurses will visit the patients at their homes and direct the

course of treatment. It is the purpose of the staff of the institution to deliver lectures in different parts of Kensington so as to give instructions as to the prevention as well as cure of this disease. The staff of the institution is composed of Dr. William G. Eisenhardt, chief physician; Drs. G. Ashton Bardsley and Charles Schaubel, assistants, and Dr. Aller G. Ellis, pathologist.

Vice, Its Prevention and Cure.—The symposium on vice and its prevention held by the Philadelphia County Medical Society, March 28, was in the interest of the American Society of Sanitary and Moral Prophylaxis, a branch of which was organized in Philadelphia, March 26. The principal address of the meeting was delivered by Dr. Prince A. Morrow of New York, president of the society, who gave an outline of the work of the society in the past year, and told of the great difficulties that beset the medical profession on every hand in inaugurating a crusade against the conservatism which fosters gross ignorance on the subject of vice and its physical effects. He believes that by medical instruction, assisted by other influences and agencies, the public can be enlightened to imminent dangers. A public opinion must be created to exterminate these evils by education, as the great white plague is slowly being conquered by intelligent methods. He hoped that a society such as they have in New York will be organized in every city of the country, and only then can we hope for success. He outlined the New York idea and said that work was instituted along four lines: 1, The education of the youth in hygiene and social truths through the home and school; 2, the education of the young men and women of the working classes; 3, the dissemination of hygienic knowledge in the Army and Navy, and, lastly, the education of the general public. He criticised the newspapers for the insertion of objectionable advertisements and at the same time their objection to printing articles of an instructive nature in their news columns.

VIRGINIA.

License Fee Abolished.—Dr. Robert S. Powell, Woodview, has succeeded in having a bill passed by the state legislature whereby the physicians will not have to pay $10 per year state license which has heretofore been imposed.

Medical Board Announced.—At a meeting of the executive committee of the Medical Society of Virginia, Dr. Hack U. Stephenson of Toano, James City County, was elected to succeed Dr. Junius E. Warriner, Brook Hill, as a member of the State Board of Medical Examiners. The governor has announced the following appointments for the State Board of Medical Examiners: Drs. Willard B. Robertson, Tappahannock, First district; Herbert M. Nash, Norfolk, Second; Hack U. Stephenson, Toano, Third; William W. Wilkinson, La Crosse, Fourth; Richard S. Martin, Stuart, Fifth; Samuel Lile, Lynchburg, Sixth; Robert C. Randolph, Boyce, Eeventh; Robert M. Slaughter, Alexandria, Eighth; Elliott T. Brady, Abingdon, Ninth; Charles W. Rodgers, Staunton, Tenth; A. S. Priddy, Bristol, and R. Bruce James, Danville. Drs. Millson R. Allen, Norfolk, and Dr. E. Cone Williams, Hot Springs, have been appointed homeopathic members at large.

WISCONSIN.

Physicians Fined.—Dr. Thomas Welch, Rhinelander, has been fined $30 and costs for failure to report a case of diphtheria. He will appeal the case.——"Dr." William Bentz, Menominee, charged with practicing medicine without a license, convicted and fined $50 and costs, has decided not to appeal and has paid the fine and costs.

GENERAL.

American Urological Association.—This body met April 3, at New York, to organize a second section of the association, comprising New York, Pennsylvania, New Jersey, West Virginia, Maryland, Virginia and Delaware, and to discuss a scientific program.

License Fee in Hawaii.—The law imposing a $10 license fee on physicians in Hawaii has been declared invalid by the Supreme Court of the territory on the ground that it discriminates between the holders of licenses under the amending act and the holders of licenses issued prior thereto.

Canal Zone Medical Society.—Physicians on the Canal Zone recently met and organized a medical society. A committee consisting of Col. W. C. Gorgas, Capt. Ira A. Shimer and Dr. Bates was appointed to prepare a constitution and by-laws. Dr. A. B. Herrick was elected temporary chairman, and permanent officers will be elected later.

No Longer Members of the Proprietary Association.—Messrs. Henry K. Wampole & Co., Philadelphia, ask us to announce that the firm is no longer a member of the Proprietary Association of America.

Annual Report of the Marine-Hospital Service.—In this report are given the details of the work done by the United States Public Health and Marine-Hospital Service during 1905, including the inspection of immigrants, quarantine inspection, the work of the hygienic laboratory, and by the department in the recent yellow-fever epidemic in the South. The report includes some interesting original articles by members of the service, especially one by Dr. Wyman on "Yellow Fever, Its Origin and Prevention," and one by Assistant Surgeon Salmon on "Diagnosis of Insanity in Immigrants."

Health of the Philippines.—Chief Quarantine Officer Heiser reports that during the week ending Feb. 3, 1906, there was a sharp increase in the number of cases of cholera reported for the province of Cavite, and that on investigation this was found to be due to the fact that the natives of Naic refused to observe the simple precautions which were recommended. More attention has now been given to isolation and disinfection, and there has been a marked reduction in the number of cases since reported. The bureau of health has divided the infected provinces into small districts and has placed an insular medical or sanitary inspector in charge of each district, the principal object being to instruct the natives in the means of combating cholera. If the plans proves successful it is expected that there will be a marked decrease in the near future in the number of cholera cases.

Philadelphia Branch of American Pharmaceutical Association.—A meeting for organizing a branch of the American Pharmaceutical Association was held in the hall of the College of Physicians, Philadelphia, March 28, 1906. In addition to a fair representation of the leading pharmacists of Philadelphia, several prominent physicians of Philadelphia took part. Dr. Solomon Solis-Cohen welcomed the foundation of this local branch and expressed the belief that the provisions of the by-laws that were adopted would serve as a guarantee of the trustworthiness and integrity of the active members of this section. Dr. Henry Beates, jr., after congratulating the members on the important step they are taking to improve the science of pharmacy, assured his hearers that the time was not far distant when true worth and ability, in pharmacy as well as in medicine, would command more adequate compensation and reward. The officers for the current year are: Prof. Joseph P. Remington, president; William McIntyre and William L. Cliffe, vice-presidents; M. I. Wilbert, secretary-treasurer. The next meeting will be held at the same place, April 23, when it is proposed to discuss "The Immediate Object and Aims of the Philadelphia Branch of the American Pharmaceutical Association."

CANADA.

Personal.—Dr. George Elliott, Toronto, is recovering from a very exhausting illness which had lasted five weeks.

British Columbia Health Report for 1905.—British Columbia was absolutely free from smallpox during 1905. Of diphtheria there were 146 cases, with 9 deaths; scarlet fever, 158 cases, with 3 deaths. In the treatment of diphtheria a death rate of 6.1 per cent. is an excellent showing.

Annual Report of British Columbia Provincial Hospital.—Dr. C. E. Doherty, medical superintendent of the British Columbia Provincial Hospital for the Insane, reports that 123 patients were admitted into that institution during 1905. Of this number 90 were males and 33 females; 8 came from the Yukon. Seventy-six patients were discharged during the year, 43 of whom had recovered.

Canadian Association for the Prevention of Tuberculosis. The annual meeting of the Canadian Association for the Prevention of Tuberculosis was held in Ottawa on March 28-29, 1906. The committee on organization and work urged that the association take immediate steps to secure the co-operation of the federal parliament, all provincial legislatures and municipalities and all charitable organizations of every particular. Parliament will also be asked to incorporate the association and thereby to give it more scope and wider authority; and a grant of $5,000 will be sought instead of one of $2,000. The Hon. W. C. Edwards was re-elected president; Dr. Thorburn, Toronto; Dr. Bayard, St. John, N. B., and Sir James Grant, M.D., Ottawa, vice-presidents. Sir James Grant, Ottawa, read a paper on the relation of school children to tuberculosis, and Dr. A. J. Richer, Montreal, delivered an illustrated lecture on the subject.

"Patent Medicines" in British Columbia.—A bill has been introduced into the legislature of British Columbia in response to 3,600 petitioners to regulate the sale of patent medicines in that province. It is the largest signed petition ever presented to the British Columbian legislature, and shows that the people of the Pacific province are getting alive to the evils of the unrestricted and promiscuous manufacture and sale of these dangerous nostrums. It provides that all "patent medicines" for internal use which contain chloral hydrate, ergot, morphin, opium, belladonna or their compounds, cocain, acetanilid, or sulphuric, nitric or kindred acids, must contain a label of poison on the package or bottle, with the name and percentage of the poison and the ingredients. No "patent medicines" under the provisions of this bill may contain more than 10 per cent. of alcohol except under permission of the provincial board of health. Penalties for violation are attached to the bill.

Toronto General Hospital.—Alterations have been in progress in the Toronto General Hospital, in the residence of the late superintendent, Dr. Charles O'Reilly, whereby wards are created for neurasthenic patients and some mild forms of mental disorders. The accommodation will for the present be limited to 14 beds, and will be under the direction of Dr. D. Campbell Meyers. Matters which have been rather acute in connection with the affairs of this hospital for the past two or three weeks now seem to have been finally settled. Some time ago the city of Toronto voted $200,000 to the institution, the result of this being an agitation on the part of many city physicians not on the hospital staff, that they should be permitted to follow their patients into the hospital when they paid the ordinary public ward charge of $3.50 a week. The trustees of the hospital would not accept the grant, hence the difficulty. Arrangements were made for a compromise and a new rate was fixed for semi-public wards at $7 a week, which proved satisfactory to all. Now the Toronto General Hospital has the following classes of patients: charity, public ward (which are used for clinical purposes by the university medical college), semi-public (which may be so used on arrangement with their physicians), semi-private and private.

FOREIGN.

Tropical Gangrene in Guam.—It is reported that tropical gangrene has become so prevalent in the island of Guam that Lieutenant McNamee, U. S. N., acting governor of the island, has recommended the establishment of a hospital where these cases can be isolated.

Dietary of the British Mercantile Marine.—A bill has been introduced in the British House of Commons relating to the dietary of the men of the merchant navy. It is far more generous in quantity and provides more changes than did the former scale of dietary.

Sanatoria on the Canary and Madeira Islands.—The arrangements are about completed for the German sanatorium to be erected on the Madeira Islands. A Belgian company has been formed to erect a sanatorium also on the Canary Islands. Dr. Resquisse of Brussels is medical director of the latter company.

The Finsen Monument.—The committee in charge of the subscriptions for the Finsen memorial report that 85,000 kronen ($22,950) has been received. They have decided that $13,500 is to be devoted to enlarging the Finsen Light Institute and that the remaining $9,450 is sufficient for the memorial.

Isolation of Advanced Cases of Pulmonary Tuberculosis.—A hospital has been opened recently near Northampton, England, for the isolation of advanced cases of consumption occurring in that town. In addition, a resolution was passed by the town council of Northampton to retain, at certain sanatoria, a few beds for consumptives in the early stages of the disease.

In Russia.—The *St. Petersburg. Med. Wochft.* still continues to publish each week a list of physicians arrested for political activity. Some of them have been sent to Siberia. Dr. Lebedew, who was arrested not long ago, has died of typhus contracted in prison. Some of the physicians arrested appealed to the czar still to allow them the privilege of voting for the new representative assembly, asking that the ballots of the political prisoners may be taken and counted. Many physicians in the Baltic regions have been brought to financial distress by the prevailing disturbances and a subscription list has been opened by the *Wochenschrift* for the benefit of the suffering colleagues.

The Kroenlein Festschrift.—On the occasion of the close of his fiftieth semester as professor of surgery at the University of Zurich, Switzerland, R. U. Kroenlein was presented with a *Festschrift* containing a number of articles by his present and former pupils. The surgical amphitheater was decorated and crowded, and the festivities concluded with a banquet for the "festival family." His pioneer work in the surgery of the brain, the kidneys and abdomen was duly commented on in the addresses, and the honors heaped on him at home and abroad. He is now in his sixtieth year, and was elected to preside at the German Surgical Congress this year.

Prizes Offered by Belgian Academie de Medecine.—A prize of $200 will be given for the best work on "Simulation from the Medicolegal Standpoint, in Regard to Traumatisms and Neuroses, and Means to Detect It." Articles must be received before July 1, 1906, and must be sent in anonymously, written in French, German or Flemish. Another prize of the same amount is offered for the best work on "Normal Intestinal Poisons (toxins) of Man, Their Pathogenesis and Means of Defense Against Them." Must be received before Sept. 25, 1906. A third prize offered is for "Indications for Surgical Intervention in Stomach Affections;" prize 800 francs ($160); articles must be received before June 15, 1907, as also articles competing for the fourth prize, 600 francs ($120), for the best study on paraplegia in the horse. There is also an Alvarenga prize of $140 for the best work on any branch of medicine. Address all communications to the secretary, E. Masoin, Secrétaire de l'Académie de Médecine, Brussels, Belgium.

Homage to Baccelli.—The great Policlinico at Rome is to be formally inaugurated next week, although it has been in use for some time. The official dedication of the great hospital will be made the occasion for an ovation to the famous clinician and statesman of Italy, Guido Baccelli, to whom the Policlinico owes its inception and its design. He advocated the intravenous administration of drugs in urgent cases of malaria, etc., and has served the profession and his country as cabinet minister and senator, and in other ways. While minister of public instruction he inaugurated the extensive excavations in the Roman forum which have produced such interesting results in recent years. He was born Nov. 25, 1832, the son of a prominent physician, descended from a noble Roman family, many of whose exploits are engraved on marble tablets in the Capitol. He became professor of legal medicine at 24, and later professor of pathologic anatomy when this chair was founded, mainly by his efforts. He later became professor of clinical medicine, his indefatigable energy finding an outlet in nearly a hundred scientific publications, of which his studies on malaria, on the pathology of the heart and aorta, on typhoid, a new sign of ovarian tumors, and a new means of treating aneurism of the aorta, are the best known. It was in a large measure due to Baccelli that the hotbeds of malaria in Italy have been made healthier. A gold plaque is to be presented to him in the name of his friends at home and abroad, subscriptions having long been pouring in for the purpose. The committee in charge of the arrangements have invited all the governments of Europe to send representatives to the fête, and have personally invited the ministers of public instruction in each state, and the presidents of the universities, medical faculties and academies of medicine in the different countries, as well as his friends and admirers in and out of the profession in Italy.

International Medical Congress.—This week is the last which allows physicians from this country to reach Lisbon in time for the fifteenth great medical congress of nations. Large numbers have gone, so that the United States will be ably represented both in quantity and quality. The official program of the congress has just been received, with the names and addresses of all members who had registered to March 6, a total of 836 names. The program states that the United States government sends eleven delegates, among them the present president of the American Medical Association and four ex-presidents, the chief of the Marine-Hospital Service, Dr. Walter Wyman, also Nicholas Senn, R. Matas of New Orleans, R. Guiteras of New York, A. Vander Veer of Albany, and J. C. Wise of the Navy. Nearly two dozen medical faculties and medical organizations have appointed delegates. Ten addresses are to be presented at the general assemblies, including one by Senn on the "International Study of Carcinoma" (to be published in THE JOURNAL); by Aaser of Christiania on the "Relations Between Acute Infectious Diseases and Tuberculosis"; by R. Boyce of Liverpool on "Prophylaxis of Yellow Fever as Result of 1905 Epidemic in Central America and New Orleans"; by Neumann of Vienna on "Anatomic

Causes of Syphilitic Recurrences and Means to Combat Them," and by Reclus of Paris on "Local Anesthetics." Sanarelli and Gorgas have each announced a communication on the intermediate yellow fever host. Sir Dyce Duckworth will speak on "Chorea Considered as Cerebral Rheumatism"; F. B. Turck on "Ulcer of the Stomach" (to be published in THE JOURNAL); Lombroso on the "Importance of Study of the Sleep in Different Diseases"; G. W. McCaskey of Fort Wayne on "Disease of the Digestive Organs in Pathogenesis of Arterial Hypertension"; A. Lorand of Carlsbad on the treatment of obesity and of senility, and F. Ostwald of Paris will describe his latest experiences with injections of cocainized alcohol as a means of curing facial neuralgia, a method of treatment attracting much attention at present, and described in these columns recently. The subject of tropical diseases will be treated more extensively than ever before at an international congress, and will be presented by men who are the leading authorities. Caravassili of Athens has announced a communication on "Hot Intestinal Injections (104-107 F.) as Important Topical Measure in Treatment of Infantile Enterocolitis." D. R. Brower of Chicago will speak on "Treatment of Acute Insanity in General Hospitals." Official addresses on experimental syphilis are to be presented by Metchnikoff, Lassar, Neisser, Finger and Landsteiner, all of continental Europe. The "Pre-cancer Stage" will be described by A. Ravogli of Cincinnati; J. T. McDonald of Honolulu will speak on the "Recognition of Obscure Cases of Leprosy," and A. Carrel of Chicago will describe his method of anastomosis of blood vessels. Chicago will also be represented in the section on ophthalmology in which H. Gradle will read an article on "Punctate Forms of Retinitis." A number of imposing fêtes are announced, including a royal garden party and a reception by the president of the congress, a ball given by the municipality, a reception by the Comte de Burnay, another by the congress, by the Geographical Society, and others. The list of addresses and communications fills about fifteen of the large pages of the official program, in small type, and it is truly international to a surprising extent.

LONDON LETTER.

The Medical Society of London.

The one hundred and thirty-third anniversary dinner of this famous society was held recently. Sir Lauder Brunton, F.R.S., presided. About 190 fellows of the society and guests were present. Dr. Macalister, president of the General Medical Council, in proposing the society referred to the projected amalgamation of the various medical societies, and said that it was to the advantage of the profession at large that the movement should succeed. If the government required any advice on scientific matters the Royal Society was appealed to, but for medical matters there was no such recognized body. The proposed Royal society of Academy of Medicine would supply this want. Sir Lauder Brunton in replying referred to the history of the society and to its vigor during a life of 133 years. He laid stress on its financial stability and on the value of its library. He pointed out that the society was an offshoot of the Royal Society.

Lunacy in Ireland.

The report on lunacy in Ireland during the year 1904 has just been issued. On Jan. 1, 1905, the insane in establishments of all kinds numbered 22,996—an increase of 202 on the previous year—which is the smallest increase since 1893. The proportion of insane under care to 100,000 of the population was 522. In recent years the ratio of the insane to the population has steadily increased. In 1851 it was 1 to 657; in 1891, 1 to 222; in 1901, 1 to 178.

Correspondence

Pure-Food Analyses in South Dakota.

PHILADELPHIA, March 28, 1906.

To the Editor:—I desire to direct the attention of the medical profession generally to some valuable results recently published by Prof. James H. Shepard, chemist to the South Dakota food department. These are careful analyses of high class commercial whiskies, published in a bulletin issued by the department.

There are few topics in the analysis of foods and beverages on which it is more difficult to get calm and scientific judgment than on whisky. The widespread use of this substance by all classes and the evident baleful effects of such use in many instances, has led to much casuistry. The humble citizen who gets drunk gives himself, as a rule, no concern as to moral responsibility. He drinks to secure the physiologic condition which whisky in full doses produces. The more cultured citizen frequently tries to find some excuse for his habit, or failing in that, for his condition, and in the latter effort falls back on real or supposititious adulterations of the beverage. This cry is taken up by many and we frequently see it stated that if the community could only be furnished with "pure liquors," the evils of inebriety would disappear. Among the widespread errors is the view that the principal injurious effect of whisky is due to "fusel oil," and that ageing removes this. It has long been evident that no experimental basis exists for this view, but the statement has been carried from one text-book to another, and repeated in scientific and popular essays until it has come to be almost an axiom. The late Mr. A. H. Allen, an eminent English analyst, showed some years ago that the fusel-oil theory is of little value, but the special merit of the paper by Professor Shepard, is that by analyses of the best brands of American whiskies, according to most approved methods, he has shown that the fusel-oil content is not appreciably reduced in ageing, and that its proportion bears no relation to the age of the sample. So far has the "fusel-oil fetish" been allowed to operate, that American authorities have proposed to fix a limit (0.25 per cent.) for commercial whiskies. This limit favors certain distillers who use antiquated methods of distillation. By improved stills, the amount can be reduced below 0.1 per cent. The percentage of fusel oil found by Shepard ranged from 0.0849 to 0.1936, and the whiskies represented by these extremes are, respectively, 8 years and 7½ years old.

Of late years, many who have abandoned the fusel-oil theory, have adopted the view that furfural and other aldehydic bodies are responsible for the injurious action of whiskies, and that these are removed by ageing, but Shepard's results upset these views also. The furfural content was very minute in all the samples, and in several cases the highest aldehyde content was found in the oldest samples.

I think these results are of sufficient importance to bring to the general notice of the profession, inasmuch as the original form of publication—a state bulletin—has a comparatively limited circulation. A large part of the work in establishing truth is the preliminary destruction of error, and before correct notions of the sociologic and physiologic actions of alcoholic beverages can be attained, the elimination of these fetishes must be accomplished.

HENRY LEFFMANN.

The Nostrum and Other Evils.

CANON CITY, COLO., March 28, 1906.

To the Editor:—In all that has been said about the nostrum and proprietary-medicine question, it seems to me that the real remedy has not been emphasized as it should be. If every physician would get right and keep right, these evils would soon cease to exist; and no one need to go to extremes in the matter, either. There are comparatively few "ethicals," and it is easy to select them. Those made by reputable manufacturing houses and whose ingredients are well known, and for which no extravagant claims are made, should be the only ones prescribed. We all condemn "counter prescribing" and yet keep on prescribing proprietaries and help the druggist to do a wholesale business in that line. Why not stop it, and stop it right now?

Another thing: How long are we going to subscribe for, contribute to and read medical journals that accept objectionable advertisements? A journal which I have taken for years had, in a recent number, sixteen advertisements from members of an association which is the bitterest enemy the profession has; besides quite a number of others equally objectionable. The editors of this journal are leaders in the pro-

fession in America, able, and of wide reputation. Are not these men culpable in that they do not demand the exclusion of these "ads." on penalty of their resignation? I have stopped reading this journal and all others of the kind. If every other physician would do the same how easily could the medical press be reformed. But physicians will not stand together in these matters. A striking illustration of this fact has recently come under my observation. An old-line life insurance company, for which I have been an examiner for a long term of years, lately cut the fee from $5 to $3 for examinations for policies under $3,000. I promptly returned the schedule unsigned, as I have all such propositions for the past ten years, giving my reasons for declining to accept the cut. The medical director of the company, in a long letter arguing the case, said among other things: "Thus far we have had only 900 refusals as against over 12,000 acceptances." Were the figures reversed, what a grand reform would have been effected. But no; one man stands for his rights and the honor and dignity of the profession while thirteen "bow the knee" and let the company walk over them as it pleases. Our county society recently adopted a resolution, since concurred in by every physician in the county, pledging its members to make no examinations for life insurance companies for less than $5. A resolution was also adopted endorsing the work of THE JOURNAL and also *Collier's Weekly*, the *Ladies' Home Journal* and other magazines, in their fight against the "Great American Fraud," the "patent medicine" and nostrum evil. Every medical society in the United States ought to speak out and speak plainly, if it has not already done so,, and every physician should get right at once on these questions and thus once and forever put an end to these evils.

T. B. MOORE, M.D.

Association News

THE BOSTON SESSION.

Announcement of Headquarters and List of Hotels, with Prices.

While Boston is liberally supplied with hotels of the first class, many of which are in the immediate neighborhood of the meeting places selected by the Committee of Arrangements for the annual session of the American Medical Association, June 5-8, 1906, the Committee on Hotels deems it wise to bring to the notice of those expecting to attend, the advisability of securing accommodations well in advance, since the time chosen for the session is not far from the commencement days of Harvard, Tufts, Boston University and the Massachusetts Institute of Technology, and during the same week it is expected that Eddyites to the number of some thousands will visit Boston to open a new "temple." The committee urges members of the Association, therefore, not to postpone too long the securing of rooms, and it engages to act in the matter for all who will make their desires known; but the final engagement must be made in all cases by the applicant directly with the hotel managers.

In addition to the hotels included in the list below are many of perfect respectability, but not of such excellence as to entitle them to be rated as of the first class.

LIST OF HOTELS WITH PRICES.

The following are the hotels included in the first class, with terms, and the number for whom it is estimated that there will be accommodations at the time of the session:

ADAMS HOUSE, Washington Street. European plan. Single rooms, without bath, $1.50 to $4 per day; with bath, $2.50 to $4. All rooms cost $1 additional when occupied by two persons. Accommodations, 200.

AMERICAN HOUSE, Hanover Street. European plan, $1 to $4 per day. Accommodations, 200.

BELLEVUE, Beacon Street. European plan. Single rooms, $1.50 to $2.50 per day; with private bath, $3 to $5. Double rooms, $3 to $4 per day; with private bath, $4 to $6. Accommodations, 150.

BRUNSWICK, Boylston Street. American plan. Rooms without bath, $5 per day; with bath, $6. Accommodations, 300.
The Brunswick has been chosen headquarters for the Section on Surgery and Anatomy.

BUCKMINSTER, Commonwealth Avenue and Beacon Street. American and European plans. American: $4 per day, European, $2. Accommodations, 40.

CARLTON CHAMBERS, 1138 Boylston Street. European plan. Single rooms, without bath, $1.50 per day; with bath, $2. Double rooms, without bath, $3, per day; with bath, $4. Accommodations, 50.

CECIL, Washington Street. European plan. Single rooms, $1 and upward per day; for two persons, $2 and upward; with bath, $1.50 to $4. Double rooms, with bath, $2.50 to $5. Accommodations, 75.

CLARENDON, Tremont Street. European plan. Single rooms, without bath, $1 per day; double rooms, without bath, $2; with bath, $2.50. Accommodations, 50.

COMMONWEALTH CHAMBERS, Bowdoin Street. European plan. Rooms, with hot and cold water and free public bath, $1 and $1.50 a day for one person; $2 and $2.50 for two persons. Rooms with private bath, $1.50 to $2 for one person, $2 to $2.50 for two persons. Accommodations, 175.

COPLEY SQUARE HOTEL, Huntington Avenue and Exeter Street. European plan. Rooms, $1.50, without bath, to $3 and $4 with bath, according to number of persons. Accommodations, 200.
The Copley Square has been selected as headquarters for the Sections on Obstetrics and Diseases of Women and on Pathology and Physiology.

CRAWFORD HOUSE, Scollay Square. European plan. Single rooms, with two persons in a room, $2 to $3 per day. Accommodations, 75.

ESSEX, Atlantic Avenue. European plan. Single rooms, $1.50 and upward; with bath, $2 and upward.

HEMENWAY CHAMBERS, Westland Avenue. European plan. Single rooms, with bath, $1.50 to $3 per day. Double rooms, with bath, $2.50 and $4.50. Three rooms, with bath, $4 and upward. Accommodations, 75.

LANGHAM, Worcester and Washington streets. European and American plans. European plan, $1 and upward per day. American plan, single rooms, $2 per day; single rooms, with two persons, $3. Accommodations, 100.

LENOX, Exeter and Boylston streets. European plan. Single room, without bath, $2.50 to $3 per day; with bath, $4 and $5. Accommodations, 50.
The Lenox has been chosen as headquarters for the Section on Ophthalmology.

LEXINGTON, 13 Boylston Street. European plan. Single rooms, $1.50 to $2 per day; for two persons $2.50 to $3. Accommodations, 75.

NOTTINGHAM, Copley Square. European plan. Single room, $1 and $1.50 per day; with bath, $2; two persons, without bath, $2 and $2.50; with bath, $3. Accommodations, 150.
The Nottingham has been selected as headquarters for the Sections on Diseases of Children and on Cutaneous Medicine and Surgery.

OXFORD, Huntington Avenue. American and European plans. Single rooms, $1, $1.50 and $2 per day. Accommodations, 100.
The Oxford has been chosen as headquarters for the Section on Pharmacology.

PARKER HOUSE, School Street. European plan. Single rooms, without bath, $1.50 to $3 per day; for two persons, $2.50 to $4.50. Single rooms, with bath, $2.50 to $4; for two persons, $4 to $6. Accommodations, 75.

QUINCY HOUSE, Brattle Street. European plan. Rooms, $1 per day and upward. Accommodations, 300.

REVERE HOUSE, Bowdoin Square. European plan. Single rooms, $1 per day; for two persons, $1.50; with bath, $2; for two persons, $3, with parlor and bath, for two persons, $5. Accommodations, 200.

SOMERSET, Commonwealth Avenue. European plan. Single rooms, $2.50 per day; with bath, $3. Double rooms, $3.50; with bath, $4. Accommodations, 100.
The Somerset has been chosen as headquarters for the Section on Practice of Medicine.

THORNDIKE, Boylston Street. European plan. Single rooms, with detached bath, $1.50 per day and upward (a few single rooms at $1.00); double rooms, with detached bath, $2 and upward; single, with connecting bath, $2 and upward; double, with connecting bath, $3 and upward; suite of two chambers and bath (or parlor, chamber and bath), $5 and upward. Accommodations, 125.
The Thorndike has been chosen as the headquarters for the Sections on Hygiene and Sanitary Science and on Laryngology and Otology.

TOURAINE, Boylston Street. European plan. Single room, without bath, one person, $3 per day; two persons, $4.50; double, with bath, one person, $4 to $6; two persons, $5.50 to $8. Accommodations, 40.
The Touraine has been chosen as the headquarters for the Section on Nervous and Mental Diseases.

UNITED STATES HOTEL, Beach Street. American plan; two in a room, $2.50 per day and upward for each person. European plan, two in a room, $1.00 and upward, for each. Accommodations, 150.

VENDOME, Commonwealth Avenue. American plan. Single rooms without bath, $5 per day; with bath, $6. Accommodations, 200.
The Vendome has been chosen as the headquarters for the General Offices.

VICTORIA, Dartmouth Street, corner Newbury. European plan. Single rooms, with use of bath, $2 per day and upward; with private bath, $3.50 double, with use of bath, $3 and upward with private bath, $4.50 and upward. Accommodations, 50.

WESTMINSTER, Copley Square. European plan. Single rooms, $2 per day; with two persons, $3 and upward; three room apartments, $9 to $12. Accommodations, 50.
The Westminster has been chosen as the headquarters for the Section on Stomatology.

YOUNG'S HOTEL, Court Square. European plan. Single rooms, without bath, $1.50 to $2 per day; for two persons, $2.50 to $4; with bath, $2.50 to $4.50; double room with bath, $4 to $7

The following hotels are within a few minutes' walk of the general meeting places; the others are not more than fifteen minutes' distance by trolley cars:

Brunswick.	Nottingham.	Vendome.
Carlton Chambers.	Oxford.	Victoria.
Copley Square.	Somerset.	Westminster.
Hemenway Chambers.	Thorndike.	
Lenox.	Touraine.	

The following hotels have been selected as headquarters for the general officers and for the sections:

General Officers	Vendome.
Practice of Medicine	Somerset.
Obstetrics and Diseases of Women	Copley Square.
Surgery and Anatomy	Brunswick.
Hygiene and Sanitary Science	Thorndike.
Ophthalmology	Lenox.
Diseases of Children	Nottingham.
Stomatology	Westminster.
Nervous and Mental Diseases	Touraine.
Cutaneous Medicine and Surgery	Nottingham.
Laryngology and Otology	Thorndike.
Pharmacology and Therapeutics	Oxford.
Pathology and Physiology	Copley Square.

Attention is called to the fact that, at the time of the session many seashore resorts will be open, and it is possible that these may offer more attraction to those who have lived inland than the hotels within the city proper. Those which the committee would recommend are within an hour of Boston, either by rail or steamboat. These and other available hotels will be announced later.

BOARDING AND LODGING HOUSES.

The Committee on Hotels and Transportation has secured a list of 521 private houses where board and lodging can be secured. Many of these houses are in the neighborhood of the general meeting places. These, and many more still to be secured, will soon have been critically inspected and rated. The committee will gladly act for those who desire its assistance in securing rooms and board in these houses. A list of them with rates will be furnished in a later number of THE JOURNAL.

RESTAURANTS.

By reason of the fact that many thousands of persons, residing elsewhere, conduct their business in Boston, the city is unusually well supplied with restaurants, which are equal to all possible demands on them. These are situated in all parts of the city. Naturally the greater number of them are located in the business section, but there are many in the neighborhood of the general meeting places.

CHARLES HARRINGTON, Chairman,
DAVID D. SCANNELL, Secretary,
Committee on Hotels and Transportation.

Marriages

ERIE E. BENEDICT, M.D., to Miss Matilda Simonson, both of Racine, Minn., March 21.

MICHAEL V. BALL, M.D., Warren, Pa., to Miss Grace Paterson of Buffalo, N. Y., March 14.

HOWELL BEIRNE BURWELL, M.D., Davis, Ala., to Miss Frances Laura McArthur of Rome, Ga., April 4.

ROBERT N. WOOD, M.D., Chaplin, Ky., to Mrs. Ida S. Gardner of Louisville, at Jeffersonville, Ind., March 24.

WALTER A. LOOPS, M.D., Impur, Naga Hills, Assam, India, formerly of Milwaukee, Wis., to Miss E. V. Preston, formerly of New Haven, Conn., at Madras, India, February 27.

Deaths

John Clark Le Grande, M.D. Atlanta (Ga.) Medical College, 1880; for eighteen years editor of the *Alabama Medical Journal;* one of the organizers, treasurer and business manager of Birmingham Medical College; a member of the Hillman Hospital staff; president of the Medical Association of the State of Alabama in 1900; first vice-president of the American Medical Association in 1895; president of the Jefferson County Medical Association; president of the Tri-State Medical Society of Tennessee, Georgia and Alabama, 1901-1902; a member of the Southern Gynecological and Surgical Association; one of the best known practitioners of Alabama, and a man of national prominence, died at his home in Birmingham, March 21, after a long illness, aged 51.

John H. Kulp, M.D. State University of Iowa, Medical Department, Iowa City, 1872; of Davenport, Iowa; alienist and manager of the insane department, Mercy Hospital, Davenport; member of the Iowa State Medical Society, Iowa and Illinois District Medical Society; president of the Scott County (Iowa) Medical Society; member of the American Medico-Psychological Association, and from 1881 to 1901 a member of the board of control of the State Hospital for the Insane, Mount Pleasant, died at a sanitarium in Pueblo, Colo., March 22, from septicemia, after an illness of ten days, aged 56.

Harry Hoyle Butts, M.D. University of the City of New York, 1885; a member of the American Medical Association, New York State Medical Association, New York County Medical Association, Medical Society of the County of New York and New York Academy of Medicine; surgeon to the throat and nose department of Bellevue and Presbyterian hospitals and to the Manhattan Eye, Ear and Throat Hospital; lieutenant colonel and brigade surgeon N. G. N. Y., died in his apartments in New York City, March 24, from an incised wound of the throat, the cause of which is unknown, aged 41.

W. M. S. Beede, M.D. University of California, Medical Department, San Francisco, 1884; for several terms coroner of San Joaquin County; for a time consular surgeon in Shanghai, and in practice at Manila, P. I.; a member of the American Medical Association, Medical Society of the State of California, San Joaquin County and San Francisco County medical societies, Hongkong and China Branch of the British Medical Association; chairman of the Stockton Chamber of Commerce, died at his home in that city from cerebral hemorrhage, March 21, after an illness of four days, aged 40.

Hugh T. Nelson, M.D. University of Virginia, Medical Department, Charlottesville, 1875; a Confederate veteran; formerly a member and president of the State Board of Medical Examiners; instructor in surgery in the University of Virginia; president of the Medical Society of Virginia; member of the International Association of Railway Surgeons; member of the Southern Surgical and Gynecological Association, died at his home in Charlottesville, March 26, from pneumonia, after an illness of one week, aged 60.

Benjamin Walter Carpenter, M.D. University of Vermont, Medical Department, Burlington, 1857; assistant surgeon of the Second Vermont Volunteer Infantry; surgeon of the Ninth Vermont Volunteer Infantry; chief medical officer at Camp Douglas, Chicago, and medical director of the Second Division, Eighteenth Army Corps during the Civil War, and thereafter a practitioner of Burlington, Vt., died at his home in that city, March 20, after a short illness, aged 69.

James C. J. King, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1871 a Confederate veteran; member of the State Medical Association of Texas, and once its vice-president; a member of the Central Texas Medical Association, and a member and once president of the Waco Medical Association, died at his home in Waco, Texas, March 21, from cerebral hemorrhage, after a short illness, aged 64.

Alexander H. Thompson, M.D. New York University, New York City, 1861; licentiate of the Upper Canada Medical Board, 1865; member of the College of Physicians and Surgeons of Ontario, 1866; for a number of years a member of the Ontario Board of Health, died suddenly from heart disease at his home in Strathroy, Ont., March 31, aged 69.

Jefferson D. Christman, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1876; formerly health officer and coroner's physician; a member of the Philadelphia Medical Club, Medical Society of the State of Pennsylvania and Lehigh Valley County Medical Society, died at his home in Allentown, Pa., March 30, aged 50.

Joseph B. Kingsbury, M.D. Dartmouth Medical School, Hanover, N. H., 1871; one of the oldest residents of Holbrook, Mass; for many years a member of the local school board, trustee of the public library, and member of the board of health, died at his home in Holbrook, March 24, after an illness of several weeks, aged 71.

William John Douglas, M.D. Trinity Medical College, Toronto, 1876; member of the College of Physicians of Ontario, 1876; member of the Ontario Medical Council since 1897, of Coburg, Ont., fell dead from his buggy while driving into the country to make a professional call, March 29.

Benjamin S. Roseberry, M.D. University of Maryland School of Medicine, Baltimore, 1874; professor of materia medica in Baltimore University from 1883 to 1888; a member of the American Medical Association, died at his home in Gardiner, N. M., where he went for his health eighteen years ago, March, 28, aged 52.

James Simpson Dunn, M.D. Western Pennsylvania Medical College, Pittsburg, 1900; a member of the American Medical Association, Allegheny County Medical Society and Austin Flint Medical Society, died at his home in Pittsburg, March 22, from pneumonia, after an illness of three weeks, aged 30.

Reuben B. Spackman, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the American Medical Association; a pioneer practitioner of Clearfield County, Pa., and one of the most prominent physicians of that section, died at his home in DuBois, March 20, after a lingering illness, aged 65.

Allen H. Oliver, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1882; assistant superintendent of Presbyterian Hospital, New York City, for eight years, was found dead in his bed, in that institution, from cerebral hemorrhage, March 27, aged 58.

John Robert Bristow, M.D. Tulane University, Medical Department, New Orleans, 1871, of Farmington, Texas, a member of the Grayson County and North Texas medical associations, died at the home of his son, near Comanche, I. T., March 25, from chronic nephritis, aged 75.

C. B. McGuire, M.D. University of Nashville, Medical Department, 1856, surgeon of the First Tennessee Infantry, C. S. A., during the Civil War, died at his home in Fayetteville, Tenn., March 25, after an illness of several years, aged 75.

Thomas P. Hereford, M.D. Jefferson Medical College, Philadelphia, 1860, an officer in the Confederate service during the Civil War, died at his home in Elmwood, Mo., March 4, from senile debility, after an illness of several months, aged 69.

William H. Woodson, M.D. University Medical College of Kansas City, Mo., 1896, some-time city physician of Joplin, Mo., died at the home of his father in Liberty, Mo., from tuberculosis, after a long illness, March 22, aged 32.

Edward M. Southwick, M.D. Baltimore Medical College, 1898, formerly resident physician of the Maryland General Hospital, died at his home in West Philadelphia, March 25, from typhoid fever, after a short illness, aged 38.

Harry S. Ellwood, M.D. University of Buffalo, Medical Department, 1868, a member of the Erie County Medical Society, died at his home in Buffalo, N. Y., March 22, after an illness of six months, aged 67.

Walter E. Black, M.D. Memphis Hospital Medical College, 1901, of Guymon, Okla., died at the home of his father in Altus, Okla., March 24, from cerebral hemorrhage, after an illness of three weeks.

James C. Klingeman, M.D. Bellevue Hospital Medical College, New York City, 1872, died at his home in Papillion, Neb., March 20, from cerebral hemorrhage, after an illness of three days, aged 55.

Paul N. Zilliken, M.D. Homeopathic Medical College of Missouri, St. Louis, 1892, of Hoffman, Ill., died at the home of his mother in Evansville, Ill., March 18, from nephritis, after a lingering illness.

James H. Myers, M.D. University of Nashville, Medical Department, 1885, representative from Lawrence County in the legislature of Arkansas in 1903, died recently at his home in Black Rock.

George Sullivan Woodman, M.D. Harvard University Medical School, Boston, 1849, a member of the Massachusetts Medical Society, died at his home in Cambridge, Mass., March 22, aged 81.

George F. Dearborn, M.D. Albany (N. Y.) Medical College, 1857, a surgeon in the Civil War, died at his home in Rockaway, N. J., from pneumonia, after a short illness, March 26, aged 71.

James M. Kelleam, M.D. University of Louisville, Medical Department, 1882, of Fort Smith, Ark., died in San Antonio, Texas, March 23, from nephritis, after a long illness, aged 47.

Sarah J. McCarn Craig, M.D. Woman's Medical College, Philadelphia, 1863, died at her home in Rochester, N. Y., March 22, after an illness of several months, aged 74.

James W. Exline, M.D. Cleveland Medical College, 1870, a member of the American Medical Association, died at his home in Los Angeles, Cal., March 15, from heart disease.

Ralph W. Ferry, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1898, died suddenly at his home in Roseville, N. Y., March 22, aged 32.

Henry C. Ramsey, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1883, died at his home in Thomasville, Ga., recently, and was buried March 23, aged 58.

Hall Wilson, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1888, is reported to have been murdered at his home in Augusta, Texas, March 24.

Fred S. Hunt, M.D. Rush Medical College, Chicago, 1881, of Stuart, Neb., was instantly killed while attempting to board a freight train at O'Neill, Neb., March 23.

James D. Easton, M.D. Homeopathic Hospital College, Cleveland, 1876, died suddenly at his home in Elmira, N. Y., from cerebral hemorrhage, March 26, aged 53.

William D. Williams, M.D. Homeopathic Hospital College, Cleveland, 1865, died at his home in London, Ohio, March 22, from cerebral hemorrhage, aged 70.

Daniel M. Redlon, M.D. (County License, Ind.), 1897, a veteran of the Civil War, died at his home near Pierceville, Ind., March 17, from paralysis, aged 76.

William J. Crawford, M.D. Eclectic Medical Institute, Cincinnati, 1869, died at his home in Jackson, Mich., March 24, from cerebral hemorrhage, aged 78.

James M. Harman, M.D. Rush Medical College, Chicago, 1876, of Fairport, Mo., died at Excelsior Springs, Mo., March 12, from nephritis, aged 51.

John B. Hunt, M.D. Homeopathic Hospital College, Cleveland, 1863, died at his home in Westerville, Ohio, March 20, from pneumonia, aged 76.

Edward C. Johnson, M.D. Barnes Medical College, St. Louis, 1897, died suddenly, from cerebral hemorrhage, at his home in Rodessa, La., March 16.

Robert S. Finley, M.D. Eclectic Medical Institute, Cincinnati, 1850, died at his home in Xenia, Ohio, from senile debility, March 22, aged 79.

Joseph W. Speight, M.D. Medical College of Alabama, Mobile, 1883, died at his home near Columbus, La., March 17, after a brief illness, aged 53.

Simon A. Hageman, M.D. Pulte Medical College, Cincinnati, 1881, died at his home in Walnut Hill, Cincinnati, March 22, after a long illness.

Seth Cook Comstock, M.D. College of Physicians and Surgeons in the City of New York, 1894, died in New York City, March 27, aged 34.

John W. Hessey, M.D. College of Physicians and Surgeons, Baltimore, 1878, died at his home in Hanesville, Md., March 29, aged 53.

Henry Fisher Camblos, M.D. Jefferson Medical College, Philadelphia, 1881, died at his home in that city, March 26, aged 47.

Frederick W. Byfield, M.D. (Years of Practice, Illinois), 1879, died at his home in Sorento, Ill., March 20, aged 78.

Lester M. Burroughs, M.D. (Years of Practice, Illinois), 1877, died at his home in Batavia, Ill., March 23, aged 80.

Queries and Minor Notes

CAUSES OF IRREGULAR HEART ACTION.

BINGHAMTON, N. Y., March 5, 1906.

To the Editor:—Can you cite any authority who can explain the cause of irregular action of the heart? In one of my male patients the intermissions of the pulse are so irregular that they occur sometimes at every fifth beat, then perhaps at every seventh, and again at longer intervals from eleventh to twentieth. The patient had not been aware of any abnormal action of the heart until five or six years ago, when after assisting in carrying a heavy trunk upstairs it was accidentally discovered that the pulse was intermittent. It might have been, and probably was so before, though the patient had not been aware of it. For perhaps two years this irregularity was present whenever the pulse was counted; then for a year or more the beat was perfectly regular, but then again became irregular, and has continued so up to the present time. The general health has all this time been uniformly good, and the patient has not suffered any inconvenience from this irregularity of the heart's action. I have nowhere seen any satisfactory explanation of this abnormal condition. Can you solve the problem for me?

M.

ANSWER.—Simple arrythmia without determinable organic change about the heart and arteries may be due to hysteria, to the overuse of tobacco or to reflex irritation from remote organs, especially the stomach and the intestine. If the element of hysteria can be

liminated, particular care should be given to the stomach or bowel. Above all, constipation should be counteracted by the use of free evacuations, and careful search should be made for the possible presence of intestinal parasites. Dyspeptic symptoms, particularly flatulency after eating, should be treated according to the ordinary principles that are adopted for the cure of these conditions. Symptomatically, aconite, given in drop doses several times a day, is the best remedy, especially if the arrhythmia is complicated with palpitation. If the symptom is not subjectively perceptible, if it is not due to tobacco nor to organic disease of the heart, if the gastrointestinal tract is performing its function in a normal way and contains no parasites, then the symptom is negligible. The prognosis, so far as restitution to normal conditions is concerned, is doubtful and uncertain. Arrhythmia *per se* is not infrequently discovered by chance, and, when it is not due to any of the above causes, the life expectancy of the individual is generally in no way curtailed by its presence.

ARSENIC IN DIABETES.

EDGERTON, WIS., March 22, 1906.

To the Editor:—In THE JOURNAL, Jan. 13, 1906, page 141, there is a paragraph entitled "Arsenic in Diabetes," which refers to the use of arsenicated waters in the treatment of this disease. Can you give me any further information regarding the waters used, their administration or the literature on the subject? W. W.

ANSWER.—The arsenicated mineral waters used by Verdalle are those of La Bourboule, a watering place in France, near Bordeaux and Cannes. The waters contain 28 mg. of sodium arsenate to the quart, and are equivalent to about 21 drops of Fowler's solution and 3 grains of sodium chlorid with alkaline bicarbonates. These are said to be among the richest hot (140 F.) arsenical waters known. Verdalle found that diabetics who had not been benefited by Vichy and other waters were benefited by moderate doses of the Bourboule waters. He classifies diabetes according as the symptoms indicate insufficiency of the liver, the ordinarily mild cases, or hyperfunctioning of the liver, with very pronounced glycosuria and azoturia, generally accompanied by hypertrophy of the liver. The arsenicated waters are recommended in the latter class, while the alkaline are better for the former. In his article Verdalle gives the details of 64 cases to illustrate the benefit from the Bourboule waters. He reports the improvement to be lasting, and even apparently permanent in many cases. He proceeds very gradually with the waters, never giving large doses. His latest communication is in Archives Gen. de Méd. for March 20, 1906.

DRUGS INTERFERING WITH THE DIAZO REACTION.

WHITING, IND., March 24, 1906.

To the Editor:—1. What drug interferes with Ehrlich's diazo reaction? 2. Is the reaction ever obtained in syphilis, and if so at what stage? E. L. DEWEY.

ANSWER.—1. Burghart states that tannic acid, gallic acid and some iodin preparations, when administered internally, inhibit the diazo reaction of Ehrlich. The tincture of iodin, but not its salts, has this inhibiting power (Arneill). Simon found that naphthalin, when given by the mouth, gives a color "which corresponds exactly to that of the diazo reaction." The statement has been made also that the tincture of opium, cascara sagrada, and hydrastis canadensis give a reaction similar to that of Ehrlich (Burghart), but this is questioned by Arneill, except in the case of the tincture of opium, which may yield a similar color. Bilirubin and urobilin interfere with the test by altering the color picture, but if these substances are removed by sugar of lead or by treating with animal charcoal, the characteristic color may be obtained in suitable urines. What has been said relates to the diazo reaction of Ehrlich, as caused by some unknown substance in certain pathologic urines (e. g., typhoid, measles, acute miliary tuberculosis), and not to numerous other diazo color-reactions which may be obtained by known chemical substances.

2. Syphilis is not one of the diseases cited as giving the reaction. Penzoldt makes a rather vague reference to its occurrence in lues, but other observers have not recorded it. On theoretical grounds, one should not be surprised at its occurrence in a case of febrile secondary syphilis, or in tertiary syphilis with extensive secondary infection. Arneill obtained the reaction in one case of amyloid disease. (See Simon, "Clinical Diagnosis," Lea Brothers, 1904, Arneill, Amer. Jour. Med. Sc., 1900, vol. 119, p. 296).

ELECTRIC LAMPS FOR THERAPEUTIC PURPOSES.

SAN FRANCISCO, March 22, 1906.

To the Editor:—The claims of a certain electric lamp, whereby the actinic rays are concentrated and focused on the part to be treated, are being vigorously pushed in this vicinity by a medical man of much eloquence. A number of subscribers of THE JOURNAL have been approached, and have been solicited to purchase the apparatus, but they are totally uninformed as to its practical value. I can find only one article referring to this method of treatment, that by Dr. A. E. Sterne of Indianapolis, in THE JOURNAL, Feb. 20, 1904. In common with other subscribers, I should like to have your opinion of the value of this method of treatment in certain diseases. ROBERT A. MCLEAN.

ANSWER.—Practically all the so-called therapeutic lamps are incandescent lamps. The incandescent electric light contains almost no actinic rays, and the only effect that is had from it is from the application of heat. It is hard to see what basis there can be for the extravagant claims made for its therapeutic value.

LIQUOR AMMONII ACETATIS.

WAVERLY, MO., March 24, 1906.

To the Editor:—I have found that in country drug stores it is very hard to get good liquor ammonii acetatis. I was told by a hospital pharmacist that it took some ability and pure chemicals to make a good product. Is there any way whereby it may be made up in parts and when needed the requisite quantities combined after the manner of Fehling's solution? Do you know any way to circumvent its deterioration? I believe this valuable old-timer would be revived if it could be more easily made up by the average rural pharmacist. W. C. O'NEAL.

ANSWER.—The United States Pharmacopeia directs that solution of ammonium acetate be made by dissolving 5 gm. ammonium carbonate, translucent and free from white pulverent matter, in 109 c.c. dilute acetic acid. The acetic acid directed is slightly in excess of that required to react with the ammonium carbonate and a solution results containing, besides ammonium acetate, a small amount of acetic acid, to which the acidulous taste is due. Since, however, ammonium carbonate changes in composition when exposed to air and the dilute acetic acid may be too strong or too weak, a solution may result which either is strongly acid or else alkaline and bitter. When means to determine the quality of the ammonium carbonate and acetic acid are not available, the following procedure will be found satisfactory: To the dilute acetic acid, add the ammonium carbonate in small pieces until further additions no longer cause active effervescence. This solution should have a faintly sour taste; if its taste be found to be strongly acid, more ammonium carbonate, or if alkaline and bitter, more acetic acid, must be added. With a little practice, the sense of taste will be a very good indication of the quality of this solution. A solution which, on standing, has become alkaline, may be at least partially restored by the addition of sufficient acetic acid to produce a solution of mildly acid taste. The practice of keeping on hand separate solutions of acetic acid and of ammonium carbonate is fairly satisfactory if the amount required of each solution to produce this faintly acidulous solution is determined as just indicated.

The Public Service

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending March 31, 1906:

Crosby, Wm. D., surgeon will, at the expiration of his present leave of absence, proceed to Vancouver Barracks, Washington, for duty.

Morse, Charles F., asst.-surgeon, will, at the expiration of his present leave, proceed to Fort Howard, Md., for duty.

Wilson, Compton, asst.-surgeon, relieved from duty at Fort Howard, Md., and ordered to Fort Sheridan, Ill., for duty.

Marrow, Charles E., asst.-surgeon, relieved from duty at Fort Sheridan, Ill., and ordered to Fort Monroe, Va., for duty.

Hanner, John W., asst.-surgeon, will, at the expiration of his present leave, proceed to West Point, N. Y., for duty.

Huggins, John B., asst.-surgeon, relieved from duty in the Army Transport Service, and will proceed to Manila, P. I., for duty on transport sailing from San Francisco, Cal., March 26, 1906.

Chidester, W. C., asst.-surgeon, advanced from rank of first lieutenant to that of captain, to date from March 24, 1906.

Ashford, B. K., asst. surgeon, relieved from duty at Henry Barracks, Cayey, Porto Rico, and from further special duty under the governor of Porto Rico, to take effect April 1, 1906, and will proceed to and take station at Washington Barracks, Washington, D. C.

Turrill, Henry S., brigadier general, appointed brigadier general, U. S. Army, to rank from March 28, 1906.

Moseley, E. B., asst.-surgeon general, promoted to rank of Colonel, to date from March 17, 1906.

LaGarde, Louis A., deputy surgeon general, promoted to rank of lieutenant colonel, to date from March 17, 1906.

Straub, Paul F., surgeon, promoted to rank of major, to date from March 17, 1906.

Turrill, Henry S., brigadier general, retired from active service, March 29, 1906.

Whitmore, E. R., asst.-surgeon, assigned to duty at Fort Warren, Mass.; order suspended until return of Major Charles Richard, surgeon, to Fort Jay, N. Y.

Heizmann, Charles L., asst.-surgeon general, relieved from duty in S. G. O., Washington, D. C., April 20, 1906, and ordered to San Francisco, Cal., for duty as chief surgeon, Department of California, and Superintendent of the Army Transport Service, relieving Lieut. Col. Gen. H. Torney, deputy surgeon general.

Harvey, Philip F., asst.-surgeon general, relieved from duty as chief surgeon, Department of the Lakes, May 1, 1906, and ordered to Governor's Island, N. Y., for duty at chief surgeon, Department of the East, relieving Colonel Valery Havard, asst. surgeon general.

Havard, Valery, asst.-surgeon general, relieved from duty as chief surgeon, Department of the East, and will repair to Washington, D. C., and report in person to the Surgeon General of the Army for duty in his office, and as president of the faculty of the Army Medical School and president of the Army Medical Board.

Cowper, H. W., asst.-surgeon, relieved from duty at Washington Barracks, D. C., and ordered to Plattsburg Barracks, N. Y., for duty.

Woodbury, F. T., asst.-surgeon, leave of absence extended 20 days.

McMillan, Clemens W., contract surgeon, ordered from Fort Trumbull, Conn., to Fort Terry, N. Y., for temporary duty.

Hall, Henry M., contract surgeon, granted an extension of one month to his leave of absence.

Gardner, Fletcher, contract surgeon, relieved from duty at Fort Crook, Neb., and ordered to duty at Fort Michie, N. Y.

McMidan, Clemens W., contract surgeon, relieved from duty in the Department of the East, and ordered to duty at Fort Crook, Neb.

Whitney, Walter, contract surgeon, relieved from duty at Fort Crook, Neb., and ordered to Fort Terry, N. Y., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending March 31, 1906:

Traynor, J. P., P. A. surgeon, from the Naval Hospital, Boston, April 10, and ordered to the *Southery* and to additional duty at the Navy Yard, Portsmouth, N. H.

Munson, F. M., asst.-surgeon, from the *Lancaster*, April 12, and ordered to the Naval Medical School, Washington, D. C., for instruction.

Shaw, asst.-surgeon, from the *Southery*, April 11, and ordered to the Naval Medical School, Washington, D. C., for instruction.

Backus, J. W., asst.-surgeon, from the *Hancock*, April 12, and ordered to the Naval Medical School, Washington, D. C., for instruction.

Jenness, R. F., asst.-surgeon, from the Naval Hospital, Navy Yard, N. Y., April 12, and ordered to the Naval Medical School, Washington, D. C., for instruction.

Marshall, E. R., asst.-surgeon, from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Station, Guantanamo, Cuba, and to additional duty on the *Monongahela*, sailing from New York, April 6.

Foster, T. G., asst.-surgeon, from the Naval Medical School, Washington, D. C., March 31, and ordered to the *Chicago*.

Shook, F. M., asst.-surgeon, from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Hospital, Mare Island, Cal.

Reed, T. W., asst.-surgeon, from Naval Medical School, Washington, D. C., March 31, and ordered to the Navy Yard, New York, April 10.

Hoen, asst.-surgeon, from Chicago, and ordered home to await orders.

Nelson, H. T., Jr., asst.-surgeon, from Naval Medical School, Washington, D. C., and ordered to the Naval Academy, April 10.

Pugh, W. S., Jr., asst.-surgeon, from Naval Station, Guantanamo, Cuba, and ordered home to wait orders.

Hathaway, G. S., asst.-surgeon, McConnon, G. H., asst.-surgeons, from Naval Medical School, Washington, D. C., March 31, and ordered to the *Constellation*.

Taylor, J. L., asst.-surgeon, from Naval Medical School, Washington, D. C., March 31, and ordered to the *Yankee*, sailing from New York, April 4.

Olson, G. M., Evitinge, E. O. J., Sellers, F. E., asst.-surgeons, from Naval Medical School, Washington, D. C., March 31, and to Asiatic Station, sailing from San Francisco, April 14.

Manger, C. B., asst. surgeon, from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Training Station, San Francisco.

Landon, M. E., asst.-surgeon, from Naval Medical School, Washington, D. C., March 31, and ordered to the Naval Station, Tutuila, Samoa.

Dean, F. W. S., Dykes, J. R., asst.-surgeons, from the *Oregon*, and ordered to Washington, D. C., for special duty, thence home to wait orders.

Aloken, E. G., asst.-surgeon, from Naval Station, Tutuila, Samoa, and ordered home to wait orders.

Rossiter, P. S., asst.-surgeon, from Naval Station, Honolulu, H. I., and ordered home to wait orders.

White, E. C., Brooks, F. H., Warner, R. A., Stalnaker, P. R., Reed, E. C., Mears, J. R., Woods, E. L. asst.-surgeons, from the Naval Medical School, Washington, D. C., March 31, and directed to wait orders.

Huntington, E. O., surgeon, discharged from treatment at Naval Hospital, N. Y., and ordered to the Naval Recruiting rendezvous, New York, N. Y., April 12.

Kerr, D. H., surgeon, ordered to Naval Medical School, Washington, D. C., April 14, for instruction.

Marsteller, E. H., surgeon, to Naval Recruiting Station, St. Louis.

Asserson, F. A., P. A. surgeon, from Navy Yard, New York, April 12, and to Naval Medical School, Washington, D. C., April 14, for instruction.

Monroe, J. M., P. A. surgeon, from the Naval Recruiting Station, New York, to Naval Medical School, Washington, D. C., April 14, for instruction.

Webb, E. R., P. A. surgeon, from the Naval Academy and to the Naval Medical School, Washington, D. C., April 14, for instruction.

Meyers, G. M., asst. surgeon, from the *Constellation* and to the Naval Medical School, Washington, D. C., April 14, for instruction.

Nichols, R. H., asst. surgeon, from the Naval Recruiting Station, St. Louis, and to Naval Medical School, Washington, April 14, for instruction.

Wynn, C. K., acting asst. surgeon, from the Naval Hospital, Washington, D. C., and ordered home to wait orders.

Smith, C. G., P. A. surgeon, from the Naval Hospital, Mare Island, Cal., April 10, and to the Naval Station, Honolulu, H. I., sailing from San Francisco, April 14.

Guthrie, J. A., surgeon, having been examined by a retiring board and found incapacitated for active service on account of disability incurred in the line of duty, is retired from active service, March 23, 1906, under the provisions of Section 1453, Revised Statutes.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending March 28, 1906:

Austin, H. W., surgeon, detailed as delegate on part of the United States to represent the service at the meeting of the Fifteenth International Congress of Medicine, to be held at Lisbon, Portugal, April 19-25, 1906.

Stansfield, H. A., P. A. surgeon, granted leave of absence for three days under Paragraph 191 of the Regulations, from March 16, 1906.

Francis, Edward, P. A. surgeon, directed to proceed to New Orleans, La., for special temporary duty, on completion of which to rejoin his station.

Ebersole, E. E., asst.-surgeon, relieved from duty at San Francisco and directed to proceed to Manila, P. I., reporting to P. A. Surgeon V. G. Heiser, chief quarantine officer, for duty.

Bailey, C. A., acting asst.-surgeon, excused without pay for three days from March 25, 1906.

Frick, John, acting asst.-surgeon, transferred from Tampico, Mexico, to Vera Cruz, Mexico, for duty in office of American consulate.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for 11 days from March 5, 1906, on account of sickness.

Woods, C. H., pharmacist, granted three days' leave of absence, from March 17, 1906, under Paragraph 210 of the Regulations.

Carlton, C. C., pharmacist, granted one day's leave of absence under Paragraph 210 of the Regulations.

CASUALTY.

Richardson, T. F., P. A. surgeon, died in New Orleans, March 19, 1906.

RESIGNATION.

Stephenson, Charles W., pharmacist, resigned as pharmacist of the first class, to take effect April 11, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general, Public Health and Marine-Hospital Service, during the week ended March 30, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, March 3-17, 3 cases; San Francisco, March 10-17, 7 cases, 1 death.
Colorado: Idaho Springs, Feb. 1-28, 1 case.; South Canon, 1 case.
Florida: Jacksonville, March 17-24, 4 cases.
Illinois: Chicago, March 17-24, 1 case.
Kansas: General, Jan. 1-31, 125 cases, 1 death.
Kentucky: Covington, March 17-24, 2 cases.
Louisiana: New Orleans, March 17-24, 7 cases.
Maryland: Baltimore, March 17-24, 3 cases.
Michigan: Ann Arbor, March 17-24, 1 case; Detroit, 1 case.
Mississippi: Gulfport, March 19-26, 1 case; Natchez, March 10-17, 1 case.
Missouri: St. Louis, March 17-24, 7 cases.
New York: New York, March 17-24, 1 case.
Ohio: Cincinnati, March 16-23, 5 cases.
Pennsylvania: Pittsburg, March 17-24, 1 case.
Tennessee: Memphis, March 17-24, 14 cases.
Utah: General, Feb. 1-28, 232 cases; Salt Lake City, March 3-17 39 cases.
Virginia: Petersburg, March 1-26, 21 cases.
Washington: Spokane, March 10-17, 1 case.
West Virginia: Wheeling, March 17-24, 5 cases.
Wisconsin: Appleton, March 17-24, 2 cases; Beloit, March 10-24, 2 cases.

SMALLPOX—INSULAR.

Hawaii: Honolulu, March 12, 1 on S. S. *Coptic*.
Philippine Islands: Manila, Feb. 3-10, 2 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, Feb. 3-17, 7 cases.
Brazil: Pernambuco, Feb. 1-15, 21 deaths.
Canada: Toronto, Feb. 24-March 3, 1 case.
China: Hongkong, Jan. 26-Feb. 3: 9 cases, 7 deaths; Shanghai, Feb. 10-17, 2 cases, 3 deaths.
France: Paris, Feb. 24-March 10, 21 cases.
Gibraltar: Feb. 25-March 11, 11 cases, 4 deaths.
Great Britain: Glasgow, March 9-16, 2 deaths; Liverpool, March 3-10, 3 cases; London, 1 case.
Greece: Athens, Feb. 20-27, 3 deaths.
India: Calcutta, Feb. 10-17, 118 deaths; Bombay Feb. 20-27, 7 deaths; Karachi, Feb. 18-25, 52 cases; 13 deaths; Rangoon, Feb. 10-17, 103 deaths; Madras, Feb. 17-23, 20 deaths.
Spain: Barcelona, March 1-10, 5 deaths.

YELLOW FEVER—FOREIGN.

Mexico: Merida, March 4-10, 2 cases.
Nicaragua: Managua, Feb. 10-24, 2 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, Jan. 26-Feb. 10, 7 cases, 8 deaths; Provinces, Feb. 2-10, 195 cases, 165 deaths.

CHOLERA—FOREIGN.

India: Bombay, Feb. 20-27, 1 death; Calcutta, Feb. 10-17, 79 deaths; Rangoon, 5 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Jan. 27-Feb. 10, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

Brazil: Bahia, Feb. 22, present.
China: Hongkong, Feb. 2-10, 6 cases, 6 deaths.
India: Bombay, Feb. 20-27, 160 deaths; Calcutta, Feb. 10-17, 32 deaths; Karachi, Feb. 18-25, 19 cases, 11 deaths; Madras, Feb. 17-23, 1 death; Rangoon, Feb. 10-17, 3 deaths.
Paraguay: Asuncion, March 28, present.
Peru: Callao, Feb. 17-26, 1 death; Lambayeque, 3 cases, 1 death; Pisco, 1 case; Mollendo, 3 cases, 2 deaths; Paita, 5 cases, 2 deaths; Trujillo, 31 cases, 11 deaths.

Book Notices

Psychiatry. A Text-book for Students and Physicians, by S. Paton, M.D. Cloth. Pp. 618. Price, $4.00. Philadelphia: J. B. Lippincott Co. 1905.

Within the past few years there has been a decided stimulation of interest in mental disorders, if we are to judge by the output of textbooks on the subject. This candidate for favor is noteworthy in many respects, coming, as it does, from one of the chief centers of scientific medicine in the country and from an author who has already made himself known by scientific original work in this department. It may be fairly expected, therefore, to give the results of the best modern acquisitions as seen from the author's point of view, which includes the latest results of pathology and the newer psychology, so-called, but fully admitting, also, their limitations.

Insanity is regarded by him as a disease of the brain, with some qualifications. Thus he considers that we can not call myxedematous insanity, dependent on disturbed thyroid function, strictly a disease of the brain—a distinction, it seems to us, less practical than theoretical. The symptoms of insanity take up the greater part of the introductory chapters, that is, the non-somatic symptoms, which are very fairly well covered in these chapters. Then follows an instructive chapter on the examination of patients, concluding with details in regard to the examination of the cerebrospinal fluid, a procedure which the author says is indicated in all doubtful cases, especially when it is necessary to differentiate between functional and organic disorders, though the exact significance of the findings can not always be clearly defined.

In the chapter on treatment, special stress is laid on hydrotherapy and the "rest in bed" treatment which, according to the author, should be a routine method. The ideal hospital for the insane is described in the succeeding chapter, and this should be distinguished from the ordinary asylum or state hospital which is the only recourse for the majority in most parts of the country. It is more strictly a curative institution of limited capacity and adapted for recent and hopeful cases. The hospital treatment should be always to the fore and the attendants have general hospital training, as well as the special instruction required for those who care for the mentally diseased. There is no question as to the value of such institutions and their multiplication in the great centers, and especially in connection with the institutions for medical instruction, is in every way desirable. But for the great mass of the insane who, for obvious reasons, do not come under the head of curable cases, the larger institutions will still be the ones chiefly available.

The causes of insanity are very well discussed in a special chapter, and a few pages are given to the subject of classification, in which the author follows a system of his own, adopting, however, the popular Kraepelin groups of "maniac depressive" insanity and "dementia præcox." The descriptions of the different forms are generally very clear and complete. Koraskow's disease receives more attention than has been given it in most recent textbooks and is described in connection with the confusional types to which it properly belongs. A little more space, it seems to us, might have been given to this class of cases from autointoxication or exhaustion, constituting, as they do, a very respectable portion of the really curable forms of insanity, and, therefore, those which would be most suited for the treatment in special psychiatric hospitals. The very comprehensive groups of "maniac depressive" insanity and "dementia præcox" receive full treatment and an almost equal space is given to the subject of paresis.

Paranoia is narrowed down to a small residual group remaining after the inclusion of most of its formerly recognized types under other heads, and it seems to us that the author's experience must have been somewhat different from that of other alienists as regards this particular and very important type of insanity. He gives as an example of the confusion of ideas on this subject the conceptions of Sander's so-called "original paranoia." It seems to us that if there is any clinical type of derangement that deserves recognition it is this, though it may be questioned whether it properly belongs under the head of true systematized delusional insanity. Typical cases are not very common and in a limited clinic like that of Kraepelin they may be rare, but they are very striking when they occur. The chapter on the paranoia group seems to be as little satisfactory as any in the book.

Taking the work as a whole, it is a valuable addition to psychiatric literature and one which no alienist can well neglect. The author is modern in his ideas and his book contains a wealth of references, especially to the German literature of the subject. A practical idea indicated by the author in his preface, is that the study of the subject of psychiatry will tend more or less directly toward enriching the brain power of mankind, and that its results will have an important bearing as applied to educational and other questions of the day.

Nasal Sinus Surgery, with Operations on Nose and Throat. By B. Douglass, M.D. Illustrated, with 67 half-tone and colored plates. Cloth. Pp. 264. Price, $2.50 net. Philadelphia: F. A. Davis & Co., 1906.

This volume will be welcomed by rhinologists and senior students. The anatomy of the sinuses and their relations to the nasal cavities, orbits and the brain are illustrated by many fine photographic half-tones of anatomic preparations. The descriptions are enforced by iteration and reiteration and by measurements of numerous specimens. The various methods of examination used in making a diagnosis of sinus disease are clearly described. Most of the standard operations on the sinuses, both conservative and radical, are outlined. The author lays especial stress on the danger of enlarging the nasofrontal duct by intranasal operation, giving five reasons for his objection. Whether the recently perfected operation by means of a flexible trephine made to follow a probe will overcome his objection is in doubt, as he did not refer specifically to this method. In the chapter on operations for deflection and exostosis of the septum the author points out that in cases of combined deflection and thickening a careful removal of the latter will in many cases render an operation for the deflection unnecessary. The subject exostosis is also considered in connection with synechiæ. Ten pages are devoted to the description of operations for the relief of nasal deformities, and a detailed description of making paraffin injections for the relief of the saddlenose deformity and the dangers to be avoided are given. It will doubtless help the profession to appraise this procedure at its true value and to rescue it to a degree from the advertising quack. The author's tonsil needle to suture the pillars of fauces to control tonsillar hemorrhage is figured and the procedure is illustrated with a cut. Laryngotomy and tracheotomy are carefully described and beautifully illustrated with colored plates and a frontispiece. The book is creditable to both author and publisher.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George F. Butler, Ph.G., M.D., Associate Professor of Therapeutics in the College of Physicians and Surgeons, Chicago. Fifth Edition, thoroughly revised, by Smith Ely Jelliffe, M.D., Ph.D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia University (College of Physicians and Surgeons), New York. Octavo of 694 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, $4.00 net; Half Morocco, $5.00 net.

This is the fifth edition of Dr. Butler's well-known work, which has been thoroughly revised to conform to the new Pharmacopeia. The general arrangement of the text has been changed so that drugs whose predominant action is on any one system of the body are grouped together. As the author states, any system of grouping has its drawbacks, but this arrangement is both practical and useful. After a brief introduction, pharmacology and general therapeutics are discussed, including modes of introduction of remedies, untoward effects of drugs, classification of medicines, and weights and measures. Pharmaceutical preparations are then considered at length, including solutions, solid and liquid mixtures, extracts, and preparations for external use. Succeeding chapters deal with drugs acting on the nervous system, on the circulatory system, those acting on micro-organisms, volatile oils, resins, and balsams, antipyretics, alteratives, astringents, and drugs acting on particular organs. The book concludes with a chapter on prescriptions which is of special interest and should be of value

to all practicing physicians. Under this head the author considers incompatibility, antagonism, estimation of amounts, and the language and grammatical construction of the prescription. The book is commended as one of the most practical for the general practitioner.

HANDBOOK FOR ATTENDANTS ON THE INSANE, with an appendix giving the Regulations for the Training and Examination of Candidates for the Certificate of Proficiency in Nursing of the Medico-Psychological Association of Great Britain and Ireland. Fourth Edition. Reprinted, with Revised Regulations. Published by the authority of the Medico-Psychological Association. Cloth. Pp. 158. Price, 50c net. Chicago: W. T. Keener & Co.

This, the authorized book of the British Medico-Psychological Association for attendants on the insane, appears to meet very fairly the need which has called it forth. Not all the duties of an attendant are or can be taught by books. Natural fitness and experience are indispensable. We may say of an attendant for the insane, still more than of a trained nurse, that he is born, not made. The book also does not completely cover the course which attendants in British hospitals for the insane are called on to take up and study, but it is an essential text-book. Its republication in this country is a matter for congratulation, for, though we have some works on this subject, an opportunity for choice is always desirable. The fact that each edition is revised by committees including some of the best known and most experienced alienists of Great Britain is a strong recommendation.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By E. H. Bartley, B.S., M.D., Ph.G. Sixth Edition, thoroughly revised; 90 illustrations. Cloth. Pp. 534. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1905.

When any text-book arrives at its sixth edition it has demonstrated its value and should be considered beyond the field of the reviewer. While teachers of chemistry will differ as to the best method of presenting this subject, especially as regards the consideration of chemical theories, and while it is to be regretted that the author has considered it undesirable to bring the work in accord with modern conceptions of chemistry, all must concede that Dr. Bartley's long experience as a teacher has enabled him to present the subject in an admirable manner. Beginning with chapters on heat, light, electricity and the chemical theories, the author passes over to the consideration of inorganic and organic compounds, and finally takes up physiologic chemistry, to which more than 150 pages are devoted, and succeeds in presenting this vast material in a clear, concise and logical manner. Few text-books on chemistry designed for medical students compare favorably with Dr. Bartley's work.

LECTURES ON TROPICAL DISEASES, Being the Lane Lectures for 1905, Delivered at Cooper Medical College, San Francisco, U. S. A., August, 1905, by P. Manson. Cloth. Pp. 230. Price, $2.50 net. Chicago: W. T. Keener & Co. 1905.

Sir Patrick Manson's lectures present the chief facts concerning some of the important tropical diseases in a most fascinating and instructive manner. Seldom are the complex facts and conditions in the mode of infection and dissemination of tropical diseases so stated as to interest the reader in the degree achieved in these lectures. The eminent lecturer's own epoch-making influence and work in unraveling the etiology of filariasis and malaria and other tropical diseases are familiar to all students of medicine. His discussion in these lectures of problems of tropical medicine, still unsolved, of the future influence of the Panama canal, and of other questions of importance reveals the comprehensive grasp and imagination of the master.

MAN AND HIS POISONS. A Practical Exposition of the Causes, Symptoms and Treatment of Self-Poisoning. By A. Abrams, A.M., M.D. Illustrated. Cloth. Pp. 268. Price, $1.50. New York: E. B. Treat & Co., 1905.

In the preface the author states that self-poisoning has advanced from a plausible and fascinating theory to a verity. In the first chapter he reviews the various conceptions of life and touches on the investigations of Loeb. In succeeding chapters he discusses the history of autointoxication; the modern views of disease; the influence of fatigue mental and physical on this condition; the toxicology of the emotions and sleep, the physics and chemistry of thought; symptoms of self-poisoning; psychology of living in relation to prevention and cure of autointoxication.

State Boards of Registration

COMING EXAMINATIONS.

ARKANSAS State Board Medical Society, Little Rock, April 10. Secretary, J. P. Runyan, Little Rock.

MISSOURI State Board of Health, Barnes Medical College, St. Louis, April 10-12. Secretary, J. A. B. Adcock, Warrensburg.

WEST VIRGINIA State Board of Health, Parkersburg, April 10-12, Secretary, H. A. Barbee, Point Pleasant.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, D. C. April 12. Secretary, William C. Woodward, Washington, D. C.

MISSOURI State Board of Health University Medical College, Kansas City, April 16-18. Secretary, J. A. B. Adcock, Warrensburg.

ILLINOIS STATE BOARD OF HEALTH, Northwestern University Building, Chicago, April 18-20. Secretary, J. A. Egan, Springfield.

District of Columbia January Report.—Dr. William C. Woodward, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral examination held at Washington, January, 1906. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of applicants examined was 16, of whom 13 passed and 3 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Baltimore Med. Coll.	(1905)	77.9
Columbian University	(1903) 78.7,	91.9
Georgetown University	(1905) 84.1,	85.2, 88.7
George Washington University	(1905) 79.4,	82.7, 84.2
Howard University	(1905)	75
New York Homeo. Med. Coll.	(1886)	76
Southern Homeo. Med. Coll.	(1904)	76.2
University of Virginia	(1905)	85.7
FAILED.		
Georgetown University	(1903) 61.8; (1905)	70.8
University of Michigan	(1900)*	

* Absented himself from part of the examination, no percentage assigned.

Illinois January Report.—Dr. J. A. Egan, secretary of the State Board of Health of Illinois, reports the written examination held at Chicago, Jan. 18-20, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of applicants examined was 27, of whom 21 passed and 6 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Miami Med. Coll.	(1895)	90.4
Detroit Coll. of Med.	(1904) 88.4;	92.5
Baltimore University	(1903)	76.9
National Medical University	(1905) 84.6,	90.3
Toledo Med. Coll.	(1904)	76.4
Rush Med. Coll.	(1905) 85.5,	89.2, 91.6
University of Pennsylvania	(1880)	88.4
Illinois Med. Coll.	(1905) 90.6;	(1906) 77.1
Medical College of Indiana	(1897) 84.2;	(1905) 82.6
Hahnemann Med. Coll., Chicago	(1905)	92
Denver and Gross Coll. of Med.	(1905)	88.1
Eclectic Med. Inst., Cincinnati	(1903)	76.8
University of Naples	(1890)	82.1
Bellevue Hospital Med. Coll.	(1876)	75
Ohio Med. Coll.	(1878)	85.2
FAILED.		
College of P. and S., Keokuk	(1905)	70.1
College of Med. and Surg., Chicago	(1904)	66.9
Barnes Med. Univ.	(1904)	73
American Coll. of Med. and Surg.	(1906)*	
American Med. Miss. Coll.	(1904)*	
National Medical Univ.	(1906)*	

* Took an incomplete examination and no percentage was assigned.

Medical Organization

California.

HANFORD MEDICAL SOCIETY. At a meeting of the physicians at Hanford, February 15, Dr. Philip Mills Jones, San Francisco, delivered an address in which he urged the benefits of organization and made an earnest plea to those present to maintain the regular meetings of the society and to keep up the attendance.

Georgia.

COWETA COUNTY MEDICAL ASSOCIATION. This association was organized at Newnan, February 21, by Dr. W. L. Fitts, Carrollton, councilor for the fourth district. The following officers were elected: Dr. Thomas J. Jones, Newnan, president; Dr. Theodore B. Davis, Newnan, vice president; Dr. T. S. Daley, secretary, and Dr. R. F. Foster, treasurer.

Kansas.

MIAMI COUNTY MEDICAL SOCIETY.—Physicians of Miami County met at Paola with Dr. J. E. Sawtell, Kansas City, councilor for the seventh district, and organized a county society on the standard plan, with the following officers: Dr. Lyman L. Uhls, Osawatomie, president; Dr. J. Henry Haldeman, Paola, vice-president; Dr. John D. Walthall, Paola, treasurer, and Dr. J. Henry Haldeman, delegate to the state medical society.

HOPKINS COUNTY MEDICAL SOCIETY.—At a meeting of the physicians of Hopkins County, in Madisonville, February 15, the councilor of the second district delivered an address setting forth the benefits of organization. Following this the society was reorganized on the standard plan and the following officers elected: Dr. William K. Nesbitt, Earlington, president; Dr. A. W. Davis, Morton's Gap, vice-president, and Dr. James W. Long, Madisonville, secretary and treasurer.

OHIO COUNTY MEDICAL SOCIETY.—This society was recently organized with the following officers: Dr. Eugene B. Pendleton, Hartford, president, and Dr. A. Francis Stanley, Hartford, secretary and treasurer.

Michigan.

CALHOUN COUNTY MEDICAL SOCIETY.—To facilitate the war against unlicensed practitioners, which this county society undertook some time ago, the society has become incorporated, with the following officers: President Dr. Herbert A. Powers; secretary, Dr. Eugene Miller, and treasurer, Dr. Clarence C. Vary, all of Battle Creek.

New Hampshire.

CHESHIRE COUNTY MEDICAL SOCIETY.—At the midwinter meeting of this society, held in Keene, February 13, the constitution and by-laws were revised so as to conform to those proposed for county societies by the American Medical Association.

Texas.

FRISCO-CENTRAL MEDICAL SOCIETY.—At the joint meeting of the medical societies of Erath, Comanche and Hamilton counties, held in Dublin early this month, a new body was organized to comprise in its membership all physicians on and near the lines of the St. Louis & San Francisco and Texas Central railways in these counties. The following officers were elected: Dr. James F. McCarty, Comanche, president; Drs. William E. Hubbert, Hico; Thomas J. Farmer, Dublin, and G. H. Chilton, Comanche, vice-presidents, and Dr. O. A. Craigwall, Stephenville, secretary.

RED RIVER COUNTY MEDICAL ASSOCIATION.—This association was organized at Clarksville, March 9, on the standard plan, with the aid of Dr. Holman H. Taylor, Marshall, councilor of the Fifteenth district. The following officers were elected: President, Dr. Charles T. Clark, Clarksville; vice-president, Dr. Robert Jones, Rosalie; secretary and treasurer, Dr. J. T. Hutchinson, and censors, Drs. E. S. Chambers, English; Nowlin Watson, Clarksville, and Claud Scott.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

Tennessee State Medical Association, Memphis, April 10.
Medical Association of the State of Alabama, Birmingham, April 17.
Medical Society of the State of California, San Francisco, April 17-19.
Florida Medical Association, Gainesville, April 18.
Medical Association of Georgia, Augusta, April 18.
Mississippi State Medical Association, Jackson, April 18.
South Carolina Medical Association, Columbia, April 18.
State Medical Association of Texas, Fort Worth, April 24-26.
Arizona Medical Association, Phoenix, April 24-25.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 24-26.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Eighteenth Semi-Annual Meeting, held at St. Joseph, Mo., March 22-23, 1906.

The President, DR. JOHN E. SUMMERS, Omaha, in the Chair.

Surgical Treatment of Goiter.

DR. CHARLES H. MAYO, Rochester, Minn., based his remarks on 200 operations. He said that large cystic and encapsulated tumors within the gland can be enucleated to save useful gland substance. In exophthalmic goiter one lobe and the isthmus should be removed, and if there is recurrence of symptoms, the lower part of the remaining lobe should be taken away. In the worst cases this should be done at the primary operation. Operation is no longer experimental; medical and serum-therapy are still under discussion. Fearing malignancy, early operations are recommended in irregular and hard tumors. More than one-half the operations performed on the thyroid gland are those of expediency. Is is, therefore, necessary that a low mortality rate accompany operations for goiter. During the last fifty years the mortality has been reduced from 40 per cent. to a fraction of 1 per cent.

DISCUSSION.

DR. L. L. MCARTHUR, Chicago, said that Rogers of New York presented in THE JOURNAL A. M. A., Feb. 17, 1906, a promising method of treatment of the exophthalmic type of goiter. He was led to his investigations through the sufferings of his wife. When her condition became so severe that it seemed she was about to die, he became desperate enough to try some serum experiments. He made emulsions of recently excised goiters of the exophthalmic type and injected them into rabbits. From the rabbits he obtained a serum, one injection of which practically annihilated all the symptoms of goiter in his wife. The condition of sixteen patients treated was so alarming when the injection was made that as yet he has hesitated to put it into the hands of the profession, and has refused to use it, except in those cases that are deemed so extremely desperate that even the surgeon prefers not to undertake operative intervention.

DR. T. C. WITHERSPOON, St. Louis, Mo., has operated in eighteen cases of exophthalmic goiter; in seventeen with local anesthesia. About five weeks ago he removed an exophthalmic goiter from a patient suffering at the same time from a malignant disease of the breast. Her pulse averaged 140. One week after removal of the goiter she was in good condition. Pulse dropped to 95. He used a general anesthetic (ether), and removed the breast radically, and within five hours after the operation her pulse was 170. While on the table her condition was good. The amount of blood lost was small. There was no reason for the high pulse, except the general anesthetic. After that time the pulse quickly dropped, and she recovered. His fear has always been the ill-effect of general anesthesia.

DR. MAYO said that Dr. Rogers has undoubtedly developed a cytolysin for the destruction of the thyroid. Rogers has had twelve cases of more or less severe types of exophthalmic goiter, in many of which the results are favorable, while in others no benefit has resulted.

Pathology of the Morphin Habit.

DR. S. GROVER BURNETT, Kansas City, Mo., condemned (1) the acute hyoscin poisoning method, attended by coma, delirium and reactionary prostration of both mental and physical forces; (2) the abrupt disuse of the drug, as is enforced in jails, penal institutions and asylums; (3) the rapid withdrawal of the drug during four to eight days; (4) the so-called slower reduction requiring fourteen to twenty days. In his opinion the foregoing methods can only be applied to selected cases. Burnett gave at considerable length his preferred method of treatment.

DISCUSSION.

DR. F. E. COULTER, Omaha, said that in cases of morphin habit or drug addiction it is very essential to have the hearty co-operation of patient before one is going to be successful in any line of treatment he may inaugurate. The patient should be placed in pleasant surroundings. His associates must be congenial. The nurse must be satisfactory to the patient. Coulter employs what is known as the physiologic method.

Is Vaginal Cesarean Section Justifiable?

DR. PALMER FINDLEY, Omaha, drew the following conclusions: 1. Less time is consumed in delivering the fetus by the ab-

dominal route. 2. Greater accuracy is assured in surgical cleanliness by the abdominal route. 3. The abdominal incision is wholly under control of the operator, whereas in the extraction of the fetus per vaginam, the incision may extend beyond the control of the operator, as it has in more than one case, and with fatal results from hemorrhage and infection. 4. In an abdominal Cesarean section opportunity is afforded of rendering the patient sterile by resecting the tubes when thought advisable, and various lesions, such as adhesions, tumors of the uterus demanding hysterectomy, bands as the result of ventrofixation, and diseased appendages, can be dealt with. 5. The abdominal route assures the fetus of the greatest consideration, inasmuch as the application of forceps and the turning of the child in utero are necessarily attended by dangers to the fetus. 6. Rupture of the uterus in subsequent pregnancies through the scar of a Cesarean section is a not uncommon accident, and it is apparent that since the large majority of ruptures of the uterus are in the lower uterine segment, a scar at this point will more likely be disposed to rupture than one located in the fundus. In the light of reported cases, and judging by the results obtained in the use of other well-established methods of delivery in cases similarly indicated, vaginal Cesarean section is not destined to find general favor with trained obstetricians. The legitimate scope of the operation will be so limited that it will be little practiced.

Surgical Treatment of Total Prolapse of Uterus.

Dr. C. O. Thienhaus, Milwaukee, Wis., prefers those methods which make use of the body of the uterus as a support to the bladder, because thereby a recurrence of the accompanying cystocele, which so often takes place after other methods of surgical procedure, is made absolutely impossible. He described at length a method used by himself, a modification of the Schauta and Dührssen operations, and reported nine cases on which he had operated, with their results.

DISCUSSION.

Dr. A. H. Cordier, Kansas City, Mo., sees no objection to departing from some of the older methods for holding the uterus in proper position. If the patient has passed the menopause, and does not expect to become pregnant again, bring the uterus up and anchor it to the anterior abdominal wall. It has been his custom to do a ventrofixation in the old cases, and doing complete repair of the perineum, both anterior and posterior, not simply making a skin flap operation in the vagina, but repairing the muscles, re-establishing them, and putting the uterus in normal position.

Dr. O. Beverly Campbell, St. Joseph, Mo., said that there is a class of cases in which the procidentia has remained for a long period of time, in which the vaginal mucosa has ulcerated to such an extent that it is almost destroyed, and he has seen a few such cases, especially women, say 65 years of age, old maids or widows, where matrimony does not enter as a factor, in which he believes the more radical operation of Prof. A. Martin removing the entire vagina and uterus, and closing up the opening, would give better results than the operation described by Dr. Thienhaus. Ventrosuspension for the cure of procidentia has been a most unsatisfactory procedure.

Tumors of the Cerebellum.

Dr. F. E. Coulter, Omaha, reported a case, and discussed the question of neoplastic growths in the posterior fossa of the skull, taking up the etiology, symptomatology and diagnosis, the object being to emphasize the more common signs and symptoms of disease in this location, thus making of more practical importance the questions of diagnosis and treatment.

Blastomycetic Dermatitis.

Dr. William Frick, Kansas City, Mo., reported three cases. The histopathology of the three cases was practically the same as that described by other observers. The most characteristic thing appears to him to be the miliary abscesses which are found both in the epidermis and in the corium. It is in these abscesses that the organism is most abundantly found. Another interesting point is the large number of giant cells resembling those seen in tuberculosis. Since these cases follow a fairly definite clinical course, there seems no reason why a clinical diagnosis should not be made, which diagnosis, for the present, at least, should be corroborated by the microscope. Given a case beginning as a papule or pustule, with a considerable inflammatory zone surrounding it, which instead of improving when the pus which first forms is discharged, extends this zone of inflammation and shows near the surface the formation of miliary abscesses, the case may be expected to be one of blastomycosis. This may then be verified by microscopic findings in the pus or in small pieces of tissue, or both. The treatment consists in excision, the administration of iodin compounds, and the use of the x-ray. Since the point of entrance is usually some exposed surface of skin, if an early diagnosis is made, a complete excision will usually end the case, and is the quickest and most satisfactory method of disposing of it. This disease, while confined to the skin, may be considered a curable affection, but if it becomes systemic, it is beyond the reach of remedies now in vogue.

Dr. Charles G. Geiger, St. Joseph, Mo., said that the clinical aspects of the disease may be mistaken for three other skin affections tuberculosis verrucosa cutis, fungous syphiloderm, and lupus vulgaris. He discussed the differential diagnosis of these affections.

Intestinal Tuberculosis and Its Surgery.

Dr. L. L. McArthur, Chicago, said that it has been demonstrated that while the vast majority of cases of intestinal tuberculosis are secondary, there yet exists a goodly proportion of cases of primary intestinal tuberculosis without other discoverable lesions. With the reopening of the question which has heretofore been accepted as settled, that infection almost invariably occurs through the respiratory tract, the latest and more painstaking observations show that through the intestinal tract a far larger number of cases of infection occur than has been thought or deemed possible. Practically nursing children and milk-fed infants are the only ones afflicted with true primary intestinal tuberculosis, because (1) they are the ones exposed most commonly to infected food; (2) their intestinal tract is less resistant to such invasions.

While Eisenhardt and Fenwick found only 1 in 1,000 cases of autopsy that they considered primary, on the other hand few cases of tuberculosis of the respiratory tract escape ultimate secondary intestinal tuberculosis. Thus Eisenhardt, in his 1,000 autopsies of tuberculous adults, found 563 cases of intestinal infection, of whom 489 had cavities in their lungs. Intestinal tuberculosis is frequently overshadowed by the pulmonary disease. But inasmuch as the presence of cavities determines so regularly the intestinal infection, the absence of cavity will have a decided prognostic value in those cases that clinically come to the surgeon for aid. These will, in the largest proportion of cases, be over 25 years.

The author's study of the literature and his personal experience have led him to the following conclusions: (1) The term primary tuberculosis of the intestines is both clinically justified and often demonstrable on section. (2) In selected cases, though desperate, surgical interference offers reasonable hope. (3) The capacity for withstanding surgical interference is greater for this condition than that which obtains with other abdominal affections of like magnitude. (4) The first symptoms of this disease may begin as and even be mistaken for an appendicitis. (5) Partial or total exclusion will in some cases accomplish the desired results when conditions contraindicate excision. (6) The ulcerative variety may make numerous fistulæ, as in the author's cases. (7) Simple inflammatory processes are apt in a tuberculous subject to become tubercular, and terminate as above. (8) Surgery offers much hope to an otherwise probably fatal issue. (9) Many a case of general abdominal tuberculosis is the end result of a preceding intestinal tuberculosis which might have been at one time operable. (10) Both bovine and human tubercle bacilli, while not identical, are related varieties of one original form. (11) The cutaneous hand infections of butchers is a strong argument against absolute difference.

Postoperative Treatment of Clubfoot.

Dr. M. M. Edmonson, Kansas City, Mo., said that by beginning treatment early the foot can always be corrected by force alone. The soft tissues are stretched easily and the bones that are malformed, especially the astragalus, are soft and cartilaginous, so that they are molded readily to conform to a normal position. At this stage it will require very little force to maintain this position, and it can be accomplished without causing pain. In its new position the foot will develop normally with the rest of the body. The contracted tendons and soft tissues having been stretched, the elongated tendons will become contracted. In maintaining the corrected position at this age, a fixed dressing is probably used more than any other, especially plaster-of-Paris, but in this the ankle joint is immobilized and all the advantages of muscular exercise are lost. It is often difficult to so apply the dressing that the position is as good as that gained by the hand. The Barwell dressing has all the advantages and none of the disadvantages of the plaster-of-Paris or any fixed dressing. It is simple and easily applied.

No case should be cut that can be corrected by force. Following any method of correction some mechanical support is necessary; as the primary cause still exists, some aid must be given in maintaining this muscular balance until nature alone is sufficient, and this has only been reached when the foot can be everted and flexed as easily as it can be everted and extended. Feeling the need of a simple, yet effective retaining force in those cases about four years ago the author devised a brace which he has found more nearly meets all the requirements. The shoe used in connection with the brace is the usual one made for the normal foot. It, however, should be heavy and of the best material. This brace and its method of application were described, followed by the citation of cases.

Indirect Effects of Valvular Lesions.

Dr. W. F. Milroy, Omaha, called particular attention to the wide range of symptoms not obviously connected with the heart. These are associated with the gastrointestinal respiratory, or the nervous system, or are more general, as loss of weight, power of concentration or endurance. The date of origin of the symptoms is uncertain, their duration often many years. Endocarditis, which causes the lesion, is secondary to many general infections. A history of rheumatism suggests an examination of the heart for valvular disease, but in the writer's opinion too much importance is given this infection in the etiology. Valvular disease is of far more frequent occurrence than is generally supposed. Clinical teachers and textbook writers are at fault in not emphasizing sufficiently their indirect effects. Gross errors in diagnosis are of very common occurrence. They suggest the necessity for more attentive study of the art of physical diagnosis by the practitioner, and the wisdom of an invariable rule in making such examinations a part of every diagnosis.

Rupture of the Male Urethra.

Dr. B. A. McDermott, Omaha, said that the indications for surgical interference are not ordinarily clear, but usually present themselves as (1) the history of injury; (2) the escape of blood, either with or without urine, at the meatus; (3) the presence of shock; (4) the gradual appearance of a perineal or suprapubic tumor; (5) if a solution of methylene blue is injected through a catheter through the anterior urethra, it will be found coming out through the perineal opening, if one exists; if there be no external opening it will be found in the perineal tissues. The presence of the above conditions is usually sufficient to warrant surgical interference.

The author made a strong plea for early surgical interference based on the following reasons: (1) In cases of rupture of the urethra presenting the foregoing symptoms, immediate perineal or suprapubic section, with suture of the ruptured ends of the urethra, should be practiced. (2) By this procedure not only are the sufferings of the patient lessened, also the danger of urinary infiltration and abscess, but in a large number of cases the formation of a later stricture may be prevented. (3) In early operation the search for the posterior end of the urethra is much easier than it is later, as the tissues are not so infiltrated and the posterior end is not so retracted. The hemorrhage from the branches of the arteries of the bulb serves as a guide to the end of the canal.

Advances in the Office Treatment of Rectal Diseases.

Dr. R. D. Mason, Omaha, advocated the treatment of all minor rectal diseases by the use of local anesthesia, using weak cocain solutions of 0.5 to 1 per cent., when injected, and as high as 10 per cent. if applied locally to the mucous membrane. He advocated the injection method of treating a certain class of internal hemorrhoids, and described the cases to which it is adapted as those of the old indurated variety, in which the tumors are hard and painless, and cause inconvenience more because of their constant protrusion through a loose sphincter muscle than because of any actual suffering. He also showed that the use of sterile water as a local anesthetic is useless, except in tissue where it will be retained sufficiently long to make pressure on the nerve ends and drive out the blood. Because of the large amount of water required the tissues are so distorted that operation is difficult. He described a method for divulsing the sphincter under local anesthesia, and discussed the use of the actual cautery for the cure of hemorrhoids, ulcers and other conditions, with the technic.

Removal of the Uterus for Chronic Inflammation.

Dr. T. C. Witherspoon, St. Louis, advocated the removal of the chronically enlarged uterus whose density and vascularity are increased, which, associated with chronically inflamed and altered tubes, causes local and general symptoms that make life burdensome. Removal of the uterus brings about entire relief, but much depends on the technic of the operation. Three things must be observed: First, removal of the uterus with practically all of its endometrium. Second, avoidance of the large sympathetic pelvic brain. Third, complete closure of the peritoneum covering the pelvic floor in order to avoid bowel adhesions.

The best technic in the removal of the inflamed uterus is as follows: After entering the abdomen by a median suprapubic incision, carefully tie off the tubes, avoiding injury to the ovaries. Apply a clamp on either side of the uterus, letting its tip reach well down to the cervix; free the body of the uterus from the broad ligament attachments by cutting along the clamps; amputate through the cervix by an exaggerated V-shaped incision, the apex of the V reaching nearly to the external os. Tie the cut ends of the utero-ovarian artery loop, after releasing the clamps, with catgut. Close the stump, suturing to it the ovarian and round ligaments. Carefully cover all raw surfaces with peritoneum. Iodin catgut should be used as suture and ligature because it resists infection better than silk, linen or cumol gut.

Ligation of Common Femoral Artery for Large Aneurism in Scarpa's Triangle.

Dr. L. J. Dandurant, St. Joseph, Mo., exhibited a man, 42 years of age, who was first seen Nov. 20, 1905. Inquiry revealed a specific infection dating back ten years; also a trauma occurring two years ago in the nature of a horse kick. Examination revealed a large pulsating tumor filling the greater part of Scarpa's triangle, which was diagnosed as an aneurism of the femoral artery. Large doses of iodid of potassium and the induction of coagulation by compression, combined with the rest cure, proving ineffectual, Dandurant ligated the common femoral artery just below Poupart's ligament. All pain ceased; the tumor began to decrease in size. The circulation in the leg and foot was apparently not disturbed. There has not been a sign of edema at any time. In placing his ligature he followed the suggestion of Hunter, tying it tight enough to check the pulsation, but still permitting some blood to flow through the tumor. At the end of four or five days, however, this was entirely shut off, and today there is a well-organized clot, with perhaps a cavity at its center.

The County Sanatorium for the Treatment of Pulmonary Tuberculosis.

Dr. Richard C. Moore, Omaha, said that the indications for the successful management of pulmonary tuberculosis are surveillance, disinfection, and by appropriate means to increase the natural power of resistance. These indications can be followed out most satisfactorily by establishing and main-

taining sanatoria. Moore believes that a sanatorium in Nebraska would be a center from which information could be promulgated for the early management of such cases, and would thus in time, by instructing the people in prophylaxis and in the home treatment of consumption, greatly reduce the mortality from this cause. Theoretically the modern treatment of pulmonary tuberculosis can be carried out in the home of the patient, but practically it has been the author's experience that it is impossible to convince the laity, and many of the profession, that night air is not injurious, and that wind, rain or snow should not be excluded from the apartment occupied by the patient, when by such exclusion the free circulation of pure air is also shut out. To carry out this treatment the patient must be placed in a suitably arranged apartment and be absolutely under the constant surveillance of a trained nurse or experienced physician. In order to accomplish this desideratum the well-equipped sanatorium is probably the best, but such institutions are very costly to construct and very expensive to maintain, which renders them prohibitory in many communities. In Nebraska, where the consumptives, as shown by the statistics, are not numerous, the cheapest and most practicable manner of taking care of such cases would be in properly arranged county hospitals. Instead of the ownership and management being under state charge, each county could take care of its own consumptives as it now does its indigent sick and paupers. What is needed to carry out this plan is a well-drained location on which the county authorities can erect suitable buildings for its tuberculous patients in connection with proper facilities for the culinary department and housing of nurses. The author favors a plan similar to that suggested by Dr. Irving Fisher, New Haven, the main feature of which is an arrangement for ventilation by means of shutters, which are changed automatically to the direction of the wind.

The Expectant Mother.

Dr. E. T. Shelly, Atchison, Kas., said that the physician owes it to the expectant mother and to himself to give her the best professional attention he is capable of bestowing. As a necessary part of such attention he should, during the pregnancy, give her such guidance as her condition calls for, and to furnish it in a permanent and accessible form. The author spoke of the desirability of supplying the prospective mother gratuitously with an easily understood original pamphlet issued by the physician himself, and giving her such information as in his opinion she ought to have in order to pass through her ordeal as comfortably and safely as possible. He outlined such a pamphlet.

Rachitis.

Dr. A. E. King, Blockton, Iowa, said that in the pathology we find interrupted nutrition both in and outside of the child, and the malassimilation produces permanent alterations. Rachitis is entirely preventable and should not be associated with mollitis osseum, as the processes are entirely different, one being the destruction of bone, the other non-formation of bone. He pointed out the importance of making an early diagnosis, and of instituting proper treatment.

Surgery of the Paralyses.

Dr. John P. Lord, Omaha, said that the general practitioner has too little working knowledge of the benefits to be derived from surgical intervention. The deformities resulting from paralysis are all of a progressive character; therefore, effective treatment instituted before the deformity has begun will prevent the deformity. The mere maintenance of a limb in a corrected position not only prevents deformity, but prevents over-stretching of muscles which, unstretched and treated, might be of some service. This is more especially true in spastic conditions. Oftentimes massage, electricity, bathing, movement and use will do much in maintaining growth in bone, muscle, and ligaments, and will limit deformity. The present tendency is to limit the use of apparatus and resort to such surgical measures as will render the limbs most useful. These operations should be judiciously applied to the individual cases, and supplemented by such treatment as will furnish the greatest aid in completing the results. Time is a great factor.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Acute Articular Rheumatism.

In discussing the treatment of acute articular rheumatism Shoemaker, in the *New York Medical Journal*, commends very highly the use of salicin internally along with local applications of the oil of gaultheria. He condemns very strongly the use of salicylic acid and coal-tar preparations in the treatment of this condition and further states that the sodium salicylate has been properly succeeded by this glucosidal preparation. Salicin is more acceptable to the stomach and is less irritating to the digestive organs, and has not the depressing effect on the heart and circulation that is observed after the use of salicylic acid. In the opinion of Shoemaker, salicin bears to acute rheumatism very much the same relation that quinin does to malaria; in other words, he regards it as practically a specific for this condition. He also recommends the employment of alkalies in the treatment of acute articular rheumatism, especially potassium citrate, and the solution of ammonium acetate. Owing to the rapid anemia present, due to the loss of red blood corpuscles and destruction of hemoglobin, he recommends the tincture of the chlorid of iron, in combination with the alkalies. Basham's mixture consequently will serve the purpose, being a combination of the iron and ammonium acetate.

When the pulse is rapid and the heart's action is weak, strychnin may be added, or the infusion of digitalis given internally, combined with potassium citrate or sodium bicarbonate. He is strongly opposed to the use of antipyretics in the technical sense of the word. If, however, the temperature is high and maintains an elevation of 103 F. or over, there is always danger of the development of cerebral rheumatism, which may prove to be a fatal condition. In such conditions he recommends the cold bath, repeated often enough to keep down the temperature. It is well in these cases to precede the bath with an alcoholic stimulant, in order to cause dilatation of the peripheral blood vessels, the heart being sustained by hypodermic injections of strychnin and digitalin. The ice-bag may be applied to the precordium, to assist in combating the hyperpyrexia. He recommends morphin in doses of gr. 1/6 to 1/12 (.01-.005) each to an adult, given from time to time to relieve the pain and restlessness and to enable the patient to sleep. [This drug should be given cautiously, however, to avoid the formation of a habit.] The morphin should be combined with atropin in small doses. If the skin should become too dry, small doses of pilocarpin may be injected hypodermically, and warm drinks administered to assist its action. As the tonsils are in many instances the port of entry for many of these infectious organisms, he regards it as very important to disinfect the mouth and throat with proper antiseptic solutions. In summarizing the treatment he advises that the patient be placed in bed in a well-ventilated room in order to afford the most complete rest possible to the system. The food should consist principally of broths, stale or toasted bread and butter, weak tea or coffee, with an occasional egg, avoiding articles that ferment readily in the stomach; this includes the carbohydrates. Meat should be given only after the decline of the fever, and during the stage of convalescence. During the height of the disease, when there is severe local pain in the joints, he recommends the following combination applied locally.

℞ Olei gaultheriæ ..... ℥ii 8
Linimenti saponis q. s. ad ..... ℥ii 60

M. Ft. linimentum. Sig.: Apply locally to the joint by gentle rubbing; then envelop the joint in cotton, on the outside of which should be placed a flannel bandage.

Internally he recommends the following:

℞ Salacini ..... gr. x 65

M. Ft. chartula No. i. Sig.: One such powder to be given every hour or every two hours after the alimentary tract has been emptied by a cholagogue cathartic.

To support the heart and to counteract the anemia he recommends the following combination:

℞ Salacini ..... gr. x |65
Ferri citratis 3i 4
Liquoris ammonii acetatis 3iv 120
Syrupi aurantii rubri q. s. ad 3vi 180

M. Ft. solutio. Sig.: One tablespoonful every three hours in a wineglassful of water.

The principles of the treatment of subacute rheumatism, which is simply a milder form of the acute, are similar.

In chronic rheumatism iodin is recommended, both as an external application and internally in the form of potassium, sodium or strontium iodid. When gouty conditions exist along with chronic rheumatism, the lithia preparations, especially the mineral waters containing lithia, are of service, combined with colchicum. In the chronic forms of rheumatism massage, electricity and dry heat are of great advantage in the treatment.

In subacute rheumatism the following local application, containing mercury and salicylic acid, is recommended by Stevens:

℞ Acidi salicylici ..... gr. xxx 2
Olei terebinthinæ 3ii 8
Ung. hydrargyri 3i 30
Adipis lanæ hydrosi 3ss 15

M. Ft. unguentum. Sig.: Apply locally with friction night and morning.

Tampons in Chronic Constipation.

In considering the treatment of chronic constipation J. A. MacMillan, in *Medicine*, recommends rectal tampons in atonic constipation. This tampon should be made of absorbent cotton, cheese cloth or lamb's wool, and should be large enough to cause some distension of the bowel. It should be inserted through an ordinary proctoscope, and packed by means of a long forceps. The best location is at the recto-sigmoidal junction. A piece of string, of course, should be attached to the tampon, in order to facilitate its withdrawal after it has remained in place for from two to six hours. This treatment should be carried out every other day at first, and the interval between the treatments should be gradually lengthened as improvement takes place. The value of this treatment, according to the author, is due to the distension of the intestine. He records success in the majority of the cases in which he has tried it, although not in all of them. In most of these cases enemata and cathartics should be discontinued from the first, in order that regularity of stools may be established.

Multiple Warts.

Mantlin recommends the following combination in the treatment of multiple warts:

℞ Chloralis hydratis
Acidi acetici, āā 3iss 6
Acidi salicyli
Spiritus etheris, āā 3i 4
Collodii 3iv 15

M. Sig.: Apply locally to the warts.

Administration of Belladonna.

In the treatment of acute keratitis Stevens recommends the following combination containing belladonna:

℞ Atropinæ sulph. ..... gr. i |06
Acidi borici ..... gr. x |65
Aquæ dest. 3i 30

M. Sig.: One or two drops to be instilled into the conjunctivæ twice a day.

In cases of pertussis the following combination is recommended:

℞ Tinct. belladonnæ 3iss 6
Glycerini 3ii 8
Aquæ menth. pip. q. s. ad 3ii 60

M. Sig.: Thirty minims three times a day for a child of 3 years. The dose should be gradually increased until flushing of the face is induced.

In the treatment of hemorrhoids the following combination is useful:

℞ Ext. belladonnæ ..... gr. x |65
Acidi tannici ..... gr. vi |40
Hydrarg. chloridi mitis ..... gr. xxx |30
Cocainæ hydrochlor. ..... gr. vi |40
Unguenti petrolati 3i 30

M. Ft. unguentum. Sig.: Wash the parts well and apply locally, night and morning.

Diarrheas in Children.

In outlining the course of treatment of diarrheas in children J. H. Buffum, in *Vermont Medical Monthly*, states that in a general way all the infectious diarrheas of childhood should be treated in a similar manner. The first essential is cleanliness, together with a cool, quiet room, and an abundance of fresh air. Early in the disease all food, even breast milk, should be withheld. During the first twenty-four hours nothing should be given except a little cold boiled water, with the addition rarely, in cases of great prostration, of a little brandy or whisky. In some cases the stomach may be so irritable as to me unable to retain any substance, consequently it may be necessary to give stimulants hypodermatically. If the case is seen sufficiently early, a dose of castor oil is recommended to clear the alimentary tract and, consequently, to shorten the course of the disease. When vomiting is severe, however, calomel in small doses is preferable. Irrigation of the bowels with a normal salt solution is of value, as it assists in the removal of toxic products from the intestines, and serves to quiet the thirst and to supply the necessary fluid to the tissues. The temperature of the fluid used should vary as indicated by the patient's condition. If the vomiting should continue beyond twenty-four hours, some authorities recommend washing out the stomach, and that this procedure be followed by administration of small doses of calomel. Hot packs are recommended in cases of prostration. In some cases the vomiting and purging may be so severe as to demand morphin and atropin hypodermically. When this is necessary he recommends morphin gr. 1/100, and atropin gr. 1/800, for a child 1 year of age. When in the judgment of the physician food can be borne by the stomach, Buffum recommends barley water or albumin water, together with beef, mutton or chicken broth, either administered alone or in combination. These feedings should be two or three hours apart, and in amount one-fourth to one-half the normal. Bismuth is recommended to allay the vomiting and the tenesmus, as it is both a sedative and an intestinal antiseptic. In children it should be given suspended in mucilage, or in older children it may be given in powder form. He does not think much of the intestinal antiseptics commonly recommended.

Medicolegal

Prior Operation No Defense for Unauthorized Dissection.

By section 309 of the New York Penal Code the unauthorized dissection of the body of a human being is a misdemeanor. The First Appellate Division of the Supreme Court of New York says that in the case of Jackson vs. Savage and others, alleged to be the officers, directors and trustees of a hospital, the gravamen of the complaint was the unauthorized dissection of a body, that of the plaintiff's wife, after death. The plaintiff must establish that essential fact. Having established it, it would be no answer to prove a prior operation during life. But if, as proof of dissection after death, he should introduce proof as to the condition of the body when received by him, it would be entirely competent to prove that the said condition was the result of an operation, and not of dissection. No averments in the answer would be required for the admission of such evidence. It would go to the destruction of the plaintiff's case, but in no sense would it be a defense of the cause of action set forth.

Requirements as to Insanity as a Defense to Crime.

The Supreme Court of Idaho says, in the homicide case of State vs. Wetter, that where the defense is insanity, it is always brought into the case by the defendant, and until he furnishes such evidences of insanity, at least sufficient to raise a question of doubt in the minds of the jurors, the prosecution may rest on the legal proposition that all men are supposed to be sane and legally responsible for their acts. The mere fact that insanity may exist in his family is not of itself sufficient to excuse the defendant from the responsibility he owes to his fellow-men, neither would it avail him if he were able to prove that he was "off" at times. The question to be

determined in cases of this character is, was the defendant at the time of the homicide so mentally unbalanced that he was not responsible to God or man for the commission of the act? If he mentally knew it was wrong to take the life of a human being, and under these conditions did commit the offense charged to him with malice, hatred or revenge, he is morally and legally responsible for the act and should suffer the consequences. He might at times be "a little off," and yet entirely responsible at the time of the commission of the crime charged to him. It might be that insanity existed in his family from its earliest history, and yet that would not excuse him. It would only be a circumstance in his favor, to be considered with other evidence as to his past history, his language, acts and conduct at the time of the homicide and prior thereto. In fact, anything in his past life showing any indication of insanity should and would be considered by the jury. It would be a very dangerous precedent to say that because insanity existed he should have immunity. Further than that, it should be considered in connection with other evidence in the case showing the condition of the defendant's mind at and about the time of the homicide. It is true it would be a strong circumstance to show that he was not so mentally and morally depraved as to take the life of two human beings and attempt the life of the third, but, nevertheless, it would still be incumbent on him to show that legal insanity, and not moral depravity, prompted the act. Human life is very sacred in the eyes of the law, and, whilst courts should always guard with the utmost diligence the rights of all parties charged with crime, at the same time they should be watchful of the rights of the people and not permit parties charged with homicide to go unpunished on the plea of insanity, unless there is a foundation in fact, reason, and justice to believe that the insanity was of such a character that the party pleading it was so mentally unbalanced that he was not responsible for his conduct.

Physician Not Guilty of Negligent Homicide.

The Court of Criminal Appeals of Texas reverses, in Gorden vs. State, a conviction of a physician of negligent homicide. It says that the Penal Code of that state provides that, "If any person in the performance of a lawful act shall, by negligence and carelessness, cause the death of another, he is guilty of negligent homicide of the first degree. . . . To constitute this offense there must be an apparent danger of causing the death of the person killed, or some other. The want of proper care and caution distinguishes this offense from excusable homicide. The degree of care and caution is such as a man of ordinary prudence would use under like circumstances." The test of the offense seems to be that there must be an apparent danger of causing death. Without this it would seem this offense could not exist, or would not be made out. And the test of care or caution is that which distinguishes it from excusable homicide.

In this case the accused, a physician, was called in consultation by the attending physician of a woman who was suffering from a cancerous affection of the womb. An examination was necessary, and for this purpose he was called in by the attending physician. In order to make this examination he inserted two fingers in the vagina to detect the cause of the trouble. There was some question as to what this trouble was, but the testimony showed that the woman had been suffering from this cancerous affection, and to such an extent that she was continually confined to her bed and bled to a considerable extent. The state's contention was that the accused with considerable degree of force undertook to pull and succeeded in pulling something from the womb or vagina, and that this caused great pain. Whatever this substance was, it was laid on the bed and subsequently put back into the vagina. The evidence for the defense showed the insertion of the fingers seemed to have broken down the partition wall between the womb and the intestines, at least, this conclusion was deducible and that an intestine protruded through the cavity and out through the vagina, thus making its appearance, and that this was pushed back. At this point the theory of the state seemed to be that with the two fingers the accused pulled with such force on the womb as to tear loose and break down this partition wall, and by this means the intestines escaped, thus producing death. It was also contended by the state that this intestine was torn. But the physicians showed that this was not true, and could not have been true. In fact, it seemed to be practically demonstrated by the evidence of the physicians that the accused could not by the insertion of the two fingers into the vagina either have torn down the partition wall between the womb and the intestines, or break or tear in two the intestine after it protruded into the vagina.

Murder in second degree and manslaughter were submitted. But on each issue the jury found in favor of the accused, and convicted, as before stated, of negligent homicide. And the court does not believe that there was any evidence showing murder or manslaughter. Nor does it believe that there was evidence of sufficient character to show want of proper care. It says that the question of apparent danger under the statute under discussion is one that perhaps may be fraught with more or less trouble when applied to surgical operations. Just how far the surgeon would be responsible for negligent homicide, where there is an apparent danger of causing death of the person on whom the operation is performed, the court does not here propose to decide. Whatever that responsibility is, and at whatever point it may occur, there must be an apparent danger of causing the death of the person on whom the operation is performed; and, of course, this must be viewed in the light of proper care and caution. Many of the operations that are performed to relieve suffering humanity are necessarily fraught with more or less danger; and this is as well understood by the patient as by the operating surgeon. The court is of the opinion that the statute never intended to hold a surgeon liable for a homicide in cases of this character, unless there was a want of proper caution and care in the operation, however dangerous that operation may be. It may be proper, perhaps, to state that in some of the diseases for which these operations are performed for the relief of the patient the chances are more than equally balanced against life that death will result. Under this character of case there would be an apparent danger of causing death, but in such case, before the physician could be held responsible for the homicide, there must be shown a want of proper care and caution in performing the operation. Of course, however dangerous the operation may be and however many may be the chances of producing death, the physician could not be guilty, unless he acted without necessary caution and care. But the court does not think that question entered into this case, because it does not believe the facts justified the conclusion that there was a want of proper care.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below

American Medicine, Philadelphia, Pa.

March 24.

1 *Malaria and the Anopheles Mosquito in Pennsylvania and in Texas. A. Woldert, Tyler, Texas.
2 *Men Having Ocular Movements Similar to Those Found Normally in the Ungulates. W. L. Phillips, Buffalo, N. Y.
3 Diagnosis in Incipient Pulmonary Tuberculosis. J. H. Elliott Gravenhurst, Canada.
4 Etiology of the Hemorrhagic Diathesis. W. W. Carter, New York.
5 *Nose and Throat Diseases from a Constitutional Standpoint. J. L. Harkness, Philadelphia.
6 King's Evil and Its Cures. (To be concluded). J. Knott Dublin, Ireland.

1. **Malaria.** Woldert gives a detailed account of his personal observations made in Philadelphia and Texas regarding the anopheles mosquito. In Philadelphia he only once failed to find the malaria-carrying mosquito (invariably the *Anopheles quadrimaculata*) in the houses in which autochthonous cases of malarial fever prevailed. In Texas he has never failed to find them. He also found that the male mosquitoes became more numerous as frost came on, while the female gradually disappeared.

2. **Patients Having Ocular Movements of Ungulates,**—Phillips cites the history of two patients each presenting essentially the same conditions. They can see 20/20 with each eye separately and without glasses. It is possible for one patient to fix with both eyes, to turn either one out slowly and back again to double fixation without disturbance, while reading. He is also able to converge both eyes and to move his eyes simultaneously to extreme divergence. Besides this he can move them both to the extreme right or to the extreme left, or, by holding one in any position, from extreme divergence to extreme convergence, look at the side of his nose with the other. At no time since birth did he have double vision, and it is not produced even by the use of strong prisms. He finds that monocular vision is more restful than binocular vision, because of less head rotation. In each of these positions he has both eyes in focus, seeing with the one in front and the other at the side. The second patient could, with one eye, see to set type and at one side read proof with the other without the necessity of movements of the eyes.

5. **Nose and Throat and Constitutional Diseases.**—Harkness points out the intimate relation which exists between these organs and other organs of the body, as for instance, laryngitis, and pharyngitis of a rheumatic or lithemic origin. He also notes the relation between varicose veins of the leg and hypertrophied tonsils, and the effect of adenoids which cause gastric disturbances and *vice versa*, inanition in children, etc. He calls attention to the inflammatory conditions of the sinus (with consequent systemic effects) caused by a deflected septum, and shows the close relation existing between nasal conditions and the genitalia both in normal physiologic conditions and in disease.

Medical Record, New York.

March 24.

7 *Modern Treatment of Fractures. C. Beck, New York.
8 Uterus and Ovary of Neurasthenia. R. L. Dickinson, New York.
9 *Appendicitis. A. E. Isaacs, New York.
10 Filtration of Public Water Supplies. C. E. Gillette, U. S. A.
11 Public Water Filtration in Massachusetts. G. Harrington. Boston.

7. **Treatment of Fractures.**—Beck sums up his views as follows: In the absence of bone injury the proper treatment consists of massage, followed by immobilization. If there is a fissure or fracture, with no displacement, manipulations of the injured area must be avoided and immobilization in the most comfortable position applied. As a rule he has found a plaster-of-Paris dressing best for this purpose. After two or three weeks the dressing is removed and massage is begun. In about two weeks a plaster-of-Paris splint is applied, which the patient can take off and reapply. If there is any displacement reduction must be tried at once. In those cases in which reposition, even under anesthesia, can not be accomplished, the fragments must be exposed by the scalpel and brought into apposition. If there be any tendency to displacement a plaster-of-Paris dressing will ensure immobilization. If the fragments slip out easily it is safer to unite them with catgut, provided there is enough periosteum to be utilized for that purpose. Otherwise it is best to keep them together with a bronze wire suture.

9. **Appendicitis.**—Isaacs records his personal observations in a series of 147 consecutive appendectomies, with fifteen fatalities. In sixty clean cases only one patient, a man, died. This was the second attack of appendicitis, and the man had, in addition, a severe influenza. He developed a postoperative general peritonitis, cause unknown. In 62 local abscess cases four patients died, and in 25 general peritonitis cases ten patients died. In eight of these death was due practically to a continuation of the general sepsis. In about 68 of the 75 cases in which the onset of the attack was noted pain was the first symptom. It was a prominent symptom in 127 cases, and in the remaining 20 cases it could be brought out as an objective symptom. The next most frequent symptom noted was constipation, which was present in 103 cases. Vomiting was present in 100 cases, including almost all the acute and some of the subacute and interval cases. The diagnostic value of the various symptoms noted, the choice of time for operation and the method of operating are discussed fully. Isaacs found that, like pulse and temperature, the leucocyte count in itself is not a positive indication of the presence or absence of pus in any individual case, yet it may be of value as confirmatory evidence in the presence of other symptoms.

Boston Medical and Surgical Journal.

March 22.

12 *Cases Illustrating Cystoscopic Diagnosis. A. L. Chute, Boston.
13 *Cerebral Seizures with Suboccipital Pain. W. D. Ruston and E. E. Southard, Boston.
14 Gunshot Wounds of the Head and Spine. W. R. Weiser, Springfield, Mass.

12. **Cystoscopic Diagnosis.**—The value of the cystoscope as a diagnostic aid is subscribed to by Chute, who says that in cases of painless hematuria of renal origin cystoscopy is of particular value, allowing one to tell definitely which kidney the bleeding is from before the other localizing symptoms, such as pain, tenderness, and increased size, have appeared.

13. **Cerebral Seizures with Suboccipital Pain.**—A case suggesting the difficulty of diagnosis in cranial conditions anatomically simple, is reported by Ruston and Southard. A woman, 69 years of age, presented a series of cerebral seizures without focal signs, leading to a fatal issue in nineteen days. The seizures were ushered in by a boring occipital pain. The autopsy revealed several successive voluminous hemorrhages so situated in various parts of the cerebrum that the fibers of the projection system were largely spared. The small cerebral arteries, both of the cortical and the ganglionic systems, were beset with miliary aneurisms. Both vertebral arteries opposite the junction of bulb and cord showed gross aneurismal dilatation.

New York Medical Journal.

March 24.

15 *An Explanation of Suggestions in Therapeutics. B. F. Beebe, Cincinnati.
16 *Spirochæta Pallida in Syphilis, with Special Reference to Goldhorn's Rapid Staining Method. G. M. MacKee, New York.
17 *Treatment of Lateral Curvature of the Spine. A. R. Shands, Washington, D. C.
18 *Perforating Ulcers of the Duodenum. M. A. Austin, Anderson, Ind.
19 *Diagnostic Significance of Colic. G. P. LaRoque, Richmond, Va.
20 Prognosis in Tuberculosis of the Lungs. J. Walsh, Philadelphia.
21 *Unusual Case of Chlorosis. J. H. Barach, Pittsburg.
22 Eye Problems which the General Practitioner is Called on to Solve. R. J. Tivnen, Chicago.
23 Vincent's Angina. L. T. Royster, Norfolk, Va.

15. **Suggestion in Therapeutics.** That psychic influence has not been used more by physicians in a legitimate manner; that the profession has permitted it to become the basis of many religious cults and has allowed it to be used by charlatans to the detriment of the people, Beebe thinks is peculiar. He thinks that every individual has an influence, to a greater or less degree, on some other person or persons, and that suggestion or psychic influence may be made to play an important rôle in the healing art. All physicians, consciously or unconsciously, he declares, influence their patients in a general way. Beebe urges that more attention be given to this matter and enters into an explanation of the *modus operandi* of this form of therapeutics.

16. **Spirochete in Syphilis.**—MacKee examined twelve cases of secondary syphilis with reference to the *Spirochæta pallida* and succeeded in finding this organism in eleven cases. He has not been able to demonstrate the spirochete in tertiary lesions or in specimens taken from lesions in psoriasis, lichen planus, eczema, lupus, varicose ulcers, seborrheic dermatitis and epithelioma.

17. **Treatment of Lateral Spinal Curvature.**—The method pursued by Shands is practically that advocated by R. W. Lovett with a variation in the application of the mechanical support. The patient is treated daily at the office for several months, and then three times a week. The treatment consists of a combination of dumb-bell exercises, stretching the spine in the jury mast, and hanging on a trapeze, bobbing up and

down over the end of a table, and the application of an intermittent corrective force in the Adams machine. The patients are allowed to remain in this machine under the greatest amount of force they can stand for from fifteen to twenty minutes. After the spine has been rendered as flexible as possible the patient is suspended in the jury mast and an impression is taken of the body from the collar bone well over the hip. A solid plaster-of-Paris bust is made from this jacket. The shape of the bust is improved by shaving away a certain amount of the plaster over the apex of the deformity of both the primary and compensating curves until the necessary correction has been made. The plaster-of-Paris corset is made from this bust. When the corset is laced on the patient as much constant pressure can be brought to bear at the seat of the deformity as the patient can stand.

18. **Perforating Ulcer of Duodenum.**—A case of acute ulceration of the duodenum, about two inches below the pylorus, is reported by Austin.

19. **Colic.**—As an aid to differentiating between colic and peritonitis LaRoque has worked out a very useful table in parallel columns. Because of the length of this table the reader is referred to the original article.

21. **Unusual Case of Chlorosis.** The patient in this case of chlorosis reported by Barach was a boy, 10 years old, who, until the age of 2 years, was to all appearances perfectly healthy. For several years after that his health was not so good, and during that time he was troubled much with constipation. At 8 years of age he had a severe attack of whooping cough, lasting two months. Following that he was taken sick with what was probably a bronchopneumonia. The patient always lived in the country where he had plenty of fresh air, good food, and proper hygiene. His appetite, however, was capricious and at times uncontrollable. Barach thinks that the gastrointestinal system of the patient was at fault.

Lancet-Clinic, Cincinnati, Ohio.

March 24.

24 Combined Method of Treatment in the Arrest and Cure of Tuberculosis. H. B. Weaver, Asheville, N. C.
25 *Tuberculous in General Practice. H. A. Cowing, Muncie, Ind.
26 *Treatment of Tuberculous Pleurisy with Effusion. T. Potter, Indianapolis.

25-26.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1436.

Journal of the Kansas Medical Society, Lawrence.

March.

27 *Cases Treated by the X-ray. J. N. Scott, Kansas City.
28 *Medical Legislation. C. C. Morrison, McCune, Kansas.
29 Quacks and Their Ways. J. B. Armstrong, Portis.
30 Glass Fitting. J. S. Wever, Kansas City.
31 La Grippe. J. R. Scott, Garnett, Kansas.

27. **Cases of Epithelioma Treated by the X-Ray.**—Scott reports six cases. The first patient had an epithelioma of the left side of the nose and cheek. When treatment was started the tumor was discharging considerable pus. After the conclusion of treatment the final result was only a little depression and contraction at the site of the cavity. The second patient had an epithelioma of the nose which also yielded rapidly under x-ray treatment. The third patient had an epithelioma of the upper eyelid. The growth began to diminish after the tenth treatment and the final result was a good one. The fourth patient had an epithelioma of the cheek which was entirely destroyed and the place healed over. A recurrent carcinoma of the breast also did well and an epithelioma extending from the external canthus of the eye to the ear yielded in four months.

28. **Medical Legislation.**—Morrison states that the trouble with medical legislation seems to be not so much in the matter of the law as in securing a board that will enforce the law. This can be done only by securing a board that will represent the best interests of the medical profession. Since this board is to represent the medical profession the members of that profession ought to have a voice in determining who is qualified to represent them. This is already being done in fifteen states and the District of Columbia, and in two states the boards are appointed by the medical societies and not by the governor. Morrison recommends that the statutes be amended so that the governor would be compelled to appoint the state board of medical examination and registration from recommendations made by the state medical societies.

American Journal of Surgery, New York.

March.

32 *An Operation for Cleft Palate. H. L. Smith, Nashua, N. H.
33 Keetley's Operation for Undescended Testis. W. M. Brickner, New York.
34 Surgical Treatment of Obstinate Dyspepsia. W. F. Campbell, Brooklyn, N. Y.
35 *Choice of Splints for Hip Disease. E. W. Ryerson, Chicago.
36 The Preliminary Training of a Surgeon. A. C. Bernays, St. Louis.
37 Plaster of Paris and How to Use It. (Continued) M. W. Ware, New York.
38 Local Anesthesia, with Especial Reference to Its Employment in Genitourinary Work. S. Wm. Schapira, New York.
39 Observations in the Ear Clinics of Berlin. C. H. May, New York.

32. **Operation for Cleft Palate.**—The procedure adopted by Smith has for its purpose not merely the closure of the cleft, but the actual production of a new muscular velum. The method has proved satisfactory in the case of ten patients operated on. From the anterior end of the cleft an incision is made, running outward and a little backward toward the alveolus, about one-third the distance to the teeth, when the direction of the incision is changed so that it is carried in a straight line nearly to the posterior extremity of the alveolar process, care being taken that there is left sufficient tissue for the blood supply of the flap. A corresponding incision having been made on the opposite side, the two flaps thus outlined are dissected up from the bone, the periosteum being included, and are freed completely from the posterior edge of the palate bones behind.

An incision is now made on each side, beginning at a point near the last molar, where the preceding incisions terminated, and running along in a curve, close to the roots of the teeth, sufficient space being left in front for the nourishment of the flaps. This cut will usually terminate near the lateral incisors. There are thus formed two triangular flaps, composed of mucous membrane and periosteum, which are carried into the median line and sutured together. The freshened edges of the velum are now sutured, and the posterior edges of the anterior flaps are sewn to the middle of the newly-formed velum. If deemed best the tension can still further be guarded against by extra sutures, placed in the velum at some distance from the edge. In case there seems danger that the palate may be carried too far forward during the process of repair through contraction of the flaps, it is quite feasible, Smith says, to pass a suture through the periosteum at the posterior edge of the palate bones, and thus anchor the velum at the desired point.

35. **Choice of Hip Splints.**—According to Ryerson, the ideal hip splint should have as a foundation a simple Thomas knee splint; to this should be added the Davis pelvic band to allow the use of a perineal strap on the well side if abduction is present. On this pelvic band an ordinary Thomas upright and thoracic band should be carried, the thoracic band being of the same design as the pelvic band. If, however, these pelvic and thoracic attachments be permanently fastened to the lower uprights it is difficult or impossible to apply the brace, since it involves dragging the patient through three hoops, set at different angles. To overcome this Ryerson makes use of an other method. The upper end of the outside upright is carried an inch above the attachment of the Thomas ring and is ground accurately. A socket drilled to fit this post is then forged, with short anteroposterior wings to which the pelvic band is riveted at an angle of 20 degrees, to correspond with the average tilt of the pelvis. An upright from this pelvic band supports the thoracic band. This entire upper work constitutes a separate part of the brace which can easily be attached after the lower part has been applied. Ryerson has used this brace in a number of cases with great satisfaction.

St. Louis Courier of Medicine.

March.

40 Tuberculosis in St. Louis. G. Richter, St. Louis.
41 *Darier's Disease. H. W. Mook, St. Louis.
42 Splenectomy for Rupture of the Spleen. Dr. Freund, St. Louis.
43 Presentation of the Spleen. W. C. G. Kirchner, St. Louis.
44 Tumor of the Face. H. W. Mook, St. Louis.
45 Stab Wound of the Abdomen. Dr. Freund, St. Louis.

46 Typhoid Perforation. H. W. Soper, St. Louis.
47 Cause and Prevention of Postoperative Cystitis. F. J. Taussig, St. Louis.
48 Cerebellar Tumor of Syphilitic Origin. J. J. Singer, St. Louis.

41. **Darier's Disease.**—Mook reports a case of this rare affection for the purpose of showing the effect of the *x*-ray treatment on the disease. The result was remarkably beneficial. The secretions dried up promptly and in a few weeks the growths were markedly reduced in size and have continued to reduce until now they are one-fifth as large as when the treatment was begun. The treatment has also entirely relieved the pain and burning sensation which characterized the disease.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

March.

49 Medical and Surgical Observations During a Three Years' Tour of Duty in the Philippines. J. M. Banister, Ft. Riley, Kansas.
50 *Further Researches into the Causes which Tend to Bring About Serious Accidents to Divers. L. Abbamondi, R. I. N.
51 *Sure Cure for Asthma. A. T. Short, U. S. A.
52 Service of Negroes in Hospital Corps Detachments. J. H. Ford, U. S. A.
53 Grayson-Graeme Hammock Mosquito Net. C. T. Grayson, U. S. A.

50. **Causes of Accidents to Divers.**—Abbamondi discusses those accidents which may happen after the return to the ordinary pressure and those which may happen before the diver's return to ordinary pressure, that is, when he is under water. He conducted a large number of experiments on chickens which showed the following: The rapid change of pressure and principally the rapid descent under several atmospheres may be dangerous in the exercise of the diver. The chickens subjected to a rapid compression (one second), almost constantly manifested in the experiment room morbid phenomena (somnolence, lethargy, difficulty of breathing, excitation, etc.) but they did not present them when the compression was slow (five minutes). The duration of the stay in the experiment room (five to twenty minutes) had not apparently a remarkably pernicious influence when the compression was gradual. Rapid decompression (one second) on the chickens subjected to a pressure of five atmospheres (equal to forty meters' depth in the sea), only produced mortal effect in the cases when it had been preceded by a rapid compression (one second), and it rarely produced them when it had been preceded by a slow compression (five minutes).

51. **Cure for Asthma.**—Short reports the curious case of a girl who was treated by her sister with what she stated to be a sure cure for asthma. Every form of treatment, including climatic, had been tried previously, but without avail. The sister went to the cemetery and selected some pieces of bone of the skull, which were dry and bleached, washed them and pulverized them in a mortar, added the powder to a quart bottle of water and gave the patient a teaspoonful three times daily. By the time half of the mixture had been taken the patient's condition was very much improved. Short saw the solution and observed the results of the treatment. About two and a half years have elapsed since then and there has been no recurrence of the asthma. Short concludes: "In what the potency of the treatment consisted I will not attempt to state, but I can vouch for the truth of these facts."

The American Journal of the Medical Sciences, Philadelphia.

March.

54 *Late Results of the Treatment of Inoperable Sarcoma by the Mixed Toxins of Erysipelas and Bacillus Prodigiosus. W. B. Coley, New York.
55 Treatment of Selected Cases of Cerebral-Spinal, and Peripheral Nerve Palsies and Athetosis by Nerve Transplantation. W. G. Spiller, C. H. Frazier and J. J. A. van Kaathoven, Philadelphia.
56 *Function of the Left Prefrontal Lobe. C. Phelps, New York.
57 *Double Ego. A. Gordon, Philadelphia.
58 Three Cases of Traumatic Brown-Séquard Paralysis. J. Grinker, Chicago.
59 Hemophilia in the Newly Born. R. C. Larrabee, Boston.
60 Pulmonary Gangrene Following Foreign Bodies in the Bronchi. T. W. Clarke and D. Marine, Cleveland, Ohio.
61 *Rhythmic Lateral Displacement of the Heart as a Sign of Unilateral Pleuritic Exudate. C. L. Greene, St. Paul, Minn.
62 *Orthostatic Albuminuria. O. A. Kennedy, Louisville, Ky.
63 *Aspiration in Acute Articular Rheumatism. F. J. B. Cordeiro, U. S. N.
64 Rationale of the Roentgen Ray. J. W. Hunter, Jr., Norfolk, Va.

54. **Mixed Toxins in Inoperable Sarcoma.**—Coley reviews the history of the mixed treatment of inoperable sarcoma and reports 11 cases of sarcoma and carcinoma which show that the toxins have a marked inhibitory action, even in carcinoma; and although this is rarely curative, he believes the results sufficiently good to justify the routine use of the toxins after all primary operations for carcinoma, as well as for sarcoma. Of 36 cases which may be classed as successful in that the tumor disappeared under the injections with the mixed toxins, the type of the neoplasm was as follows: Round-celled, 13; spindle-celled, 16; mixed-celled, 2; epithelioma, 1; chondrosarcoma, 1. In three cases no microscopic examination was made, but the clinical appearance, together with the history of recurrence, left practically no room for doubt as to the diagnosis. The results in these cases, thus far, have been as follows: Well less than a year, 5; well from one to two years, 4; well from two to four years, 3; well from three to five years, 5; well from five to thirteen years, 21. Ten patients are well over ten years. In five cases a recurrence took place and finally proved fatal. In one of these recurrent cases the patient had remained well eight years; in one, three and one-fourth years; in one, two and a half years; in one, seven months, and in one six months.

From published reports and personal communications from other surgeons who have tried the mixed toxins in inoperable cases Coley tabulates 60 cases of complete or partial success. In all of these cases the clinical diagnosis was confirmed by a number of surgeons and the patients were considered hopeless from an operative standpoint. Twenty-seven patients were alive and well from three to twelve years after treatment. In nine of Coley's successful cases the sarcoma originated in the bone; in twenty-two in the external soft parts; five were intra-abdominal growths. Of the successful cases in the hands of other surgeons twenty occurred in the bones, nineteen were intra-abdominal growths, and fourteen occurred in the soft parts. Coley has also collected twelve cases of sarcoma of the extremities in which the use of the mixed toxins has rendered amputation unnecessary and the limb was saved. In eight of these cases the sarcoma was of the round-celled variety; in two, of the spindle-celled variety, and in two no microscopic examination was made, but amputation was strongly advised by a prominent surgeon. Eight of these patients were alive and well and free from recurrence from three to six years later.

56. **Function of Prefrontal Lobe.**—Phelps cites 11 cases of cerebral injury, in which the distinctive lesion was found to be frontal, which he believes strengthens the statement made by him in 1894 that the seat of control for the intellectual faculties resides exclusively in the left frontal lobe.

57. **Double Ego.**—The case reported by Gordon is unusual and probably unique as an example of the co-existence of two egos at the same time. The patient is absolutely convinced that he is composed of two beings: number 1 and number 2. The latter is inimical to the first in every respect; suggests wrong acts, interferes with his life, even dictates to him bad language when he talks to others; briefly, number 2 is always for "the bad part of life." It is constantly in him, can not be separated from him, controls his actions, and never leaves him for a moment. The patient has a full knowledge of right and wrong and resists, therefore, the evil influence of number 2. Most of the time he overcomes it, but sometimes number 2 overpowers number 1 and takes full possession of the latter. When number 1 loses the battle the patient enters into a state of unconsciousness. In his judgment number 2 is not a material being; he does not see or hear it, he only feels its presence. The patient is intelligent, industrious, attends to his work correctly, never makes mistakes. He is an engineer, does responsible work, and never fails in doing his duties. His previous history is negative. Gordon classes this as a case of epileptic psychosis.

61. **A Sign of Unilateral Pleuritic Exudate.**—More extended observation has convinced Greene of the correctness of a statement made by him in 1902 that a rhythmic lateral displacement of the heart is a valuable sign of unilateral pleuritic

exudate. Such movement is most marked in medium-sized effusions. The heart approaches the affected side in inspiration and moves outward in expiration. The extent of movement is variable, but often amounts to two inches.

It may be measured by fluoroscopic examination, auscultatory percussion, or in the case of right-sided effusions by simple deep percussion of the free cardiac border, or in some instances by mere inspection of the apex beat. Deep breathing, and especially forced expiration, are essential to the success of the maneuver, and to obtain this morphin must sometimes be administered. Marked rhythmic lateral movement has not been found in pneumonia, tuberculous infiltrations of the lung, malignant disease of the pleura or lung, or in subdiaphragmatic abscess.

62. **Orthostatic Albuminuria.** In this case the symptoms appeared to indicate that the albuminuria began and continued for an indefinite period (more than two years) without the existence of renal inflammation or organic lesions, but that the long continued irritation incident to the disordered condition, giving rise to albuminuria, finally resulted in a nephritis. The absence of pathologic changes in the kidneys for at least the first two years is suggested by the absence of tube casts and the orthostatic form of the albuminuria. Kennedy describes in detail the tests employed and the special experiments made in this case.

63. **Aspiration in Acute Articular Rheumatism.**—It has been Cordeiro's custom to regard and to treat acute rheumatism as a surgical and not as a medical disease. Where there is enough fluid to warrant aspiration it is his routine practice to resort to that procedure. He has noticed that an aspirated joint has never been reattacked during the same or a subsequent illness. In one case the fluid removed was examined. A number of bodies which seemed to be zoöglear masses were observed and these were crowded with extremely minute round bodies which did not stain readily. Cordeiro thinks that if the specific micro-organism of rheumatism is eventually found it will be in the joint fluid.

American Journal of Obstetrics, New York.

March.

65 Associated Nervous Conditions in Gynecology, with Especial Reference to the Climacterium and Allied States. (To be continued). S. W. Bandler, New York.
66 Evolution in Axis-Traction. A. C. Jacobson, Brooklyn, N. Y.
67 *Pseudomyxoma Peritonei. B. C. Hirst, Philadelphia.
68 *Appendicitis Complicating Pregnancy and Parturition. E. P. Davis, Philadelphia.
69 *Appendicitis Complicating Pregnancy. M. W. Myer, Columbia, Mo.
70 Artificial Dilatation of the Pregnant and Parturient Uterus. C. E. Ziegler, Pittsburg.
71 Prophylaxis of Abdominal Adhesions. C. G. Cumston, Boston.
72 *Anatomy of Hernia of the Female Pelvic Floor. W. Keiller, Galveston, Texas.
73 Toxemia of Pregnancy. I. Strauss, New York.
74 Etiology of Cancer of the Pelvic Organs. H. N. Vineberg, New York.
75 Nature of Cancer. B. H. Wells, New York.

67. **Pseudomyxoma Peritonei.**—The most curious feature of Hirst's case was a complete inversion of the nullipara's vagina and the enormous distension of the pouch thus formed, evidently by the weight of the free pseudo-mucin in the pelvic cavity (about fifteen pounds). There was a semi-collapsed ovarian cyst on the left side with an opening on its posterior superior surface. Two typical daughter cysts, the size of a cherry, were found in the wall of the ileum, one exhibiting a spontaneous perforation of its wall. The collapsed ovarian tumor, the free pseudo-mucin, and the daughter cysts were removed; the uterus, which had prolapsed, was suspended.

68. **Appendicitis Complicating Pregnancy.**—Davis calls attention to the fact that appendicitis is a serious complication of pregnancy, and that adhesions following appendicitis may bring discomfort and danger to a patient who becomes pregnant after she has recovered from disease of the appendix. He also urges for consideration the proposition that in view of the serious consequences which follow appendicitis in pregnant women, the appendix be removed as soon as inflammation attacking that organ can be diagnosticated. Remembering the impossibility of differentiating between inflammation of the right Fallopian tube and ovary and inflammation of the appendix complicating pregnancy, operation should be done without waiting to make a positive diagnosis that the tube is inflamed and that the appendix is not affected, or that the contrary is the case. Six cases in point are reported.

69. **Id.**—Of the 143 cases collected by Myer, 52 occurred during pregnancy and the patients were not operated on; 69 patients were operated on during pregnancy, while 22 cases, both operative and non-operative, occurred during the puerperium. He concludes that pregnancy does not predispose to the development of an appendicitis. If appendicitis has previously existed there is usually a recurrence of the attack during pregnancy, and it runs a more grave course, as evidenced by perforation and abscess in 50 per cent. of the cases. The uterus, adnexa, and uterine contents may readily become infected during pregnancy from an appendiceal abscess. The same surgical principles are applicable when the complication of pregancy exists as in uncomplicated cases. Operation itself does not disturb pregnancy. Every care should be employed not to disturb the pregnant uterus during operation, for the prognosis improves with the amount of time which elapses between the operation and the abortion or labor.

72. **Hernia of Female Pelvic Floor.**—In the case reported by Keiller the whole vagina was everted, the infravaginal cervix uteri and its os, occupying very nearly the center of the tumor. There was no marked erosion of the vaginal mucosa. The hernia contained two-thirds of the contracted bladder, the lower three inches of the uterus, and half of the urethra: the whole vagina, which was completely everted, at least four inches of a much-elongated uterus, the canal, and 5 cm. of rectum, as well as the uterovesical and rectovaginal pouches of peritoneum. The fundus of the uterus was only slightly lower than normal.

Journal of Nervous and Mental Disease, New York.

March.

76 *Thyroid Metastasis to the Spine. F. X. Dercum, Philadelphia.
77 Sarcoma of the Cerebellum; Sarcomatous Infiltration of the Spinal Pia. F. X. Dercum, Philadelphia.
78 Brown-Sequard Paralysis, Due to a Fall on the Head; Operation; Recovery. W. C. Krauss, Buffalo, N. Y.
79 Case of Ascending Unilateral Paralysis. L. Newmark, San Francisco.
80 Diffuse Gliosis of the Cerebral White Matter in a Child. W. N. Bullard, and E. E. Southard, Boston.

76. **Thyroid Metastasis to the Spine.** The patient whose case is reported by Dercum suffered from a goiter for some years. This gradually became so large that the gland was removed. The patient made a good recovery. One year after the operation she began to suffer from pains, sharp and shooting in character, distributed generally throughout the body. These pains were followed by a gradual and progressive wasting of the muscles, with contraction of the extremities. The patient died from edema of the lungs. On opening the spinal canal and removing the cord a tumor was found involving the fourth and fifth cervical vertebræ, pressing on the cord and involving the dura mater. Involving the second lumbar vertebra there was a smaller tumor without adhesions to the dura. The tumor was made up of thyroid tissue. All the sections revealed the aveoli of the thyroid gland, some of them large and some of them medium-sized; others very small. All revealed the typical structure of these aveoli lined by a single row of cubical epithelium and all were filled with the characteristic colloid material. The dura was much thickened and tracts of fibrous tissue could be seen leaving the dura and spreading among the acini. Sections of the cord revealed marked areas of degeneration.

Detroit Medical Journal.

February.

81 Strain as a Factor in Cardio Aortic Lesions (To be concluded.) H. B. Anderson, Toronto.
82 Treatment of Chorea. D. Inglis, Detroit.
83 The Dose Problem. W. L. Waugh, Chicago.
84 Repair of Cervical Lacerations Without Stitches. M. B. Van Baalen, Detroit.
84½ Case of Acute Mastoiditis. E. J. Bernstein, Kalamazoo

Colorado Medicine, Denver.

February.

85 Early Days in the Practice of Medicine in Colorado. H. W. Allen, Boulder.
86 Cancer of Lip and Face. W. W. Grant, Denver.
87 Asthma. J. B. Arneill, Denver.

Cleveland Medical Journal.
February.

88 Chloroform Discovered by Dr. Samuel Guthrie, an American Physician. A. G. Hart, Cleveland.
89 Function of Therapeutic Exercises in Lateral Curvature. H. O. Feiss, Cleveland.
90 Management of Occipito-Posterior Positions. A. H. Bill, Cleveland.

Chicago Medical Recorder.
February.

91 Ignorance as a Cause of Disease and Disaster. D. Lewis, Chicago.
92 Empyema. C. J. Drueck, Chicago.
93 Differential Diagnosis Between Some of the Serious Sequelæ of Purulent Otitis Media. F. Allport, Chicago.
94 Medicine. M. J. Seifert, Chicago.
95 Treatment of Stammering. E. L. Kenyon, Chicago.

Alienist and Neurologist, St. Louis, Mo.
February.

96 Genius and Degeneration. H. E. Lewis, New York.
97 Further Views of the Virile Reflex. C. H. Hughes, St. Louis.
98 Relations Between Physical Diseases and Mental Disorders. L. W. Weber.
99 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. (Continued.) J. G. Kiernan, Chicago.
100 Erotic Symbolism. (To be continued). H. Ellis, Cornwall, England.
101 Rodonalgia Phalanx or Phalanges or Finger Erethromelalgia with a Theory of Causation. C. H. Hughes, St. Louis.

Journal of the South Carolina Medical Association, Charleston.
February 24.

102 Remarks on Gallstones. L. Peters, Columbia, S. C.
103 Acute Bronchopneumonia. J. F. Williams, Roebuck, S. C.
104 Puerperal Fever. C. C. Gambrell, Abbeville.
105 Diseases of the Heart. J. B. Britt, Troy.
106 Acute Glossitis. R. G. Hamilton, Converse.
107 Aphorisms. J. L. Dawson, Charleston.

Fort Wayne Medical Journal-Magazine.
February.

108 Value of Drugs Given Internally in Gonorrhea. E. E. Morgan, Ft. Wayne.
109 Treatment of Chronic Posterior Urethritis. B. Van Swearingen, Ft. Wayne.
110 Etiology and Symptomatology of Arteriosclerosis. A. P. Buchman, Ft. Wayne.

Journal of the Mississippi State Medical Association, Vicksburg.
March.

111 President's Address Clarksdale and Six Counties Medical Society, Duties of the Physician. S. W. Glass, Dublin.
112 Our Experiences and Our Failures. J. J. Slack, Friars Point.
113 Malaria. H. X. Richardson, Lyman.
114 Tubal Pregnancy. T. M. Dye, Sherard.

Journal of Cutaneous Diseases, New York.
March.

115 Additional Observations on the Use of Roentgen Rays in Dermatology. H. W. Stelwagon, Philadelphia.
116 Classification of Bullous Diseases. J. T. Bowen, Boston.
117 Bullous Affections and Their Classification. E. B. Bronson, New York.
118 Warty Growths, Callosities and Hyperidrosis and Their Relation to Malpositions of the Feet. W. A. Hardaway and N. Allison, St. Louis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
March 10.

1 Midwifery of the Present Day. P. Horrocks.
2 *Necessity for Immediate Diagnosis in Cancer of Uterus. T. Wilson.
3 *Enucleation of Fibro-Myoma of Uterus During Pregnancy. J. Stewart.
4 Occipito-Posterior Presentation. G. Geddes.
5 Ophthalmology; Past and Present. S. Snell.
6 Rhythmical Variations in Cerebrospinal Pressure. E. G. Kensington.
7 *Atrophy of the Phalanges of the Hands with Joint Lesions. B. Watson.
8 Deformity of Lower Limbs. E. F. G. Tucker.

2. **Cancer of Uterus.**—According to Wilson, in one out of every four women who die of malignant disease the uterus is the organ affected. Until Dec. 31, 1905, he had performed 48 vaginal hysterectomies for cancer of the uterus, with one death following the operation. In 40 of these cases, including the fatal one, the operation was done for cervical cancer, so that the immediate mortality of the operation for this variety works out at 2.5 per cent. Reckoning that a term of five years' freedom from recurrence is equivalent to a definite cure of the disease, vaginal hysterectomy leads to the definite cure of one-third of the cases in which it is employed. Wilson states that if the methods of examination at our disposal are given a chance, cancer of the uterus can be diagnosed at its very beginning, and for some time after its commencement the disease can be cured in a large proportion of cases by the aid of surgery. The result of the examinations must be conclusive. When any doubt exists, immediate recourse should be had to the microscopic examination of portions of tissue removed in a systematic manner for the purpose. When the diagnosis is made no delay should be permitted in making the necessary arrangements for operation. The goal to be desired, says Wilson, is diagnosis within three days of the appearance of the first suspicious symptom and operation within a week after the diagnosis. The early symptoms and diagnostic methods are described in detail.

3. **Enucleation of Fibromyoma During Pregnancy.** Stewart reports a case of sessile fibromyoma attached to the left of the fundus uteri which he removed during the sixth month of pregnancy. The patient had no uterine contractions or pain of any moment, although there was a considerable injury to the wall of the uterus, neither were the fetal movements interfered with in any way. Stewart attributes this to the fact that no antiseptics were used.

7. **Atrophy of Phalanges.**—The feature of the case reported by Watson is the unique condition of the patient's hands. The skiagraph shows that the phalanges of both hands have been almost completely absorbed. The fingers, in consequence, have shortened materially, and as the skin surface has not lessened appreciably in extent, a peculiar appearance is presented which Watson calls a telescoping of the digits. The skin of the whole body is somewhat bronzed. The power to move the fingers is lost, and there is considerable limitation of the movement of the wrists. The knees are almost completely fixed in the semiflexed position, and when moved crepitation can be felt. The shape of the joints is not greatly affected and no osteophytes are perceptible. No other joints are involved. This condition followed an attack of acute rheumatism. The patient's general health is not affected.

The Lancet, London.
March 10.

9 Phlebitis and Thrombosis. W. Haward.
10 Epidemic Disease in England—The Evidence of Variability and of Persistency of Type. W. H. Hamer.
11 Spirochæta Pallida (Spironema Pallidum) in Syphilis. (To be continued). T. Sheenan.
12 *Spirochete Found in Syphilitic Lesions. G. M. O. Richards and L. Hunt.
13 *Observations on the Animal Reactions of the Spirochete of the African Tick Fever. A. Breinl, and A. Kinghorn.
14 *Presence of the Spirochæta Pallida in Syphilitic Lesions. L. S. Dudgeon.
15 Case of Impotence; a Problem in Diagnosis. C. A. Mercier.

12. **Spirochete of Syphilis.**—Richardson and Hunt believe that the *Spirochæta pallida* is the real specific organism of syphilis, and that the organisms described as *Spirochæta refringens* are polymorphic forms of the same organism, occurring only on the surface where the disease is manifested by its external lesions. They state that they have never yet seen *Spirochæta pallida* in the primary lesion without seeing many more refringens, hence they regard this organism as diagnostic of *Spirochæta pallida*. All their attempts to grow the organism in broth, agar, or blood serum from the blood of patients in which they have previously found the spirochete have failed.

13. **Spirochete of African Tick Fever.** Breinl and Kinghorn have been able to infect with the spirochete of African tick fever in addition to monkeys, a horse, a dog, rabbits, guinea-pigs, rats and mice. The rabbits, rats, mice and some of the guinea-pigs have succumbed to the infection. These experiments lead to the conclusion that the spirochete of the African tick fever differs from the *Spirochæta obermeieri*. While the animal reactions are different from those of the *Spirochæta obermeieri* the pathologic anatomic lesions are the same as those described in human beings who have succumbed to the infection by *Spirochæta obermeieri*.

14. **Spirochete of Syphilis.**—Dudgeon records observations made on twenty cases of primary, secondary, tertiary and congenital syphilis. In every case the surface of the syphilitic lesion was cleansed carefully and then firm pressure was applied for

short space of time until a small quantity of serum was evacuated. The spirochete was found in six cases of primary syphilis, in two of secondary syphilis, in one case of tertiary syphilis and in three cases of congenital syphilis. Dudgeon says that whether or not these changes are dependent on the *Spirochæta pallida* requires the necessary proof before it can be accepted.

Journal of the Royal Army Medical Corps, London.

February.

16 *Methods Employed in the Campaigns Against Typhoid Fever in Germany. E. D. W. Greig.
17 Bubonic Plague in Cape Colony. J. A. Mitchell.
18 *Rapid Means of Sterilizing Water for Troops by Using "Thermit" as Fuel. H. C. Ross, Royal Navy.
19 Notes on the Health of Europeans and Natives in Peking. F. E. Gunter, R.A.M.C.
20 *New Method of Charging Bunsen Batteries for X-Ray Work. M. C. Beatty, R.A.M.C.
21 Kala-Azar. J. C. McKenzie, R.A.M.C.

16.—See THE JOURNAL, March 3, 1906, page 673.

18. **Rapid Sterilization of Water.** Ross proposes to sterilize water by using thermit, a powder of blackish gray consistency composed of a mixture of aluminum and either ferric or ferrous oxid. The thermit process produces about 4,400 degrees of heat in thirty seconds. When a small quantity of a reagent such as the peroxid of barium or chromium is placed on the surface of the mixture and a match is applied combustion takes place, together with the liberation of free iron in a molten condition and the production of intense heat. About half the thermit turns into iron and the other half into what is known as slag, which is composed of oxid of aluminum. The method and apparatus employed by Ross for sterilizing the water are described in detail.

20. **Charging Bunsen Batteries for X-Ray Work.**—Beatty washes two or three ounces of crystals of potassium bichromate in water. They are then drained and placed in a glass funnel. Concentrated nitric acid is filtered through these crystals (which after washing and drying can be used again) into porous pots. The containing jar is charged with a saturated solution of ammonium chlorid to the height of the nitric acid. This battery can be kept in the *x*-ray room as there is a total absence of nitrous fumes until the acid is nearly exhausted, which will not be for about two hours after starting. The consumption of zinc is reduced to a minimum and there is no need for the tedious process of amalgamation. The porous pots last much longer and the method is cheaper because there is not the constant outlay for mercury and sulphuric acid. After use the acid should be replaced in loosely stoppered bottles and used again until a total of about one and three-quarters hours of active work has been taken from it, after which it should be thrown away. The ammonium chlorid solution can be kept indefinitely, a few crystals being added occasionally to keep it saturated. The zinc, porous pots and carbon blocks are washed in warm water and allowed to dry. The volts and amperes of the battery remain the same as in the common method.

Journal of Tropical Medicine, London.

March 1.

22 Tick Fever. P. Ross.

Glasgow Medical Journal.

March.

23 Heredity and Disease. R. Stockmann.
24 Round-cell Sarcoma of the Brain Situated in the Frontal Lobes, and Beginning with Mental Symptoms. J. L. Steven.
25 *Case of Typhoidal Cholecystitis. J. W. Findlay and R. M. Buchanan.

25. **Typhoidal Cholecystitis.** Findlay and Buchanan report a case of typhoidal cholecystitis in which the usual symptoms of typhoid were absent, and in which the *Bacillus typhosus* was isolated during life from the cystic and intestinal contents.

Semaine Médicale, Paris.

26 XXVI, No. 8.) *Des abcès sous-phréniques (under the diaphragm). P. Carnot.
27 Organisation du service sanitaire de l'Ile de Cuba.
28 No. 9.) *Les formes frustes de l'iléus. F. Lejars.

26. **Subphrenic Abscesses.** Treatment is exclusively surgical, but it must gives indications so that the physician can diagnose a subphrenic abscess early and thus guide the surgeon in his intervention. He also discusses the etiology and ways in which the abscess can develop.

28. **Incomplete Ileus.**—The cases of incomplete, abortive ileus to which Lejars refers may be the result of other intra-abdominal lesions, in which case they may mask the primary trouble; or they may be consecutive to mechanical obstruction of the intestine, or they may be of paralytic or spasmodic origin. He discusses each of these three types, giving the history and citing examples of each. In conclusion, he emphasizes the fact that notwithstanding their apparent harmlessness and their intermissions of subsidence, they frequently prove fatal, as they entail death from stercoremia. This condition should always cause alarm and command the strictest therapeutic vigilance. The absorption of toxins continues and the poisoning persists so long as normal function is not restored, the meteorism entirely subsided, circulation through the intestine freely re-established and peristalsis restored. A precise, detailed diagnosis should not be waited for. It is generally impossible, as there is no specially dilated loop or local resistance such as are observed in complete, classic ileus. On the contrary, there is uniform and total meteorism and a generalized paralytic distention of the bowel. Not every case requires surgical interference, but long waiting and waste of time are as pernicious in the incomplete as in the complete forms of ileus. The danger is not so urgent, but it is none the less continuous and progressive. Morphin and atropin are liable to allow the favorable moment for intervention to pass unobserved. Lavage of the stomach and high injections into the intestines are useful measures, but should not be kept up too long. The best medical measure is electricity. Applied internally to the bowels, it has a peculiarly effectual action in these cases of dragging, abortive ileus, which always are due in some measure to functional disturbance in the intestinal musculature. It is more effective the earlier it is applied, and has proved very successful in his hands. He advises using electricity as a regular routine procedure from the first, not waiting until it is the last resort before operative interference. Paresis of the bowel and the resulting passive distension play a large part in the development of the ileus, and they are liable to yield to electricity. If this fails and if the intestine remains uniformly distended and inert, surgical intervention should follow at once, without waiting for signs of general intoxication. An early laparotomy meets with good conditions if done before the intestine becomes merely an inert canal, incapable of function, and before the stercoremia becomes irremediable.

Beiträge z. klin. Chirurgie, von Bruns', Tübingen.

Last indexed, page 993.

29 (XLVII, No. 2.) Die Ergebnisse von 241 Peritonitis-Operationen. W. Noetzel.
30 Ueber subcutane Nierenverletzungen, insbes. über traumatische paranephritische Ergüsse und traumatische Pyonephrosen (injuries of kidney). F. A. Suter.
31 Operative Behandlung von Zwerchfellwunden (injury of diaphragm). Id.
32 Zur Klinik und Chirurgie des Hirn-Abscesses (of brain). W. Bibrowicz.
33 Zur operativen Behandlung des schmerzenden Hohlfusses (painful instep). F. Wette.
34 Ueber die chronische Entzündung der Mundspeicheldrüse und ihrer Ausführungsgänge (inflammation of salivary gland and its outlet). F. Kroiss.
35 (No. 3, Dedicated to Garré.) Changes in Bony Framework of Foot After Removal of Talus. Veränderungen am Fussskelett nach Talusexstirpation. R. Stich (Königsberg).
36 *Ueber ektopische Inguinal-Hernien. A. Ebner (Ib.)
37 *Heilung einer Nieren-Fistel nach Pyonephrotomie in der Gravidität durch Ureteren-Katheterismus. T. Cohn.
38 Psoas-Hematoma bei Hemophilie. H. Moses.
39 *Ueber operative Verletzungen des Ductus thoracicus (injury during operation). E. Unterberger.
40 Fall von Atlas-Luxation mit Abbruch des Zahnfortsatzes des Epistropheus. M. Romm.
41 *Zur Kasuistik der inneren Hernien speciell der Hernia foraminis Winslowii. Detkeskamp.
42 *Zur Chirurgie der Gallenwege (of biliary passages). A. Stieda.
43 *Zur Behandlung der Kniegelenks-Tuberkulose (of knee). M. Drandt.
44 Zur Pathogenese der subcutanen Darm-Rupturen (of intestines). Runge.
45 Zur Technik der Erzielung tragfähiger Diaphysen-Stumpfe ohne Osteoplastik. Id.
46 Ueber Gefässgeräusche in der rechten Hälfte des Epigastriums (vascular murmurs in right half of epigastrium). F. Müller.
47 *Zur Frage der Osteotomie des Genu valgum adolescentium. Paetzold.

36. **Ectopic Inguinal Hernia.**—Ebner has found 23 cases of this condition recorded in the literature and reports a case in which he operated. He refers to an article published in this country which mentions 27 cases.

37. **Cure of Fistula into the Kidney.**—In Cohn's case the fistula was a sequel of pyonephrotomy. The patient was a woman of 26, with idiopathic, acute pyelitis at the third month of pregnancy. About ten liters of thin, fetid pus were evacuated from the kidney by the nephrotomy and the pregnancy proceeded normally to delivery, though the kidney fistula persisted. After her recovery, the ureter proving to be impermeable, it was catheterized at intervals of three days for a few times. The fistula was then artificially closed.

39. **Operative Injury of Thoracic Duct.** Unterberger describes a case in which the subclavian vein and thoracic duct were injured during an operation. The latter was ligated and the former sutured. There was slight chylorrhea for a time, but conditions were soon restored to normal. He summarizes 29 cases of operative injury of the thoracic duct, which he has been able to collect from the literature. The oozing out of a milky fluid is the one constant sign of such an injury, he says, and ligature is the best way to treat it.

41. **Internal Hernia.**—Delkeskamp relates the particulars of a case of intra-abdominal hernia in the foramen of Winslow. The patient was a healthy woman of 22. Immediately after a normal childbirth signs of intestinal obstruction developed, the symptoms growing progressively worse until the abdomen was opened seven days after delivery. Conditions were righted without much difficulty, curing all symptoms at once.

42. **Surgery of the Biliary Passages.**—In this long article Stieda reviews the 140 operations on the biliary passages done by Garré during the last decade. He first gives Garré's rules governing surgical intervention, and then summarizes the details of the various groups of cases. In conclusion, he remarks that whether cystotomy or cystectomy is indicated depends on the contents of the gall bladder and the findings in the gall bladder and cystic duct during operations for gallstones. Cystostomy is a compromise operation. It may take the place of cystotomy in case it is desired to retain the gall bladder, but there is no certainty that all the stones have been removed, especially when the concrements are exceptionally numerous. Cystotomy should be done instead of cystectomy, when there are serious technical reasons against the latter or when the general condition of the patient is too bad to allow it. In the cases without stone formation, treatment should be as radical as possible. In case of carcinoma of the gall bladder a palliative cystectomy may be justified under certain circumstances. The rare cases of carcinoma in the region of the common bile duct offer favorable chances for a radical cure.

43. **Treatment of Tuberculous Processes in the Knee.**—Draudt states that out of 252 cases of tuberculous processes in the knee, treated by operative measures at Königsberg, the ultimate outcome has been a success in 92.3 per cent., with only 7.7 per cent. bad results. The limb was not shortened in more than 17 per cent., and only for 1 cm. in over 15 per cent.; for 2 cm. in nearly 24 per cent., and for 3 cm. in more than 16 per cent.

47. **Osteotomy for Genu Valgum in Young Adults.**—Paetzold has been examining recently 47 patients operated on at Königsberg for this condition. He discusses the technic and results, proclaiming that osteotomy with hammer and chisel is the simplest, safest and most rational mode of treatment. It is important to determine whether the femur or the tibia is responsible, and radiography alone will decide the question and show which bone is to be operated on. The ultimate results in his cases demonstrate that the course of the line of division through the joint is the criterion. The aim should be to maintain or to restore a perpendicular line of division (Gelenkspalte). If this line of division slopes from the side above to the middle below, then the curvature is in the femur, and femur-osteotomy will produce a perpendicular line of division. If the line of division is straight to start with, then the tibia is in fault, and tibia-osteotomy alone is able to insure a straight, useful leg. If the curvature affects both of the bones, then the tibia should be operated on in mild cases or both bones in the severer ones. The main point is to keep the line of division perpendicular.

Berliner klinische Wochenschrift.

48 (XLIII, No. 6.) *Ueber chronische progressive Chorea (Huntington) in jugendlichen Alter. F. Lange.
49 Utilization of Various Kinds of Sugars by Diabetics.—Ausnutzung der verschiedenen Zuckerarten bei Diabetikern. V. Pettiti (Naples).
50 Zur Typhus-Diagnose mittels des Typhus-Diagnostikums von Ficker. M. Meyerhoff.
51 *Die physikalische Behandlung der habituellen Obstipation. E. Tobias.
52 *Die Endoskopie der Harnröhre (of urethra). H. Goldschmidt (Berlin).
53 *Indikationen der Roentgen-Behandlung bei Haut-Erkrankungen (cutaneous affections). C. Bruhns.
54 (No. 7.) *Ueber afrikanischen Recurrens. Robert Koch.
55 Ueber Parasiten-Befunde in Blut-Präparaten eines Gelbfieberkranken (parasites in blood of yellow fever patient). M. Schüller (Berlin).
56 *Experimentelle Haut-Tuberkulose bei Affen (cutaneous tuberculosis in monkeys). G. Barmann and L. Halberstaedter.
57 Acute aufsteigende (Landry'sche) Paralyse nach Typhus abdominalis mit Ausgang in Heilung. A. Schutze.
58 Noch einmal zur Einspritzungsbehandlung der Neuralgien (alcohol injections). F. Ostwalt (Paris).
59 *Zur Einteilung des Morbus Brightii. J. Vogel.

48. **Chronic Progressive Chorea in Youth.**—Lange gives the particulars of a case of Huntington's chorea in a young man whose father had suffered from the same affection. In the latter it commenced soon after a trauma when he was at the age of 48. It began in the youth soon after his two years of military service, during which he had been a constant butt of ridicule and abuse for his awkwardness.

51. **Physical Treatment of Habitual Constipation.**—Tobias describes in detail his technic for application of hydrotherapy, massage and exercises in the treatment of constipation. If due to atony of the bowels, he says, various forms of contrast hydrotherapy and food to stimulate the bowels are required. In the spastic form of constipation, all stimulating measures should be avoided. The best procedure is generally a cold wet pack once a day for thirty minutes, colder each day and the time lengthened to an hour or an hour and a half, concluding with a general douche of cold water under gentle pressure, or the douche may begin warm and be gradually cooled. In case of atony, treatment should be suspended frequently, in case of spastic constipation it should be pushed until benefit is apparent.

52. **Endoscopy of the Urethra.**—Goldschmidt distends the urethra with air or water, after which it is easy to inspect the interior with an apparatus devised on the same principle as the cystoscope. Slight distension is sufficient for the purpose.

53. **Roentgen Treatment of Cutaneous Affections.**—Bruhns expatiates on the great value of Roentgen treatment, the results far surpassing, he thinks, those of other methods, in the treatment especially of dry chronic eczema, chronic circumscribed neurodermitis, local pruritus, verrucous lichen ruber, favus, syeosis, chronic furunculosis of the back of the neck, acne keloid, psoriasis, hyperidrosis, multiple juvenile warts, fungoid mycosis, rhinoscleroma and, to some extent, in the treatment of cancer. In certain other affections, erythematous lupus for instance, good results from Roentgen treatment are sometimes but not so regularly observed. He affirms that the cautious use of the Roentgen rays under the present technics is so free from injurious effects that it should be used without hesitancy even in the milder cases of the above affections.

54. **African Relapsing Fever.**—Koch gives illustrations of the tick which serves as the intermediate host for the spirochete causing relapsing fever in Africa, also of the spirochete, and relates other results of his recent research work in the tropics. Quinin has no effect in relapsing fever, but trypan red seems to display a certain specific action on the trypanosoma and may prove useful in prophylaxis and treatment. The prospects of serum treatment also seem promising as the immunity conferred by one attack is so complete. He has learned the habits of the tick host, finding that it lurks under dry shelters. By pitching the tent in a new place every time on the caravan route, a little distance apart from the long built

shelters under which the ticks were numerous, his party avoided relapsing fever entirely, while 4 of the 5 non-immune persons accompanying them, who slept in the shelters, contracted the disease.

56. **Cutaneous Tuberculosis in Monkeys.**—The experimental research described was conducted in Batavia by individuals who had gone there to study syphilis in monkeys. The tuberculous cutaneous lesions differed completely from the lesions observed in monkeys inoculated with syphilis, resembling in many respects similar lesions in man. The effects of tuberculin treatment are briefly mentioned in this merely preliminary communication.

59. **Classification of Nephritis.**—Vogel commends Senator's classification of cases of nephritis. He distinguishes three forms, the acute, the chronic with and the chronic without induration. He distinguishes further in acute nephritis between the parenchymatous and the diffuse forms. Chronic nephritis with induration can be classified as the form with secondary induration (secondary contracted kidney), the primary indurative (chronic interstitial), and the form with arteriosclerotic induration.

Centralblatt f. Chirurgie, Leipsic.

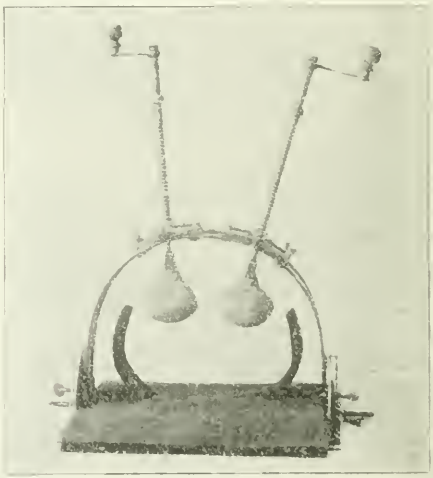
Last indexed, page 839.

60 (XXXIII, No. 7.) Zur Technik der Blinddarm Operation (appendicectomy). J. Hahn. Id. H. v. Haberer.
61 Short Incisions for Laparotomies.—Kleine Bauchschnitte. A. Bier (Bonn).
62 Torsion of Omentum Tumor in Not Recognizable Hernia. Der gedrehte Netztumor im nicht erkennbaren Bruche. Riedel (Jena).
63 *Die alimentare Therapie der nach Cholecystostomie auftretenden Gallen-Fistel. H. Gross.
64 (No. 8.) *Ueber Iod-Benzine-Disinfektion. Heusner (Barmen).
65 (No. 9.) Nasen-Rachen-Tumoren und perorale Tubage (tumors in nasopharynx and intubation through the mouth). F. Kuhn (Kassel).
66 *New Instrument to Obtain Urine from Kidneys Separately. Ein neuer Separator für den Urin beider Nieren. Heusner (Barmen).

63. **Alimentary Treatment of Bile Fistula.** Gross describes his experience with a patient who had a profuse flow of bile through a fistula resulting from a cholecystostomy. After several weeks of this loss of bile Gross checked it by instituting the "alimentary course of treatment" recommended by Jaboulay and Patel. They found that the flow of bile could be checked and the healing of a fistula promoted by preventing the accumulation of bile in the natural reservoir for it, the gall bladder. This they accomplished by not leaving a long interval between meals. The meals were given at three-hour intervals, the patient being waked to eat twice between midnight and dawn. Gross ordered his patient to eat every three hours, night and day, and in twenty-four hours the amount of bile escaping by the fistula had been reduced by one-half. By the end of the ninth day scarcely any secretion escaped through the fistula, and five days later the flow had entirely ceased and the fistula soon healed over. The immediate success in this case, after weeks of persistence of the flow of bile, was too striking to be merely a coincidence.

64. **Iodin-Benzin Disinfection of the Hands and Skin.** Heusner describes a new method of disinfecting the hands and skin which he believes is destined to banish soap and water from surgical disinfection. He has been using it exclusively for the last six months, and the results have far surpassed those obtained with any other technic, while the saving in time, labor and expense would place this method above all others to date even if the results were only equal instead of being superior. A 1 per thousand solution of iodin in benzin is used in the place of the hot water, alcohol and sublimate disinfection. The cleansing and disinfecting properties of benzin render it an ideal substance for the purpose, he asserts, and the addition of the iodin enhances the disinfecting power. About 300 c.c. of the iodized benzin is poured into a basin, and the hands rubbed with a brush for five minutes. (The patient's skin is scrubbed with a gauze sponge). The hands are then rinsed in a fresh basin of the iodized benzin and wiped dry with gauze sponges, and then rubbed over with 2 per thousand iodized vaselin. When the surface to be disinfected is very sensitive, as around the genitals, 50 per cent. paraffin oil is added to the iodized benzin. It blends perfectly with it and prevents all possible irritation. The only drawback from this method of disinfection is the inflammability of the benzin, but precautions can be taken accordingly. The very slight brownish stain left on the hands soon vanishes. In spite of its high bactericidal power iodin is much less toxic than sublimate. It dissolves better in benzin, paraffin oil and vaselin than in water. The hands can be wiped off from time to time with the iodized benzin during the operation, the small amount left clinging to the hands not affecting the field of operation, which can even be wiped off with the benzin after the suture is finished.

66. **New Separator for Urine.**—Heusner's simple contrivance insures the segregation of the urine from each kidney by pressure from without on the ureters in turn. Both Nicolich and Bier have called attention to the fact that it is possible to interrupt the flow through the ureter by compressing it. The point where compression is most effectual is in the niche at the side of the fifth lumbar vertebra, where the ureter passes over the hill formed by the iliacus muscle. The patient lies on a flat standard (see illustration) which has two curved, adjustable arms to hold the trunk firm. A metal arch above carries two large pads, corresponding to each ureter, mounted on a long slanting stem with a screw thread and crank handle. This allows the pads to be screwed down on the trunk with



great pressure. The center of each pad corresponds to a point two finger-breadths above the umbilicus, their inner edge a finger-breadth from the median line. One pad is screwed down to compress one ureter and the urine secreted during a given time is collected through a catheter in a graduated vessel. The test is then applied to the other kidney. The compression is not removed from the first ureter until the cessation of all flow of urine through the catheter shows that the closure of both ureters is complete. The first pad is then raised. The findings coincide with those of other tests. Heusner has never observed any inconveniences from this test except a transient tenderness and elimination of a little blood when a diseased ureter was compressed too hard and too long.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 839.

67 (XXX, No. 7.) *Ueber Carruncula vulvae. J. Veit (Halle).
68 *Ein Verbesserter sich selbst haltendes Bauch Spekulum (self-holding retractor). Stoeckel (Berlin).
69 *Operativ Korrektur von Deviationen des Uterus durch Verkurzende Plastik der Ligg. rotunda per laparotomiam (fibro fibröse indirekte Fixierung). M. Sperling (Königsberg).
70 Fall von Fibroma ovarii. C. Rindfelsch.
71 *Zeit des Eintritts der ersten Menstruation nach einem Abort. B. Englander (Warsaw).
72 (No. 8.) *Einiges über die Pubiotomie (Hebeotomie). M. Henkel. Id. Knorrer. Id. L. Seeligmann. Id. P. Jessen (Davos). Id. Kannegiesser.
73 (No. 9.) *Fall von leukämischen Verblutungstod bei einer Schwangern (fatal leukemic hemorrhages in pregnancy). Rostetter.

74 *Die graphische Methode in der Gynäkologie und ihre Anwendung zur Bekämpfung des Gebärmutterkrebses (application in war against cancer). R. de Seigneux (Geneva).
75 *Zur Wirkung der Radium-Strahlen auf inoperable Karzinome. Schücking (Pyrmont).
76 Aus der geburtshilflichen Praxis (3 unusual obstetric cases). J. Goldenstein.

67. **Garrulitas Vulvae.**—Veit found in one case in which a woman complained of rumbling in the vulva that a gas-generating microbe was present in the vagina. He, therefore, tamponed the vagina with glycerinated gauze which destroyed the microbes and soon freed the patient from the annoyance of which she complained. In 3 other cases he applied the glycerin tampons without taking the trouble to make a bacteriologic examination, and the prompt cure confirmed the correctness of his diagnosis.

68. **Self-Holding Speculum.**—Stoeckel invented four years ago a broad retractor to fit over the lower part of the abdominal incision and to be held in place by a cord and a weight below the level of the table. It is in use in several German clinics, and has proved very satisfactory. He now presents an improved form of this retractor which, as shown in an illustration, has two additional retractors attached, for the sides of the incision, at right angles to the first retractor. They are carried by two crossbars on the handle of the first retractor, and can be spread and fastened at any width desired, the whole thus automatically holding the lower part of the wound wide open.

69. **Shortening Ligament to Correct Displacement of Uterus.**—Sperling isolates the round ligament from its peritoneal envelope, working through a laparotomy incision. He then takes up a loop in the round ligament and another in the peritoneal cover and sutures the two together, leaving the ends of the thread projecting at the top of the loops. These projecting ends from the loops on each side are then tied together in the median line over the anterior surface of the uterus, to which they are then fastened with two or three small stitches. Before opening the abdomen he introduces a return-flow catheter into the uterus and pushes it into a slightly anteflexed position, holding it in this position with a tampon in the vagina. He then proceeds to the laparotomy. After the incision is made an assistant takes hold of the catheter and pushes the fundus of the uterus up into the opening, where it is grasped with dressing forceps. The catheter is then withdrawn. He first described this "fibro-fibrous indirect fixation" in 1904, and time has confirmed its advantages. The technic here advocated is much simpler than that originally proposed, and he regards it as a great improvement. He uses silk exclusively for the sutures, and the entire operation does not require more than twenty or forty minutes. He describes his technic in detail and states that it is applicable to all cases except possibly those in which the retroflexed uterus is certainly absolutely movable, when low vaginal fixation or the Alexander-Adam operation might be preferable. Prolapse with movable retroflexion in women approaching or past the menopause he treats with high vaginofixation.

71. **First Menstruation After Abortion.**—Engländer found that menstruation recurred after four weeks in 64.9 per cent. of 57 women who had aborted in the first four months of pregnancy; at the fifth week in 14 or 24.5 per cent.; at the sixth week in 6 or 10 per cent., and in one case at the third week. It seems evident that the female organism reacts to an uncomplicated early abortion as to an ordinary menstruation. The interval before the following menstruation is lengthened by complications. If the abortion causes hemorrhage for a few days only, and the hemorrhage recurs in four weeks, it may be regarded as an ordinary menstruation. But if bleeding recurs irregularly at short intervals, it may be assumed that it is due to retention of relics of the abortion.

72. **Pubiotomy.**—Henkel writes from Olshausen's clinic to emphasize the importance of the indications for pubiotomy (extramedian symphyseotomy). It is such a simple and easily performed operation that it has been hailed as destined to banish craniotomy, prophylactic version, etc. He protests against this exaggeratedly optimistic opinion. Within the limits of its indications it is proving more and more valuable, but it should not be applied when the true conjugate diameter is 6.75 cm. or less with a flat pelvis, or 7.5 cm. with a generally contracted pelvis. If a woman with abnormally small pelvis has been in labor for a long time and has temperature, he would advise perforation of the living child, even in case of a primipara, rather than sawing the os pubis. An eclamptic primipara with contracted pelvis is not a proper candidate for pubiotomy, generally speaking, on account of the danger of injury of the soft parts. It is not an operation that can be done safely by the general practitioner, as serious complications, severe hemorrhage, etc., have occurred in the hands of even experienced operators. In conclusion, he reports a case which shows the value of the operation in certain conditions. The patient was a multipara with contracted pelvis, in whom the true conjugate diameter was from 7.75 to 8 cm., and whose previous pregnancies had been terminated by perforation of the fetus or abortion. The present pregnancy was complicated with placenta prævia centralis. The woman was safely delivered of a living child without abnormal hemorrhage by sawing the os pubis and then extracting the child by vaginal Cesarean section. The entire intervention, including the suture of the uterus, was completed in thirteen minutes.

Kroemer describes experiences which demonstrate that pubiotomy and artificial premature delivery do not exclude but mutually supplement each other. He discusses the preferable technic, as also Seeligmann, while Jessen reports a case in which the Gigli saw broke during the operation. Unable to complete it, he finished with a symphyseotomy. The hemorrhage when the point of the saw emerged near the labium major was so severe that it could only be controlled by suture. There was no hemorrhage from the symphyseotomy. The pelvis became enlarged to an extent of 6 cm. and the child was easily extracted with forceps without any force being used. As the head emerged the vagina tore at the part corresponding to the pubiotomy wound. The cervix was also lacerated at a corresponding point. The patient was a multipara with conjugate diameter of 8.5 in a flat rachitic pelvis. Recovery proceeded without complications, but the sawed part of the bone was still tender, without callus formation, when all else had healed. The saw broke in another case on record. Kannegiesser has been invariably successful in 18 cases with pubiotomy, and ascribes his success to his subcutaneous technic. He inserts a needle from above and works it down along the posterior surface of the os pubis and out through the skin outside of the labium major. The Gigli saw is then taken up by the needle and, as the latter is drawn back, the saw is drawn into place ready for the sawing. He is careful to pull the skin to one side so that the wound in the skin will not be over that in the bone. He also refrains from touching the skin wound with the fingers, and closes it with collodion as soon as possible.

73. **Leukemic Hemorrhages During Pregnancy.**—A previously healthy primipara of 23 came to the clinic at the seventh month of pregnancy on account of hemorrhages. A physician had been treating her for a week for an abscess in the tonsil. The next day the patient became uneasy and complained of dyspnea. The pulse was 120, soft, and the temperature rose suddenly. The patient succumbed the same evening with symptoms of heart failure. The tonsils were found gangrenous in the center, the spleen was enlarged, and a large quantity of blood was found in the stomach and intestines, while other organs had a hemorrhagic aspect. Microscopic examination revealed the findings characteristic of leukemia. No one had thought of examining the blood during life.

74. **Graphic Records in Gynecology and Prophylaxis of Cancer.**—De Seigneux gives his gynecologic patients a little chart on which to record the particulars in regard to menstruation, pains and leucorrhea. These three factors form the syndrome common to all affections of the internal genitals in women. The syndrome differs only as one or two of the factors are more predominant, but this very predominance is of the utmost importance for differentiation of the affection in question. The little chart is easily kept posted to date and presents a bird's-eye view of the entire gynecologic conditions for the year. It is merely a strip of paper about 2 inches wide

by 15 long, which is marked off in squares somewhat finer than those of a temperature chart. Each row of squares represents a day, and each period of five days is marked off with a heavier perpendicular line, and each month with a still heavier one, the chart being calculated for a year. Under the name of each month are the dates over the heavy lines, 5, 10, 15, 20, 25, 30. Four heavy horizontal lines cross the chart, numbered at each end ½, 1, 2 and 3. The strip folds up into a small compass. The patient is instructed to mark with a pencil the squares corresponding to the date whenever she notes hemorrhage from the genitals, marking the top square on this date along the horizontal line numbered 1, if the hemorrhage is about that of ordinary menstruation, or only on the line numbered ½ if less than this. In case of pain an *x* is placed below the row of squares for the date, underlined if severe, and doubly or trebly underlined if unbearable. When the pain keeps up for several days a line can be drawn to connect the dates with the *x* below. A glance at the chart shows the regularity or irregularity of the menses, the exact duration of each period, the intervals between, the character of the hemorrhage, and of all other atypical hemorrhages with their duration, amount and frequency. Also whether the menstruation is accompanied by pain or not, the days on which the pain appeared, and whether it occurred outside of the menstrual periods, and whether moderate or severe. Periods of leucorrhea are designated by a horizontal line drawn above the chart, over the dates. A calendar chart of this kind enables the physician to detect trouble in its ineipiency and to get on the trail of the cancer of the genital regions when it first starts, and without frightening the patient. Women should be told to present these charts to the family physician or specialist every six months, and after the thirty-fifth or fortieth year, every three months. If medical students were taught to give out such charts to their patients and to train the latter to bring them for inspection at stated intervals, most important progress would be made in the war against uterine cancer. The day is coming, he thinks, when every well-informed woman will have some such chart and will make a point of going to her physician at regular intervals, as she now goes to her dentist, to have him examine her and see whether or not she is in good health.

75. **Radium Treatment of Inoperable Cancer.**—Schücking had only 3 mg. of radium at his disposal. He kept it in two capsules and applied them to an inoperable cancer of the uterus in a woman of 56. The growth filled the entire upper part of the vagina with a hard mass, extending into the pelvis, and was necrotic in parts. He applied the capsules for five weeks, changing their position frequently, holding them in place with gauze. The entire surface of the cancer was destroyed to a depth of several centimeters and around the edges down to sound tissue. The purulent necrosis entirely ceased, and healthy granulations developed, followed by healing over with scar tissue. The result was far better than could possibly have been obtained with the actual cautery or the curette.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

77 (XXXII, No. 5.) *Are Artificial Stimulants Required? Bedarf der menschliche Organismus künstlicher Reizmittel? Zunker (Berlin).

78 *Vaginal Cesarean Section and the "Surgical Era" in Obstetrics. —Ueber vag. Kaiserschnitt und die chir. Era in der Geburtshilfe. M. Hofmeier.

79 Suppuration Around Hypophysis, etc., in Epidemic Cerebrospinal Meningitis.—Ueber perihypophysenle Eiterung und einige andere bemerkenswerte Befunde bei Genickstarre. M. Westenhoeffer.

80 *Ueber eine neue Funktions-Prüfung des Magen-Chemismus während der Verdauungstätigkeit ohne Anwendung der Schlundsonde (Sahlische Desmoid Reaktion).—Test of Chemistry of Stomach. F. Kaliski.

81 Ueber Pyrodin Vergiftung bei Hunden (experimental anemia in dogs). M. Mosse. See mention on page 920.

82 Akute Struma als Folge von Seekrankheit (result of seasickness). A. Rosenfeld.

83 (No. 6.) *Ueber die häufige Kombination von Pulsus irregularis perpetuus mit Kammervenen Puls (ventricle vein pulse). H. E. Hering (Prague).

84 Der Desinfektions-Wert von Lysoform bei mässig erhöhter Temperatur (heating enhances disinfecting power). H. Schneider.

85 *Passive Congestion in Treatment of Acute Suppuration in Ear, etc. Die Bier'sche Stauung bei akuten Ohreiterungen. Ein neues Operationsverfahren bei Fällen akuter Mastoiditis. Stenger.

86 Experimenteller Beitrag zur Kritik der Siegelschen Syphilis-Uebertragungs-Versuche auf Tiere (transmission of syphilis to animals). Wechselmann.

87 *Fate of Foreign Chemical Substances in Body and their Elimination.—Das Schicksal körperfremder chemischer Stoffe im Menschen und bes. ihre Ausscheidung. L. Lewin. (Concluded.)

88 Ueber die bacilläre Dysenterie im Stadtkreis Barmen (1904-1905). H. Lüdke. (Concluded.)

77. **Does the Human Organism Require Artificial Stimulants?**—Zunker's short article, presenting affirmative views, is headed with the editorial note that reproduction of the article, even in an abbreviated form, is forbidden.

78. **The Surgical Era in Obstetrics.**—Hofmeier protests against the prevailing tendency to perform operations on the mother for the sake of the child. He remarks that the advocates of these surgical methods in obstetrics would soon think differently if it were possible for them to experience on their own body the consequences of such procedures. These may be required in eclampsia, but he does not recognize placenta prævia nor prolapse of the cord as indications for operative measures.

80. **Recommendation of Sahli Desmoid Test of Stomach Functioning.**—Kaliski joins in the chorus of commendation of this test of some of the gastric functions. (See abstract on page 760). His experiences with patients and controls suggest that the test can be used for finer differentiation than hitherto supposed. When the urine shows the effect of the stain in from four to seven hours, hyperacidity may be assumed. When the stain does not become apparent until after seven and up to twelve hours normal acidity may be assumed. Subacidity or motor insufficiency is indicated when the urine does not become tinted until the second day. He is still testing the desmoid reaction, preceding it with a test meal consisting of 200 gm. soup with the yolk of egg and white bread, 200 gm. calf's brains or sweetbread or fish, 200 gm. cauliflower, 150 gm. mashed potato, and 150 gm. preserved cherries.

83. **Combination of Positive Venous Pulse with Irregular Pulse.**—Hering expresses surprise that greater attention is not paid to the jugular pulse, whose curve is the only objective and certain clinical sign of tricuspid insufficiency. He has sometimes encountered it accompanied by regular heart action, at least occasionally regular. But he has never observed a permanently irregular pulse without the positive venous pulse (Kammervenenpuls—"ventricle-vein pulse"). In anemics, on the other hand, he never encountered the "ventricle-vein" pulse, but rather an "auricle-vein" pulse.

85. **Passive Congestion in Acute Mastoiditis.**—Stenger has been applying Bier's technic for artificial hyperemia in 11 cases of acute suppurative affections of the ear without, and in 7 with complications. His results were so good that he is inclined to believe that the Bier technic is destined to work a revolution in the treatment of acute mastoiditis, and other suppurative ear affections. He makes an incision for mastoiditis about 2 or 3 cm. long, loosens the periosteum and ligates the bleeding vessels. If no fistula is found he makes a small opening into the antrum and works a strip of gauze into this hole. The Bier aspirating jar is placed over the region and suction applied. The jar generally soon fills up with blood, pus and serous fluid and the soft parts swell, but there is no pain. The aspirating jar is held in place with a bandage. It is removed in about three hours unless filled before. It is applied again the next day after a new strip of gauze has been placed in the fistula. The jar is left in place for an hour or two each day until the secretion has entirely ceased and healthy granulations appeared.

87. **The Fate of Foreign Chemical Substances in the Body.**—Lewin discusses the elimination of foreign chemical substances by way of the various emunctories. He calls attention among other points to the intermittent way in which elimination is liable to occur, especially through the glands. This intermittent action is not sufficiently regarded in experimental research. He remarks in conclusion that for thousands of years physicians have striven to aid Nature by promoting the elimination of foreign chemical substances, but modern science is

neglecting this important branch of therapeutics. Better results would be attained, he states, if instead of devoting so much energy to the discovery of specific remedies and antitoxins, more attention were paid to stimulating the eliminating organs to energetic action on a more extensive scale by appropriate, individualized measures to this end.

Münchener med. Wochenschrift, Munich.

89 (LII). No. 2.) Difficulties in Removing Tracheal Tube.—Ueber das erschwerte Decanulement. V. Schmieden.
90 *Passive Congestion for Eye Affections.—Ueber Bierscher Stauungs-Hyperämie bei Augenkrankheiten. Renner (Munich).
91 *Weitere Untersuchungen über die Aetiologie der Syphilis. J. Siegel (University Institute of Zoology, Berlin).
92 Hypersusceptibility and Accelerated Reaction.—Ueberempfindlichkeit und beschleunigte Reaktion. C. v. Pirquet and B. Schick (Vienna).
93 *Nachweis von Typhus-Bakterien in eingesandten Blutproben (in samples of blood). R. Müller and H. Graf.
94 *Ueber Beeinflussung von Blutkrankheiten durch das Erysipel (influence on affections of the blood). E. Stadler.
95 X-Rays in Diagnosis of Esophagus Affections.—Ueber die diagnostische Verwertung der Roentgen-Strahlen und den Gebrauch der Quecksilbersonde bei Speiseröhrenerkrankungen. A. Cahn.
96 Zur Behandlung des Speiseröhren-Divertikels (of esophagus). Lotheissen.
97 Weitere Erfahrungen mit der Zyklo-Dialyse auf Grund von 56 Operationen (to establish communication between anterior chamber and suprachoroid space). Heine (Breslau).
98 Zur Methodik der Plattfuss-Diagnose (of flat foot). Schumann.
99 Zur Verhütung des Puerperal-Fiebers (prevention). Saradeth.
100 Urinal for Boys.—Urinfänger für Kindern. H. Finkelstein (Berlin).

90. **Passive Congestion for Eye Affections**—Renner applied Bier's constricting band to his own neck to study the effect on his eyes. The increased blood pressure in the veins of the head and consequently of the eyes which he experienced, he believes, might possibly be dangerous for elderly persons, and in his therapeutic application of the measure he excluded all patients over the age of 40. The improvement in 5 cases of parenchymatous keratitis was so striking that he is convinced that this treatment has a future in this affection. The band was applied for six or twelve hours a day for two or four weeks. No favorable results were noticed in eczematous phlyctenular and catarrhal ulcers of the cornea nor in cases of old opacity, but serpiginous ulcers of the cornea yielded more readily to treatment when the passive congestion was added to the usual measures. No inconveniences were observed in any case.

91. **Cytorrhyctes Luis as Agent of Syphilis.**—Siegel gives the particulars of the *Cytorrhyctes luis* in this profusely illustrated article, with the results of experimental inoculation of monkeys. He has modified the staining technic, and announces that an old, "well-ripened" solution of 1 part methylene blue with 2.5 parts borax and 100 parts distilled water gives clear, well-defined views of the parasites after ten minutes' contact with the sections, followed by simple rinsing under a strong stream of water. This stains the red corpuscles well, but leaves the blood plasm colorless, so that the parasites in the latter stand out distinctly. It is not necessary to waste time on sections of the organs, as the parasites show up equally well in blood, which is much more convenient for examination. He found the parasites constantly in the blood at the time of the exanthem in 20 syphilitics examined. The parasites vanished from the blood by the third week of inunction treatment. He succeeded in inoculating rabbits with syphilis, and the results resembled the picture of inherited syphilis in man. Inoculations of 30 white mice all resulted positively, the cytorrhyctes being found in the blood in all. The monkeys inoculated are still living and presenting new manifestations of the disease (eight months), so that the pathologic findings are not yet known. The three special characteristics of the parasite are its shininess, the distinct fission of the nuclei and the lighter colored edge, with flagella formation under favorable circumstances.

93. **Determination of Bacteria in Samples of Blood.**—Müller and Graf describe the simple technic followed at the Kiel Institute to determine the presence of typhoid or other bacteria in samples of blood sent in by physicians in dubious cases of typhoid.

94. **Influence of Erysipelas on Blood Diseases.**—The patient in the case described by Stadler was a woman in an advanced stage of pernicious anemia. She was a housemaid of 29 and the symptoms had attracted attention for about a month, growing rapidly worse until she lay in deep coma for five days, apparently moribund. Erysipelas then developed, spreading from the nostril over the face. By the second day the patient had regained consciousness, and her condition rapidly improved. In less than a week the erysipelas had run its course, but the improvement continued and complete health was rapidly regained. When first seen the reds numbered 792,000, with about 40 nucleated reds; the whites 2,600, and the hemoglobin was reduced to 20 per cent. Eighteen days later, the fourth day of the erysipelas, there were 3,000 of the nucleated reds, a total of 632,000 reds, 6,000 whites and 20 per cent. hemoglobin. Ten days later there were 2,288,000 reds, 60 nucleated reds, 4,000 whites, and 45 per cent. hemoglobin. The latter rose to 80 per cent. in the course of the following month. Stadler reviews a number of cases that have been published in which an intercurrent erysipelas was apparently responsible for the cure of the primary disease. Nyrop has reported a case of severe parenchymatous nephritis of four months' duration, and another of nine months, both taking an abrupt turn for the better with an intercurrent erysipelas.

Riforma Medica, Naples.

Last indexed, page 997.

101 (XXI, No. 41.) *Cura delle adeniti inguinali da ulcera venerea. G. Migliorini.
102 Chirurgia delle vie biliari. N. Giannettasio.
103 (No. 42.) *Negri Bodies in Rabies.—I corpi del Negri e l'infezione rabida da virus fisso a lento decorso. A. Bongiovanni.
104 La simbiosi sifilido-tubercolare del naso (of nose). L. Leto.
105 (No. 43.) *Osservazioni e ricerche batteriologiche sopra alcuni casi d'infezione tifoide con speciale riguardo alla dimostrazione degli anticorpi immunizzanti nel siero di sangue (antibodies in typhoid). A. Rossi.
106 *Una nuova ipotesi della patogenesi dell' ulcera semplice dello stomaco. N. Palermo.
107 (No. 44.) *Tumore mixosarcomatoso della capsula surrenale destra (of right suprarenal). F. Sicuriani.
108 (No. 45.) Cura chirurgica dell'appendicite. O. Vignolo.
109 *Di una speciale adenite nella appendicite. N. Berardinone.
110 *Remote Results of Some Craniectomies for Fracture.—Alcune craniectomie per frattura e loro esiti lontani. E. Vicenzoni.
111 (No. 46.) *Action of Substances Injected under the Dura.—Azione di alcune sostanze iniettate sotto la dura madre cerebrale. G. Nardelli.
112 (No. 47.) Caso di chiluria. G. Vincenzo.
113 Caso di varici alle regioni crurali. G. Turazza.
114 *Il segno della posizione nell'angina pectoris (attitude sign). L. Minervini. (Commenced in No. 46.)

101. **Treatment of Venereal Bubo.**—Migliorini compares the results in 57 cases under different methods of treatment. The results of evacuation and injection of a solution of nitrate of silver were much superior to those of other technics.

103. **Negri Bodies in Rabies.**—Bongiovanni states that the Negri endocellular bodies were constantly encountered in his researches on animals infected with "street virus." This constant finding has convinced him that these bodies are undoubtedly connected with the disease in some way. At the same time, he adds, he was never able to find the Negri bodies in his experimental work on rabbits infected with "fixed virus," even when the disease ran a very protracted course. This absence of the bodies in infection from fixed virus should be taken into account in experiments with radium or other methods of treating rabies.

105. **Antibodies in Typhoid.**—Rossi has been studying the immunizing antibodies in the serum of 8 typhoid fever patients. He was unable to detect any close connection between the agglutinins and the antibodies.

106. **Pathogenesis of Gastric Ulcer.**—Palermo analyzes the various hypotheses that have been advanced to explain the origin of gastric ulcer, and then proposes a new one. He suggests that when a solution of continuity occurs in a part of the stomach wall which is free from glandular formations, the lining epithelium is unable alone to accomplish the regeneration of the lesion, owing to the lack of glandular elements to co-operate in the work. The corroding action of the gastric juice soon induces ulceration at the point of the lesion.

107. **Myxosarcoma of Suprarenal Capsule.**—The patient was a man of 50, and the tumor weighed about seven pounds when removed. There was no cachexia, mononuclear leucocytosis or other symptom pointing to the suprarenals. The sound suprarenal must have acted vicariously for the affected organ. A tuberculous lesion is more apt to induce the Addisonian syndrome than a tumor. The patient had regained his health satisfactorily when last seen, two months after the two-hour operation.

109. **Adenitis in Appendicitis.**—Berardinone remarks that he has never seen any mention in the literature of the enlargement of one of the inguinal glands which he has found almost constantly accompanying appendicitis.

110. **Remote Results of Craniectomy.**—Vicenzoni reports in detail 7 cases of fracture of the skull treated with craniectomy. He also reviews the experiences of others in this line. In all his cases the results were very good. The wound healed over by growth of new fibrous tissue, and all disturbances vanished in every case but one. He saved the scraps of bone taken out, keeping them in a 2 per cent. aqueous solution of carbolic acid, and was able to replace them in the defect, where they soon healed in place. In one patient he was able in this way to repair the entire breach.

111. **Action of Substances Injected Under the Dura.**—Nardelli experimented with hypnotics and depressant and convulsive drugs, injecting them under the dura in dogs. Among the results observed he mentions that the persisting convulsions were of a type that did not materially affect the respiratory functions. The action of the drug injected under the cerebral dura did not seem to extend to the cerebellum. The dogs seemed to change their character after the injections, becoming aggressive, like the dogs operated on by Goltz, when the intervention was restricted to the anterior hemisphere. When the operation was confined to the posterior hemisphere the dogs became more docile and quiet. Among the drugs Nardelli injected were the salts of calcium. Calcium lactate displayed a lasting depressant action, even in very small doses, which did not interfere with the health of the animal. The facts observed suggest that endodural injections of the calcium salts might prove useful in severe cases of epilepsy.

114. **Attitude in Angina Pectoris.**—Minervini gives illustrations of the attitude assumed by a person during an attack of angina pectoris. He also describes 9 cases, all showing the constancy of this attitude sign, as he calls it. The individual straightens up and bends his head over backward, the arms hang down or one may be placed over the heart region. If standing, he leans over back against a wall, if possible; if seated, he leans his head over the back of the chair; if in bed, the attempt to assume this attitude is plainly apparent, and he also twists his body over to the right. The aim seems to be to get away from the heart. In asthma and similar conditions, on the other hand, the patient leans forward, seeking air, rushing to a door or window if possible.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK ON PLAGUE. by Dr. Tohiu Ishigami, superintendent Bacteriological Institute, Osaka, Japan, formerly Assistant Bacteriologist to Prof. Kitasato. Revised by Prof. Shibasaburo Kitasato, Tokyo, Japan. Translated, Enlarged and Illustrated with Pathogenic Literature. By D. Macdonald, M.B.C.M. With One Hundred and Fifty two Illustrations and Three Chromo-Lithographic Plates. In two Parts. Cloth. Pp. 180. Price, 22s. 6d. Adelaide: Vardon & Pritchard, Printers, 1905.

DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners. By G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital. With 313 Illustrations and 6 chromo lithographic plates. Fifth edition, thoroughly revised. Cloth. Pp. 891. Price, $5.00 net. Philadelphia: W. B. Saunders Co., 1906.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. For Practitioners and Students. By W. E. Ashton, M.D., LL.D., Fellow of the American Gynecological Society, Professor of Gynecology in the Medico-Chirurgical College, etc., with 1,046 New Line Drawings Illustrating the Text. By J. V. Altenederr. Second edition. Cloth. Pp. 1079. Price, $6.50 net. Philadelphia: W. B. Saunders Co., 1906.

MEDICAL DISEASES OF INFANCY AND CHILDHOOD, with Points on the Anatomy, Physiology and Hygiene Peculiar to the Developing Period. By A. C. Cotton, A.M., M.D., Professor of Pediatrics, Rush Medical College, University of Chicago; Attending Physician for Diseases of Children Presbyterian Hospital, etc. Cloth. Pp. 670. Price, $3.50. Philadelphia: J. B. Lippincott Co., 1906.

THE AUTOMOBILE. A Practical Treatise on the Construction of Modern Motor Cars, Steam, Petrol, Electric and Petrol-Electric. Based on Lavergne's "L'Automobile sur Route." Edited by P. N. Hasluck. Special Edition Enlarged, with 804 Illustrations, 8 Full-page Plates and an Addendum. Vols. I and II. Cloth. Pp. 451-864. Price, $7.00 net. Chicago: W. T. Keener & Co.

ESSENTIALS OF GENITO-URINARY AND VENEREAL DISEASES Arranged in the Form of Questions and Answers, Prepared Especially for Students of Medicine. By S. S. Wilcox, M.D., Professor of Genito-Urinary Diseases and Syphilology, Starling Medical College, Columbus, etc. Illustrated. Cloth. Pp. 313. Price, $1.00 net. Philadelphia: W. B. Saunders Co., 1906.

INFECTION, IMMUNITY AND SERUM THERAPY. In Relation to the Infectious Diseases which Attack Man; with Considerations of the Allied Subjects of Agglutination, Precipitation, Hemolysis, etc. By H. T. Ricketts, M.D., Instructor in Pathology, University of Chicago. Cloth. Pp. 600. Illustrated. Price, $2.50. Chicago: American Medical Association Press, 1906.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS AND PHARMACOLOGY. By G. F. Butler, Ph.G., M.D., Associate Professor of Therapeutics in the College of Physicians and Surgeons, Chicago, etc. Fifth Edition. Thoroughly Revised and Rewritten. By S. E. Jelliffe, M.D., Ph.D. Cloth. Pp. 694. Price, $4.00 net. Philadelphia: W. B. Saunders Co., 1906.

REFERENCE HANDBOOK OF THE DISEASES OF CHILDREN. For Students and Physicians. By Prof. Ferdinand Fruhwald, Chief of Clinic in the Vienna Polyclinic. Edited, with Additions, By T. S. Westcott, M.D. With 176 illustrations. Cloth. Pp. 533. Price, $4.50 net. Philadelphia: W. B. Saunders Co., 1906.

NURSING, Its Principles and Practice, for Hospital and Private Use. By I. H. Robb, Graduate of the New York Training School for Nurses attached to Bellevue Hospital, etc. Third edition, Revised and Enlarged. Illustrated. Cloth. Pp. 565. Price, $1.50. Cleveland: E. C. Koeckert, Publisher, 1906.

A TREATISE ON SURGERY. By G. R. Fowler, M.D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York, etc. 888 Illustrations and 4 Colored Plates, all original. Cloth. Pp. 722. Price, $15.00 net. Philadelphia: W. B. Saunders Co., 1906.

NURSING IN THE ACUTE INFECTIOUS FEVERS. By G. P. Paul, M.D., Assistant Visiting Physician and Adjunct Radiographer to the Samaritan Hospital at Troy, New York. Illustrated. Cloth. Pp. 200. Price, $1.00 net. Philadelphia: W. B. Saunders Co., 1906.

THIRTY-SECOND ANNUAL REPORT of the Board of Trustees and Officers of the Athens State Hospital to the Governor of the State of Ohio for the Fiscal Year Ending Nov. 15, 1905. Paper. Pp. 59. Columbus, Ohio: F. J. Herr, State Printer, 1906.

GYNECOLOGICAL DIAGNOSIS. A Manual for Students and Practitioners. By A. E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P., with 35 Original Illustrations. Cloth. Pp. 242. Price, $2.50 net. New York: William Wood & Co.

THE OPERATING ROOM AND THE PATIENT. By R. S. Fowler, M.D., surgeon to the German Hospital, Brooklyn, New York. Fully Illustrated. Cloth. Pp. 172. Price, $2.00 net. Philadelphia: W. B. Saunders Co., 1906.

TREATMENT OF GONORRHŒA IN THE MALE. By C. Leedham-Green, M.B., F.R.C.S., Senior Surgeon to Out-Patients, Queen's Hospital, Birmingham, etc. Cloth. Pp. 151. Price, $2.00 net. New York: William Wood & Co.

NEW PATENTS.

Recent patents of interest to physicians and pharmacists:

S12974. Apparatus for sterilizing and cleansing bottles. T. C. Bates, Worcester, Mass.

S13344. Inhaler. Charles S. Birt, Birmingham, England.

S13363. Formaldehyd-generator. Albert E. Dieterich, Washington, D. C.

S13373. Extracting albumin from vegetable substances. F. W. Gaertner, Niagara Falls, N. Y.

S15092. Therapeutic pad. Perlam B. Hardy, Tecumseh, Mich.

S13221. Catamenial sack. W. M. Longstreth, Terra Alta, W. Va.

S12883. Door-operated air pump for atomizers. W. H. Rose, Baltimore, Md.

S13176. Self-adjusting belt for supporting catamenial bandages. Eugene Schick, Fly Mountain, N. Y.

S13256. Pipette. Shin-ichi Takaki. New York.

S13877. Instrument for removing ribs. A. W. Frentzen and J. Shoemaker, Leiden, Netherlands.

S13425. Inhaler and exhaler. J. L. Hill, Jackson, Mich.

S13829. Suppository. Heber Roberts, St. Louis.

S13740. Artificial limb. James F. Rowley, Chicago.

S14594. Preserving and precipitating casein. H. V. Dunham, Belows Falls, Vt.

S14038. Medical applicator. Hans H. Groth, Cincinnati.

S14286. Hospital or invalids' bed. W. J. Harris, Knoxbiro, N. Y.

S14342. Hypodermic syringe. J. W. Horner, Columbus, Ind.

S14484. Inhaling apparatus. Asger Velschow Oakland, Cal.

S14481. Artificial breast. Laura J. Wolfe, Columbus, Ohio.

S15954. Suture bridge. Joseph F. Chambers, St. Louis.

S14720. Emulsifier. Charles D. Monroe, Elgin, Ill.

S14795. Plastic bandage. Henry Myers, Philadelphia.

S14923. Stethoscope. Otto Stadtler, Gehrden, Germany.

S15313. Portable sterilizing apparatus. W. W. Sweeney Los Angeles, Cal.

S14829. Atomizer. W. H. Wood, Cleveland, Ohio.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, APRIL 14, 1906. No. 15.

Address

TWENTIETH CENTURY SURGICAL PROBLEMS*

H. D. NILES, M.D.
SALT LAKE CITY.

No thoughtful student of medicine can fail to be profoundly impressed with the surgical work and achievements of the past century. Revolutionizing discoveries have been made, new principles established, and perfected methods of procedure evolved in such rapid succession that we who stand just within the threshold of the twentieth century, contemplating with wonder and gratitude the triumphs of the past and trying to formulate plans for the future, may feel that there is little remaining for us to do in hastening the progress of surgery.

But if we rightly construe the lessons taught by the work and workers of the past we will not long remain unmindful of the responsibilities and opportunities of the present. For they reveal more or less distinctly the great undeveloped possibilities of surgery that await the solution of problems which we and those who follow us must strive to solve—one by one—until that time shall come when there is no mortality or suffering from surgical diseases.

I trust that on this occasion we may find ourselves in sympathy with the thoughts suggested by these lessons of the past and interested to consider those surgical problems that confront us to-day. For if we are to do our part toward the advancement of surgery we must seek the elements of future success in the study of present failures.

It seems to be the tendency of modern surgery to magnify the importance of manners and methods and at times to forget that all our real advances and most substantial achievements depend now, as always, not on our inventing or blindly imitating new plans of procedure, but on our alertness in diagnosis and our faithful allegiance to sound surgical principles as they are gradually developed from our growing knowledge of anatomy, physiology and pathology.

No one who has kept in touch with our recent experiences in the surgery of the brain, lungs, pancreas, spleen, peritoneum and other organs can escape the conviction that with a clear definite idea of the physiology of these parts the results of our surgical endeavors would be infinitely more satisfactory than we are able to obtain with our present knowledge. In brain surgery our many failures can not be charged to any lack of operative skill, but to our inability to accurately locate the exact pathology early enough to insure its safe removal or correction.

The same may be said of the morbid conditions of the spleen, pancreas and in a degree of the stomach. Until we are better informed by the physiologist of the normal functions of these organs we cannot hope always to differentiate between the normal and the abnormal. The evidence that points to the one and excludes the other can only come to us through concentrated specialized efforts which the average surgeon is technically unfitted to undertake.

We have been taught to believe that the normal mobility of the gastrointestinal canal and the pelvic organs is essential to the healthful performance of their physiologic functions. But we need to know more of the anatomy, physiology and pathology of these parts if we are to take into stricter account the disturbances, distresses and diseases that may follow when they are immobilized by inflammatory lesions, pressure of tumors or surgical operations.

We need to know more of the phagocytic absorption and reparative powers of the peritoneum and other tissues of the body. In obtaining this knowledge clinical observations and the testimony of patients may be helpful, but our most convincing evidence must be based on special experimentation in our laboratories, to be afterward tested in actual practice.

The line that divides surgical diseases from non-surgical is still somewhat vague and indistinct, and one of the most common sources of error in treatment arises from the fact that we are often in doubt as to when and how far we may safely trust to the reparative resources of Nature and under what conditions we should resort to prompt operative interference. We know that many morbid conditions may yield more or less perfectly to Nature's reparative powers, and we have learned of other morbid conditions that can not be modified, corrected or removed except by mechanical means. But until the line that divides the limitations of rational medicine from the boundaries of surgery is more clearly defined the internist and surgeon will often encroach on each other's proper field, and the best endeavors of both will fail to produce the most satisfactory results. To establish this line we must again seek assistance from the physiologist and the pathologist, for we need to know not only more of the functions of the different tissues of the body in health, but we must become better acquainted with the reparative absorptive and phagocytic powers of these tissues in the presence of the various pathologic processes and in the different stages of the disease. Even this is not enough, for theories evolved in the laboratory or dead-house, however suggestive or plausible they may appear, have no established practical value until their real worth is determined when the crucial test is applied at the bedside or on the operating table in the presence of physicians and surgeons competent to pass judgment on their merit.

Those who fairly consider the mortality and suffering that attend those diseases associated with pathologic

* President's Address before the Western Surgical and Gynecological Association, Kansas City, Mo.

processes which we can not as yet positively determine or rationally treat, because of our lack of knowledge of physiology and pathology, must feel that the profession of the twentieth century has a wide field worthy of their highest endeavors. For example, epilepsy, glaucoma and exophthalmic goiter annually ruin the lives and happiness of many human beings, and until the mysterious causes of all these afflictions and the means for correcting them are made known we surely have an ample incentive to continue our studies.

We have learned how to render patients immune from the effects of certain pathogenic microbes and their toxins, but so long as tubercle bacilli, typhoid bacilli and the pyogenic bacteria elude our efforts there will still remain an incomplete chapter in the progress of medicine which only the physiologist and the pathologist can favorably conclude.

We hear much of preventive medicine and little of preventive surgery. The triumphs of the former are heralded by the internist with justifiable pride. The failures of the latter the surgeon has frequent occasion to confess with humiliation. Every too-late operation is a painful reminder of our sacred duty to prevent the possible and probable progress of a pathologic process by every means in our power, even to the employment of preventive surgery, for here preventive surgery is timely surgery.

Thus far our success in surgery has been measured largely by our ability to cope with advanced disease, after it has become an immediate menace to life and health. But the time can not be far distant when the importance of recognizing the antecedent pathology of cancer, ulcer, surgical kidney, pus-tubes, prostatitis and many other grave lesions will be impressed on the profession, and the public will be educated to choose "preventive" rather than "last resort" surgery.

Non-malignant inflammatory lesions and incomplete obstructive twists of the sigmoid are the causes of much suffering and not a few deaths, that we may hope to avert when we learns to regard surgical pathology here, as in other parts of the alimentary canal. This is a comparatively new and certainly worthy field of study that invites the attention of the surgeons of to-day.

Our present failures to interrupt the progress of inflammatory lesions, while they are yet safely accessible and before they reach dangerous stages or regions, are responsible for a large proportion of the suffering and mortality of our operative procedures. Every case of appendiceal abscess, pyosalpinx, cancer of the stomach, malignant disease of the sigmoid, mastoid disease or surgical kidney should bring to the mind of the medical attendant as well as the operator a mental picture of the antecedent pathology and serve to strengthen their determination to seek out means for recognizing it early enough to exclude the dangers of a late operation on a resultant pathology.

Every poor unfortunate creature we meet on the street who is crippled or deformed by the ravages of tubercular disease is a mute but pathetic appeal to our profession to advance preventive surgery until mankind is free from this most prolific source of misery and unhappiness.

I have briefly referred to a few of the many problems that in the progress of surgery confront us to-day awaiting solution.

As we take these problems into thoughtful account and appreciate the causes of our present failures we are forced to conclude that to-day and always our great advances in surgery can only come from a clearer comprehension of those laws of Nature that govern human life and vital processes in health and disease, and that the anatomist, the physiologist and the pathologist are destined to remain the most potential factors in progressive surgery.

But it is equally true that so long as a large proportion of these scientific workers are permitted to limit their best endeavors to the teaching of students and the filling of subordinate positions in hospitals they can never fully meet their highest obligations to surgery. And so long as physicians and surgeons are compelled to rely on their own college acquired knowledge of anatomy, physiology and pathology we can not reasonably expect to make much progress in original scientific research or much headway in solving the problems that confront us to-day.

The very nature of these problems and their vital importance demand that we surgeons should press into more active and general service and bring into more intimate association the anatomist, physiologist, pathologist and internist.

This is distinctly an age when combinations of special forces rule the world, control all its enterprises and govern the destiny of every undertaking of any magnitude. In surgery there is a greater need than ever before for an exhibition of this same progressive spirit of the times. We must combine our forces if we are to meet the necessities of the new existing conditions. Single handed no surgeon can hope to accomplish much in the face of the peculiar conditions of to-day. At present the various laboratory workers are undoubtedly inclined to attach too much importance to theoretical conclusions which may not be applied to advantage in practice, while the operator is unquestionably prone to have an exaggerated idea of the lessons taught in the operating room. The internist, on the other hand, is often placed in the embarrassing position of accepting the teachings of both, while at the same time he strives to please his patients and preserve his own self-respect.

All these workers should be brought into the closest possible relations, and in practice as well as theory they should learn to regard pathologic processes and their rational treatment from the same point of view. The surgeon and the internist certainly have need to harmonize and perfect their ideas of pathology and treatment by a more intimate association in their daily work than is usual or often possible under existing conditions. In this way the internist would often see and become familiar with a pathology as revealed on the operating table, which in his consulting room or library he could only picture imperfectly, and might be tempted to treat symptomatically.

The surgeon should find time and opportunity to study at the bedside the earlier symptoms of surgical diseases when the indications are most obscure. He needs to know more of the trials, difficulties and doubts of his colleague, if he is to be kindly in his judgment, and he has abundant reason to familiarize himself with the symptoms of pathology in every stage if he is to decide questions pertaining to "rational" and "timely treatment."

The laboratory worker should no longer rely exclusively on the microscope to furnish him with the best and broadest views, or trust alone to scientific experimentation to give him the most practical conception of disease. He, too, needs to often see and study morbid conditions in life and to know well the symptoms, suffering and danger they produce if he is to impart the most practical knowledge to students or become the most

helpful associate of surgeons. For it is not in our laboratories, but in our consulting rooms, at the sick bed and at the operating table that we have the greatest need to know more of pathology and are inspired with the strongest determination to study all those factors that have to do with the deviation and restoration of health.

If we are ever to solve the problems that baffle our endeavors to-day and place surgery on a much higher plane than it now occupies, our scientific workers must become more practical, our practical workers must become more scientific, and our physicians and surgeons must become more nearly united in their ideas of pathology and treatment. And this can only be accomplished by an organized movement tending to bring all workers into closer touch and sympathy with each other.

Such a combination of forces as I have outlined can be organized and made effective in every community capable of supporting a hospital and a medical society. And in this cause our hospitals should be willing and desirous to meet our needs, for in doing so they would in time fulfill their highest mission of usefulness by developing a great system of scientific institutions distributed throughout the world, where not only the sick and afflicted would be kindly and skilfully attended, but where earnest experienced men of mature judgment might meet and study and work harmoniously together in their efforts to solve those problems that have to do with the prevention of disease, the saving of life and the mitigation of suffering.

But if we are to secure the full benefits to be derived from our hospitals and from our colleagues, the internist and the laboratory worker we must do our part. The medical profession must either own their own hospitals or they must prove to hospital governments or hospital benefactors that our cause is a worthy one and that with their help we can and will make our hospitals a greater blessing to mankind than is possible under the present system.

We must learn to realize that every laborer is worthy of his hire, and that until the recompense of the laboratory worker is proportionate to that of the physician and surgeon the laboratory will not attract its proportion of good men.

We must see to it that this work and these opportunities be not restricted to the favored few who happen to be on hospital staffs. We need the united support and help of every member of the whole profession, and every reputable graduate in medicine should be invited, encouraged and urged to begin early their postgraduate studies and researches, and to continue them through their active life by participating in the educational and other advantages to be offered by those institutions.

These and many other questions which arise in this connection can and should be discussed in detail among ourselves, in our societies and in our medical journals, but we may be assured that in due time they can all be settled satisfactorily if we approach them in a spirit of fairness and good faith.

The workers of the past century had their duties, responsibilities and opportunities; we have ours. They had their means and methods for advancing surgery; we must formulate ours to meet existing conditions. They overcame their difficulties and achieved their triumphs; we will strive to do likewise: and when this association shall hold its regular annual meeting a hundred years hence, and a new and brighter chapter in the history of surgery is read, let us hope that chapter may not be made up of a long list of brilliant operative procedures made possible by easily-acquired methods, but rather let us trust it may record the coming of many substantial blessings and benefits to mankind through the earnest systematized and united efforts of the men of the twentieth century.

Original Articles

INFANTILE SCORBUTUS.

AN ANALYSIS OF FIFTY CASES, INCLUDING TREATMENT.

JOHN LOVETT MORSE, A.M., M.D.

Instructor in Pediatrics, Harvard Medical School; Assistant Physician at the Children's Hospital and at the Infants' Hospital; Visiting Physician at the Floating Hospital.

BOSTON.

Infantile scorbutus developed in seven cases under my direct observation. Six cases were brought to my office, nine were seen at the Infants' or Children's Hospitals, and twenty-eight in consultation with other physicians. The true nature of the illness had been recognized in but five of those seen in consultation.

The following diagnoses had been made previously in these cases and in those seen at the office and hospitals: Acute nephritis, 5; tumor of bladder, 1; excess of uric acid with consequent staining, 2; arsenical poisoning with inflammation of the kidneys, 1; rickets, 2; spinal or Pott's disease, 6; hip disease, 1; periosteitis, 1; rheumatism, 6; gout, 1; nervousness, 1; infantile paralysis, 1; syphilis of cord, 1; difficult dentition, 5, in four of which the gums had been lanced; strain, 1; injury, 1; tuberculosis, 1; gumma of eye, 1. In two other cases the physicians stated that they had no idea what was the trouble.

It is evident that the errors in diagnosis depended somewhat on the prominence of individual symptoms. It is probable, moreover, that other diagnoses had also been made which were not noted in the records. In speaking of errors in diagnosis in connection with infantile scurvy it is only fair to state that it is also possible to mistake other conditions for this disease. I have mistaken congenital syphilis and hematuria from lead poisoning for scurvy and have known septic arthritis to be mistaken for it.

Sex and Age.—The patients were nearly evenly divided between the two sexes, twenty-three being males and twenty-seven females. The age at the onset of the symptoms varied between three and nineteen months. Thirty-three or 67 per cent. of forty-nine cases with complete data were between six and ten months. Seven were under six months and nine over ten months.

The duration of the symptoms before the patients were seen varied between two days and ten months, in all but six being between one week and three months. The age of the patients when first seen varied between four and twenty-one months, thirty-seven, or 74 per cent., of fifty cases being between seven and twelve months. Four were under seven months and nine over twelve months.

Etiology.—Table 1 shows the foods which were being taken at the time when the symptoms of scurvy developed.

TABLE 1.—Foods During the Use of Which Scurvy Developed.

Proprietary Foods:	
With water	8
With milk:	
Irrational mixtures, boiled	9
Irrational mixtures, pasteurized	2
Rational mixtures, unheated, pasteurized	2
Rational mixtures, heated and peptonized	1
Rational mixtures, unheated	8

Milk and Water Mixtures: Irrational:	
Peptonized and boiled	1
Unheated	1
Heat unknown	1
Laboratory Mixtures:	
Too weak:	
Peptonized and pasteurized	1
Pasteurized	1
Rational, pasteurized	4
Home Modifications:	
Irrational, same for four months pasteurized	1
Too weak, same for months, unheated	1
Unheated	2
Rational, boiled	2
Peptonized and pasteurized	2
Barley water, peptonized and pasteurized	2
Barley water, pasteurized	1
Oatmeal water, pasteurized	1
Same for five months, pasteurized	1
Pasteurized	1
Pasteurized and beef juice	1
Barley water, unheated	1
General Diet at 13 months, but with no fruit or vegetables	1

From the point of view of modern ideas of reasonable infant feeding the food was irrational in nineteen of the cases taking proprietary foods, in four of those taking milk mixtures, and in the case of the infant on a general diet, making a total of twenty-four. Milk was used in the preparation of the food in forty-one cases, while no milk was used in eight cases. One baby was on a general diet. In the forty-one cases in which milk was used in the preparation of the food the mixture was boiled in twelve, pasteurized in nineteen and unheated in nine, while in one case there was no data as to whether or not heat was used. The food was also peptonized in four of the pasteurized and in one of the unpasteurized mixtures. The mixture was manifestly too weak in five cases, and the same mixture was continued for months in two cases. The food was often unsuitable in several ways in a single case. In one case only was a rational unpasteurized mixture being taken, and that was prepared with barley water instead of with water. Bread and crackers in two, egg in one, beef juice in one and a general diet in another case failed to prevent the development of the disease.

Analysis of the foods taken by these cases justifies the conclusions of the committee of the American Pediatric Society that "the development of the disease followed in each case the . . . employment of some diet unsuited to the individual child" and that "the farther a food is removed in character from the natural food of a child the more likely its use is to be followed by the development of scurvy." Analysis of this table also seems to show that the absence of "freshness" and the heating of the food are very important elements in the production of scurvy.

The digestion was good in twenty-three and feeble in twenty-seven of these cases, apparently showing that the scurvy was not due to disturbance of digestion and that foods may cause scurvy without causing disturbances of digestion.

The onset of the scurvy was immediately preceded by measles in one case, influenza in three, bronchopneumonia in one, and infectious diarrhea in four. It is probable, however, that these diseases had no direct influence on the development of the scurvy unless possibly by weakening the general resistance.

There were signs of rickets in the osseous system in all but nine of these cases. They were slight in twenty-six, moderate in eleven, and marked in four. There was, however, no evident relation between the severity of the rickets and that of the scurvy. It seems rational to conclude, therefore, that the rickets had no influence on the development of the scurvy and that if there was any connection between them it was merely that they were both the results of a common cause.

The only evident cause for the development of the scurvy in these cases, therefore, is found in the food. No further conclusions as to the etiologic connection of the food and the disease than those already stated are, however, justified.

Symptoms.—It seems best to analyze the private cases separately as to the order of the development of the symptoms, as it is possible to get from them a better idea of the onset and course of the disease in its early stages than from those seen after its more complete development. In all of these cases a gradual loss of color preceded for weeks or months any other symptom. This loss of color was often associated with loss of appetite. Tenderness of the back was the next symptom noticed in two, tenderness on handling in three, and hematuria in two cases. The next symptoms which developed were swelling of the gums in one, tenderness on handling in two, and paresis of an extremity in two. The time between the onset of the second and third symptoms varied between one week and two months.

Table 2 shows the comparative frequency of the various symptoms and also the relative order of their appearance.

TABLE 2.—Order of Appearance of Symptoms.

	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Total.	Private Cases Added.
Tenderness	21	12	2	1	..	..	36	43
Inflamed gums	10	3	2	..	1	1	17	18
Hematuria	7	1	..	1	..	1	10	12
Paresis	4	9	5	2	..	..	20	22
Pallor	2	2	..	..	..	..	4	11
Swelling	1	2	5	2	3	..	13	13
Ecchymoses	1	..	3	..	2	..	6	6
Hemorrhage: Bowels	..	..	1	1	..	1	3	3
Mouth	..	..	..	1	..	..	1	1
Orbit	..	..	..	1	..	..	1	1

It is noticeable how seldom pallor was noted in these cases. That it was overlooked, however, is shown by the fact that on examination pallor of various degrees was found in thirty-six, or 75 per cent., of forty-eight cases. In five others the color was noted as fair, while in only seven was it good. Examinations of the blood were made in but two cases. They both showed a marked diminution in the hemoglobin and in the number of red corpuscles with a slight leucocytosis, the relative proportions of the white corpuscles being normal. Tenderness was the symptom most commonly noted, while paresis of the extremities comes next, closely followed by inflammation of the gums, swelling of the extremities and hematuria. Tenderness on handling was the first symptom noted in nearly one-half of the cases, swollen or purple gums in about one-quarter, and hematuria in nearly as many.

Fever was never mentioned among the symptoms, but in several of the hospital cases the temperature was slightly elevated, running in one case as high as 103° F. No other causes were found for these temperatures, which diminished steadily with the cure of the scurvy. It is reasonable to conclude, therefore, that the fever was due to the scurvy and not to complications.

There was very great variety in the suddenness of the onset and in the severity of the early symptoms; for example, the gums were swollen for six months in one case, and there was hematuria in another for three months before the appearance of tenderness, while in still another there was tenderness in the legs for two months before there was any swelling. In one case there was a history of a fall, with immediate loss of power and pain in one leg; in another, marked swelling of the leg developed in forty-eight hours after a fall; while in still another a fall on the floor was followed by immediate loss of power

in the leg, this in turn being followed in five weeks by inflammation of the gums.

Physical Signs.—Careful analysis of the physical signs found in these cases shows that there must have been many errors in observation regarding the frequency and order of development of the symptoms. This has already been shown in the note regarding pallor.

Twenty-nine infants had teeth and nineteen had no teeth. The gums were normal in six and abnormal in twenty-three of the cases with teeth, while they were normal in seventeen and abnormal in only two of those without teeth. The gums were normal, therefore, in twenty-three and abnormal in twenty-five cases. When there were both upper and lower teeth the upper were involved alone in eight cases, while the lower were never involved alone. The gums were involved about all the teeth in fifteen and about part of the teeth in eight cases. Other portions of the gums besides those about the teeth were involved in eight cases.

One leg only was affected in nine cases; in seven of these it was the right and in two the left leg. Both legs were affected in twenty-five cases. The arms and legs were both affected in eleven cases, but the arms were never affected alone. Pain on motion of the extremities was noted in forty-three cases; that is, in practically all those which were not cases of simple hematuria. There was tenderness on handling in thirty-seven cases. Limitation of passive motions was noted in but ten and paresis in but eight cases. These latter figures are undoubtedly too low because of the failure to record all the observations. Swelling limited to the diaphyses of the bones was present in twenty-seven cases. In one the sternal ends of the clavicles were affected. The arms were affected in ten cases, the swelling being in the upper arm in four and in the lower in six. The legs were affected in thirty-four, the thigh being involved in seventeen, the lower leg in fifteen and the feet in two cases. The swelling sometimes involved the whole, but was more often limited to a portion of the diaphysis. The upper portion of the humerus, the lower of the bones of the forearm and of the femur, and the lower portion or the whole shaft of the tibia were most often involved. The swelling in the feet was always on the back.

The position of the legs was very characteristic in twenty-seven cases, although the completely typical position was not always present. The tendency was always to hold the lower extremity rigidly with the thigh flexed on the abdomen, the leg flexed on the thigh, the foot extended and the whole leg rotated outward.

Pain on motion of the back was noted in five cases. This proportion is undoubtedly too low, partly because of failure to record the point and partly because of the difficulty of determining the presence or absence of pain in the back when there is pain in the legs.

Ecchymoses were present in eleven cases. They were on the legs and feet in five, the eyelid in three, the face in two, the body, chest and abdomen in one each, and all over the body in one. There was also a hemorrhage into the orbit, with consequent protrusion of the eye in one case.

There was edema in eleven cases. It was in the eyelids in two, in the legs and feet in five and in the feet alone in five. This was a true edema of the soft tissues and not an inflammation or hemorrhage under the periosteum.

Cases of Hematuria.—The cases of hematuria form such a characteristic and peculiar group that they seem worthy of separate consideration. The urine was normal in twenty and abnormal in fifteen cases. In three of these, however, it was merely noted that the urine stained the diapers red or brown. There were no data as to the urine in fifteen cases. Barring pallor in two of the private cases, hematuria was the first symptom noted in eight of the proved cases of hematuria. It was the only symptom of scurvy in two and in the rest preceded the other symptoms by one-half, one-half, three and one-half, four, five and one-half and nine weeks respectively. The urine was usually red, but was sometimes brown. The blood was both normal and abnormal, but usually normal. It was often present in large amounts. The amount of albumin corresponded to the amount of blood, which was often large enough to give an alkaline reaction. Hyalin and fine granular casts and an excess of cells were found occasionally; brown granular and blood casts were also found in one instance. In one of my own cases the true nature of the hematuria was not recognized until tenderness developed, while in the other it was recognized at once. In the other cases the diagnoses, based on the hematuria, were acute nephritis in five, tumor of the bladder in one, uric acid staining in one, and arsenical poisoning in one. The response to treatment was rapid and the urine became normal in all. There was marked improvement in the hematuria in one day in two cases. The urine was clear in five days in two, in ten days in two and in fourteen days in two cases. There were no accurate data as to the duration in the other six cases.

It is evident from these figures that the earliest symptom of scurvy is, as a rule, loss of color, which is often associated with loss of appetite. The first symptom to attract attention and to justify the diagnosis of scurvy is most often tenderness or pain in the legs or back on handling. Swollen and purple gums or hematuria may, however, precede the tenderness and pain. Tenderness and pain on motion of the extremities almost always develop sooner or later, and in about half of the cases are accompanied by swelling about the diaphyses. The legs are affected about three times as frequently as the arms. The gums are affected in about half of the cases; almost always when there are teeth, very rarely when there are no teeth. Hemorrhages, except under the periosteum, are comparatively uncommon.

The order in which the symptoms develop and the intervals at which they make their appearance vary materially. The onset may be very sudden or very insidious. Mild symptoms may persist in some cases for weeks and even months before the development of others, while in other cases several symptoms may appear together or in rapid succession, the typical picture of the disease being developed in a few days.

Treatment.—Recovery from the scurvy occurred in all cases, although a few died later from coincident diseases.

The food was not changed in fifteen cases. The foods are given in Table 3.

TABLE 3.

Laboratory milk, pasteurized	2
Home modification, unpasteurized	2
Home modification, pasteurized	6
Proprietary foods with fresh milk	2
Proprietary foods with heated milk	2
Proprietary foods with water	1

In all the other cases the food was changed, the attempt being made in every case to give not only a more rational food, but one more suitable for the individual baby. Proprietary food mixtures were changed to milk mixtures and milk mixtures to better milk mixtures. Sterilization was always stopped and pasteurization was stopped if the milk supply and time of year permitted. Peptonization was stopped in every case. In fact, the

food was made rational as to its chemical composition, and everything tending to destroy "freshness" as far as was possible omitted.

One patient was given lemon juice. All the others were given orange juice, except two that were given beef juice. Eight others also took beef juice in addition to the orange juice. One who was given beef juice alone took two tablespoonfuls daily while the milk was changed. The amount given in the other case is not known and the milk was not changed. Both recovered rapidly. As has already been mentioned, scurvy developed in one who was taking one ounce of beef juice daily.

The amount of orange juice given varied considerably. Seven patients took one tablespoonful daily; twenty, two tablespoonfuls; and one, four tablespoonfuls. Four took the juice of half an orange, and seven the juice of a whole orange daily. The amount is not stated in seven. In one case in which there was no result from ten drops of lemon juice given three times daily for a week, recovery was very rapid on the juice of half an orange daily. In another case there was no improvement noted in two days while taking one tablespoonful of orange juice daily, but when the amount was increased improvement was very rapid. It seems safe, therefore, to conclude that at least one tablespoonful of orange juice is necessary daily, and that two tablespoonfuls, or the juice of half an orange, is amply sufficient to bring about a rapid cure.

Pain and tenderness were usually the first symptoms to yield to treatment and were soon followed by the return of power in the extremities. Improvement in the condition of the gums usually began later and progressed more slowly. The disappearance of the swelling was, as would be expected, always slow. Marked improvement in the swelling, even if it was extreme, was always noticeable in a week. The protrusion of the eye was gone in six days.

An analysis of the results of the treatment in these cases shows that the mildest cases were well in two days, and that many cases were entirely well in five days. Almost all showed marked improvement in three or four days. Pain and tenderness were always gone in one week, while the gums were rarely normal before one or two weeks. Most cases were well, except for the remains of swelling and hemorrhages, in two weeks, while recovery was always complete in three weeks.

How soon the improvement may begin and how rapid it may be is shown by the following extracts from letters written by the parents of some of these patients: "Immediate improvement;" "better in twenty-four hours, kicking in forty-eight hours;" "different baby in a week;" "progress simply marvelous;" "immediate response to treatment;" "improvement before taking the juice of a whole orange."

70 Bay State Road.

FEVER IN THE NEWBORN.

A CONSIDERATION OF THE FEBRILE TEMPERATURES OBSERVED DURING THE FIRST DAYS OF LIFE, WITH REPORT OF AN EPIDEMIC INFECTION OF THE RESPIRATORY TRACT IN THE NEWBORN.

WILLIAM J. BUTLER, M.D.
CHICAGO.

An interesting phase of the first days of infant life is the many deviations from the normal temperature that occur and which are so frequently overlooked unless thermometry is regularly practiced.

It is not improbable, however, that this practice, the importance of which can not be too strongly urged, is seldom pursued to any extent even in maternity wards, unless an infant presents some marked evidence of illness; whereas the thermometer only in many cases renders it possible to determine early the presence of disease which by other methods of examination might be overlooked.

That this latter frequently occurs, and that an apparent want of acquaintance with diseases of the newborn exists, is well illustrated in the vital statistics by the meaningless terms ascribed as causes of death, to-wit, icterus, convulsions, etc.

The temperature of the newborn immediately after birth is somewhat higher than that of the mother, the temperature of the latter being from 0.2 F. (0.1 C.), according to Wurster,[1] to 0.9 F. (0.5 C), according to Davy,[2] lower than that of the child. In full term babes the rectal temperature is found to average, according to Barensprung,[3] 100 F. (37.81 C.); Lepine,[4] 99.8 F. (37.7 C.); Andral,[5] 100.2 F. (37.9 C.); Hennig,[6] 100.2 F. (37.9 C.). In consequence of the cooling of the surface incident to exposure and the first bath, where employed, there is a drop in the temperature in the course of an hour or two of from 1.76 F. (.95 C.), according to Schäfer,[7] to 3.3 F. (1.87 C.), according to Sommer.[8] Eross explains this apparently wide difference by assuming that some observers take the temperature immediately following the bath and thus do not note the subsequent decline. It gradually rises after several hours, and from twelve to thirty-six hours it reaches an average of 99.8 F. (37.67 C.), according to Eross;[9] 99.5 F. (37.5 C.), according to Jurgensen;[10] 99.2 F. (37.35 C.), according to Fehling.[11]

Forester[12] called attention to a second decline on the fourth day, at which time the temperature averages 98.8 F. (37.1 C.). Following this there is a second rise, first noted by Barensprung,[3] which reaches its maximum on the eighth day, averaging 99.2 F. (37.4 C.).

Feis[13] believes that the fall in temperature between the third and fifth days is due to hunger of the infant. He thinks there exists a direct relation between the decline on the fourth day and elevation on the eighth day and the increase in the quantity of nourishment taken, which was first suggested by Eross,[9] and to the gain in weight, which latter point had been previously made by Barensprung.[3]

Raudnitz,[14] however, was disinclined to accept the explanations offered for the double rise and fall of temperature in the first week, considering them conjectural, at the same time suggesting the less plausible theory that the second decline and rise of temperature occurring between the fourth and eighth days was a slow reflected compensatory wave following the first marked decline after birth. Lepine[4] observed a somewhat higher tem-

1. Wurster: Berl. klin. Wochft., 1869, No. 37, p. 393.
2. Davy: "Physiological Researches," 1868.
3. Barensprung: Müller's Arch. f. Physiol., 1851, p. 126
4. Lépine: Gaz. Méd., 1870, p. 368.
5. Andral: "Note sur la température des nouveaunes Acad. des Sciences, 1870, p. 825.
6. Hennig: "Lehrbuch der Krankheiten des Kindes
7. Schäfer: Inaug. Diss., Greifswald, 1863.
8. Sommer: Inaug. Diss., Berne, 1880.
9. Eross: Jahrb. f. Kinderhk., vol. xxiv, p. 189, also Arch. f. Gyn., No. 13, p. 306; also Jahrb. f. Kinderhk., vol. xxvii, p. 79.
10. Jürgensen: "Die Körperwärme des gesunden Menchen." Leipsig, 1873; also Deutsches Arch. f. klin. Med., III, p. 165
11. Fehling: Arch. f. Gyn., 1874, vol. vi, p. 385
12. Forester: Jour. f. Kinderkr., 1862, No. 7.
13. Feis: Arch. f. Gyn., 1893, No. 3, p. 463.
14. Raudnitz: Zeitft. f. Hkd., 1888: p. 545.

perature in children in whom the initial loss of weight ceased early.

A number of writers in their careful studies of the temperature in the newborn confirmed the observations of Forester[12] and Barensprung.[3] Eross[9] called special attention to the limits of normal temperature on the fourth and fifth days, and stated that from his observations a rise to 100 F. (37.8 C.) or 100.2 F. (37.9 C.) occurred during this time only under pathologic conditions.

Abnormal elevations of temperature are not uncommon in the first days of life, in some instances lasting several hours only, in many a few days, and in others persisting for two or three weeks or a longer time. The exact cause of them, where no gross pathologic lesion presents itself clinically, may at times be difficult to determine. Their frequently transient character and early disappearance after the establishment of lactation led Holt[15] and McLean to style some of them inanition temperatures. To say the least, this seems paradoxical and untenable in the light of the above observations, especially when we consider that starvation in infancy is invariably associated with subnormal temperature unless an infection is present.

Demme[16] observed that within the first half hour after nursing the rectal temperature dropped a few tenths of a degree and in the next sixty to ninety minutes it rose from 0.3 F. (0.2 C.) to 1.4 F. (0.8 C.) higher than before nursing, and in the next 30 to 60 minutes it declined to the temperature noted before nursing. The disappearance of febrile temperatures coincident with the establishment of free lactation probably depends on the rapid elimination of absorbed toxic products (possibly from the cord or from abraded or inflamed surfaces) incident to the increased quantities of fluids taken, or more probably on the action of antitoxins derived from the milk.

Some observers are inclined to associate many of the pyrexias with uric acid irritation of the kidneys or anuria. In the majority of the newborn uric-acid infarcts are formed in the uriniferous tubules in the first ten days. Flensburg[17] believes they are formed by a deposit of urate of ammonium around an albuminous exudate in the tubules. Schreiber[18] considers the exfoliated epithelium of the tubules analogous to the desquamation of the skin the basis of the casts. According to Horbaczewski, the excessive excretion of uric acid is due to the great increase in metabolism and destruction of leucocytes in the newborn. These infarcts are washed out by the pressure and solvent action of urine secreted higher up in the tubules. The condition is so common to the first days of life that it is considered physiologic. When the urine is diminished in quantity and concentrated as the result of a febrile disturbance or existing diarrhea it is evident that there might be a temporary or permanent suppression of urine, which must be regarded as secondary to and not the cause of pyrexia, as anuria ordinarily is not accompanied by a rise in temperature.

While elevations of temperature in infants may be produced by apparently slight causes, it was noted by Epstein[19] that in many instances newborn, who during life presented no elevation of temperature or even showed apyrexia, succumbed to extensive inflammation of serous membranes, an analogous condition to which is occasionally found in the afebrile and virulent septic peritonitis of the adult. This would seem to suggest that the infant reacts not unlike adults to infection of similar tissues, so far as temperature is concerned. Apyretic infections, however, are the exception, as they are almost invariably associated with fever.

In 1892, in his clinical report of the diseased conditions found in a thousand newborn infants in the Gebär Anstalt in Budapest, Eross[9] stated that elevation of temperature was present in 431 cases. In 51 per cent. of these he referred the temperature to putrefactive changes in the cord, or inflammatory processes in the navel. In many of the latter the changes remained localized; in others they gave rise to general sepsis. In 25 per cent. of the cases febrile temperature was associated with dyspepsia or catarrhal enteritis. In twenty-one cases the cause of pyrexia was referable to inflammation of serous membranes or the lungs. In seventy-nine cases the source of the temperature was not determinable, but he believed it was due to foci of infection he could not locate.

While the above observations showed an unusual large percentage of infants developing temperature in the first days of life, it is quite in keeping with the earlier observations of Epstein,[19] who, in 1885, stated that in the Prague Gebär Anstalt 30 per cent. of newborn died of sepsis before the introduction of antisepsis, and that thereafter it was reduced to 5 per cent.

In 1895 Eross[9] wrote that since the employment of rigid prophylactic measures the febrile conditions in the newborn had been reduced from 45 per cent. to 11.38 per cent. No stronger evidence than these latter statements could be deduced to show that febril temperatures in the first days of life are a manifestation of infection or toxemia, even though we are unable at times to trace its origin and that they are preventable to a great degree by appropriate prophylactic measures.

The opportunities for infection in the newborn in the birth canal, at birth and subsequent thereto, are numerous, to-wit: By the contact of infectious material with the eyes, its entrance into the mouth or nose, to be later swallowed or aspirated; the introduction of the unclean finger into the mouth, and abrasions of the mucosa, which Epstein[19] demonstrated was the starting point of Bednar's aphthæ, which he also stated was capable of giving rise to sepsis in the infant; traumas incident to forceps delivery or subsequent accident; contaminated environment and unclean attendant; the existence of an always possible focus of infection, namely, the navel, which Quinquaud,[20] in 1872, was the first to suggest as the port of entry for infectious material in sepsis neonatorum, which had previously been regarded as a condition that developed *in utero* or during birth in septic mothers. The fallacy of this latter theory was subsequently proven by Runge,[21] who reported epidemics of sepsis occurring in the newborn while the mothers remained healthy.

Although infection from the navel has been enormously reduced since the introduction of asepsis, Eross[9] entertained the view that it had not been lessened to the extent that puerperal infection had in the mother. While there is a tendency to disregard changes in the cord stump or navel as a very frequent cause of temperature in the newborn, it is well to bear in mind that in pre-antiseptic days sepsis developing from this source was re-

15. Holt: "Diseases of Infancy and Childhood," p. 119.
16. Demme: "Im 14 Bericht über das Jennersche Kinderspital in Bern," 1877.
17. Flensburg: Virchow's Jahrsbericht, 1895, No. 11, p. 207.
18. Schreiber: Zeitft. f. klin. Med., vol. xxxvii.
19. Epstein: Med. Wander-Vorträge. No. 3, Berlin, 188.
20. Quinquaud: Quoted from Epstein Med. Wander-Vorträge, No. 3, p. 9.
21. Runge: "Die Krankheiten der Neugeboren."

sponsible for a large proportion of the deaths occurring among them, and that strict asepsis, with regard to the infant, is not always adhered to at the present time. Clinical observation and subsequent anatomic examinations show that even slight and superficial inflammatory processes in the navel are sufficient to give rise to general infection.

Cholomogroff's[22] bacteriologic studies showed that in the proximal part of a cord stump that is undergoing moist gangrene, micro-organisms identical with those obtained from the lochia in puerperal sepsis, namely, streptococci and staphylococci, are found. He suggests that this renders possible the transfer of septic material from the cord stump of a healthy child to the infant itself or to the mother.

In the various infections that attack the newborn, depending on its character, different micro-organisms are found. The bacteria above mentioned are those usually found in sepsis neonatorum, whatever may be its clinical manifestations.

The nasal and oral cavities are no less important as portals for entry of infection in the newborn than at a later period of infancy and childhood, and as a consequence infection of the respiratory and gastrointestinal tracts is not uncommon. Infections of the respiratory organs are far less frequent, however, than those of the gastrointestinal tube. While many of the disorders of the latter are simply functional disturbances, and others are slight gastrointestinal catarrhs, some of them assume the form of what Epstein,[19] and later Fischl,[23] described as gastrointestinal sepsis. It is a well-known fact that sepsis in the newborn may run its course as a gastroenteritis, as a general sepsis or pyemia, following navel or other local infections, as Buhl's or Winckel's diseases, the septic nature of which is no longer doubted, or under the clinical picture of an hemorrhagic diathesis,

Gastrointestinal disturbances, however, may exist as an associate symptom-complex with almost any acute disease of infancy, and, unfortunately, at times for the infant, they may occupy the entire attention of the physician, and the primary affection may be overlooked. On the other hand, the gastrointestinal symptoms may attain such a degree as to render their treatment of paramount importance. This is no less true occasionally in renal insufficiency in infants.

The following cases occurring as a ward epidemic in the newborn, presented many points of interest that appeared worthy of reporting:

CASE HISTORIES.

Case 1.—S., an infant, born Feb. 9, 1905, after normal labor. Nothing unusual was noted in the child. He weighed six pounds one ounce. Meconium was passed freely and he urinated twice in the first twenty-four hours, at the end of which time the temperature was 99.8 F. (37.8 C.) It rose thereafter, reaching the maximum elevation on the fifth and sixth days of 105.6 F. (40.9 C.), and continued as a remittent fever during his stay of fifteen days in the hospital. He nursed indifferently, was restless and vomited occasionally. Bowel movements were frequent, greenish in color and contained considerable mucus.

Examination.—Examination on the fourth day revealed a small male infant, considerably emaciated and very drowsy. Head, eyes and face negative. Throat congested. Respiratory murmur harsh. Heart area not enlarged. No adventitious sounds. Liver palpable. The cord dressing was stained with a brownish discharge of fetid odor. Cord stump was soft and of greenish color.

Examination of mother failed to show anything abnormal. Lactation was established on the third day. Breasts well filled. No excoriations or fissures of the nipples. The infant was again examined on the sixth day, when the physical findings were found the same, and in addition there was a papulo-pustular eruption on the neck, chest and arms. It was also noted that he coughed and sneezed occasionally and there was at times a slight nasal discharge present. He lost weight rapidly, and at the end of eight days weighed twenty-one ounces less than his birth weight, and did not regain any while in the hospital. The cord dropped off on the thirteenth day. The navel was excoriated, reddened and moist, an umbilici catarrhalis of Runge.

Case 2.—L., an infant, was born Feb. 15, 1905, after an uneventful labor. He appeared healthy and weighed five pounds and fifteen ounces. After receiving the usual attention he was placed in the same cot with infant in Case 1. His bowels moved regularly, but urine was not voided in the first forty-eight hours, after which time it passed freely.

At the end of the second day the temperature was 100.2 F. (37.9 C.), which continued to rise and persisted as a remittent fever for eighteen days. On the third day he weighed five pounds five and a half ounces, which he maintained until the disappearance of temperature. He was restless, slept little, coughed infrequently and nursed poorly. On the ninth day epistaxis occurred, and on the eleventh day there was considerable discharge from the nose.

Examination.—Physical examination gave practically the same results as noted in the infant in case 1, except no eruptions were present, and there was a loud systolic murmur heard over the cardiac area during the continuance of temperature, but disappeared thereafter. The cord, which apparently had undergone normal mummification, dropped off on the sixth day. With the subsidence of temperature, which had continued for seventeen days, all symptoms disappeared and he gained rapidly in weight. The mother pursued a normal course following labor and had an abundance of breast milk.

Case 3.—L., an infant, was born Feb. 15, 1905, after a normal labor. He weighed eight pounds four ounces and did not present any abnormalities. He was assigned to the same cot with the above infants. The bowels moved two to four times in twenty-four hours.

First urination recorded was forty-four hours after birth, at which time the temperature was 100.8 F. (38.2 C.), and continued to rise, reaching a maximum of 104.4 F. (40.2 C.) on the fourth day and persisting as a remittent fever throughout. He urinated freely on the third and fourth days, but thereafter there was complete anuria for six days. At first he was restless, nursed little, coughed and sneezed at times and lost weight rapidly. Later he vomited; bowels moved frequently; he was very drowsy and moaned a great deal.

Examination.—Physical examination gave practically the same as found in the infant in case 1. The cord mummified in its distal portion, but the proximal part was moist, brownish in color, with a slight discharge at its base. It dropped off on the fifth day, leaving a moist, excoriated surface.

On the tenth day he had frequent short eclamptic seizures. There was a constant and marked longitudinal nystagmus. The head was slightly retracted and later the legs and arms were somewhat rigid. After an attack of vomiting he became suddenly cyanotic and died in a few minutes.

The mother had an uneventful convalescence and a good supply of milk.

Case 4.—C., an infant, was born Feb. 18, 1905. He weighed six pounds and four ounces. There was a pressure paresis of the left facial present. He was placed in the same cot with the above infants. The nurse recorded a slight convulsion eleven hours after birth. At the end of thirty hours the temperature was 102 F. (38.9 C.) In forty-eight hours it was 106 F. (41.1 C.) Up to this time meconium and urine were regularly voided.

He was restless and, as in the case of the other infants, he coughed and sneezed occasionally. During the fourth, fifth and sixth days he urinated but once in twenty-four hours. Thereafter, with the drop in temperature, frequent urinations were recorded. The cord changes were similar to those mentioned in case 3. It dropped off on the tenth day. The mother did not present anything abnormal.

22. Cholomogroff: Zeitft. f. Geb. u. Gyn., 1889, vol. xvi, p. 34.
23. Fischl: Jahrb. f. Kinderhk., vol. xxxvii, pp. 290-292

Following are the findings of postmortem made by Dr. Bassoe on the infant in case 3:

Anatomic Diagnosis: 1, Acute rhinitis, pharyngitis, laryngitis, tracheitis and bronchitis; 2, uric acid infarctions in both kidneys; 3, catarrhal enteritis; 4, nodule in liver.

Examination: Weight, 2,450 gm.

There is a reddish discoloration of the skin, especially of the upper limbs. Slight excoriation about the umbilicus. The peritoneal cavity is empty. Rectum and sigmoid are distended with gas. Rest of intestine is not distended. The appendix is 6½ cm. long and bent on itself. Peritoneum is smooth throughout. Pleural and pericardial cavities are empty. Thymus is small. The pharynx contains very viscid whitish mucus. The posterior nares contain same kind of mucus. Mucous membrane of pharynx is hyperemic and smooth. No pus is found in sphenoidal or ethmoidal sinuses or in tympanic cavity. The larynx and trachea are filled with mucopus. On scraping off the mucus the membrane is smooth and very slightly hyperemic. The mucus is not blood-stained. Lungs are pink and crepitate throughout. Cut surfaces are smooth. Small amount of mucus can be expressed from the middle-sized bronchi. There are no visible areas of consolidation. Heart is proportionate in size and normal. Spleen measures 3½x2x1 cm. On section it is dark red and has a normal consistency. The tongue is smooth and has a normal appearance. Esophagus is smooth. The stomach is empty and contains small amount of mucus. Liver weighs 100 gm. Surface is smooth. There is some reddish discolorations on right lobe. Normal consistency on section. It is light grayish-red, in places pale red, lobular markings indistinct. On the surface of the left lobe is a yellowish-white, slightly raised area, 4 mm. in diameter. It extends 3 mm. into the interior, forming a globular nodule, sharply separated from surrounding tissue.

The gall bladder contains viscid bile. Kidneys of porportionate size. The capsule peels readily, leaving a smooth surface. All pyramids are of a grayish color. Urinary bladder is empty. Prostate is normal. Testicles are normal. The center of ossification in lower end of femur is 4 mm. in diameter. Line between bone and cartilage is regular.

Histology: Thyroid. Colloid very abundant, considering age of individual. In the bronchus were masses of red cells in which there are leucocytes adherent to the mucosa. The epithelium of the latter is well preserved; its vessels very hyperemic. In the lungs, septa were very hyperemic. Many alveoli are filled with red cells and leucocytes; most of them, however, remain open. No changes were noticed in the stomach and the intestine. There was considerable fatty degeneration in the liver. Urate deposits in tubules of pyramids, demonstrated in frozen sections, were found in the kidneys. On treating with H Cl, or acetic acid, uric acid crystals were formed.

Bacteriologic examination made by Dr. D. J. Davis gave the following:

The material examined bacteriologically was heart's blood, bile, cerebrospinal fluid, purulent masses from pharynx and bronchi. Heart's blood, bile and cerebrospinal fluid gave negative results.

Smears of the pharyngeal mucus showed a considerable number of an encapsulated Gram-staining diplococcus, evidently the pneumococcus, also a very large number of non-Gram cocci or diplococci, principally outside the leucocytes, though frequently within. Polynuclear leucocytes are very abundant. Smears of the bronchial mucus show the same organisms, but there are fewer pneumococci. Cultures were made on blood-agar plates from the pharynx and bronchus. Pneumococcus colonies were abundant, but far more numerous were colonies of micrococcus catarrhalis. On blood-agar the colonies of this organism are round, raised, grayish-blue, without a zone of hemolysis. It grows best on blood-agar or Loeffler's blood serum. In bouillon there is slight cloudiness at first, with formation of coarse granules, forming an abundant sediment in forty-eight hours. It does not change litmus milk and grows freely on potato. It is a non-Gram staining, small coccus, often in pairs and being frequently found in leucocytes is easily mistaken for the meningococcus. The amount of 5 c.c. of a twenty-four-hour bouillon culture was inoculated into the pleural cavity of a guinea-pig weighing 380 gm. The pig remained perfectly well, the culture apparently having no effect.

The postmortem did not show any important local changes in the navel nor an endarteritis or phlebitis of the umbilical vessels, there being noted only superficial excoriations, although during life the cord had not mummified normally and there was a brownish fetid discharge present. The bacteriologic examination of the blood, bile and cerebrospinal fluid was negative. All the clinical manifestations were, therefore, plainly referable to infection of the respiratory tract and to anuria incident to extensive uric-acid infarctions of both kidneys.

The little patients presented many points of clinical interest. They demonstrated the susceptibility of the newborn to infection of the air passages. They illustrated the rapidity of conveyance and the briefness of incubation in infection with the micrococcus catarrhalis and pneumococcus, likewise its tenacity and seriousness in the newborn. They suggested the contagiousness of what ordinarily might be termed a "cold" and gave color to the time-honored maternal observation that the "baby was born with a cold."

ETIOLOGY.

The original source of infection in these cases was not determinable. Gaertner[24] reported an epidemic of pneumonia in eight newborn in the Heidelberg Gebär Anstalt, caused by staphylococci and streptococci, which micro-organisms he was able to cultivate from the mattresses of the lying-in patients. This latter investigation does not, however, seem convincing.

Children born in the ward subsequent to my last reported case and kept in a different room did not develop temperature or evidence of disease, whereas all infants placed in contact with Case 1 and subsequent cases developed same.

The clinical symptoms presented considerable uniformity in all cases, but nothing characteristic. At times they were restless and slept little; at other times drowsy and not easily awakened. They coughed and sneezed, but infrequently, and neither could be regarded as a prominent symptom. There was a slight nasal discharge in two cases, one having epistaxis. They nursed poorly, vomited occasionally, and the bowel movement was somewhat frequent, sometimes green, and contained, on and off, mucus and curds. The urine often showed brick dust deposits. The temperature was high, remittent in character, and in the cases that recovered declined slowly to lysis.

Physical examination showed evidence of an acute rhinitis and pharyngitis. The respiratory murmur was harsh, otherwise negative. Respirations were somewhat accelerated. In two cases there were skin eruptions on neck, chest and extremities; in one papulo-pustular; in the other petechial.

Regarding the secretion of urine in these cases, it will be noted that the infant in Case 3 urinated freely for the first four days, when the temperature reached 104.4 F. (40.2 C.), after which time there was anuria for six days, when he succumbed, evidently to uremia. In this patient, as a result of the infection with accompanying temperature and diarrhea, the urine being concentrated and small in amount, was insufficient to force out or dissolve, as previously mentioned, the infarctions already formed, and instead contributed to increasing them by further deposits of urate of ammonium, the water being absorbed. Anuria resulted, leading subsequently to, in all probability, uremic poisoning.

It would seem that urinary suppression in the newborn

24. Gaertner: Quoted from Fischl in Jahrb. f. Kinderhk., vol. xxxiii, p. 289.

when associated with temperature is a result of the concentration of the urine incident to the cause of the latter, or a co-existing diarrhea, and to uric-acid infarcts in the kidneys, rather than that the temperature is due to the latter. It is hardly necessary to mention that this presupposes a normal anatomic status of the urinary tract.

TREATMENT.

The treatment of infections of the respiratory tract and all other infections in the newborn rests primarily in prophylaxis, a strict observance of asepsis and protection against infection of the infant while in the birth canal, at delivery, and subsequent thereto. The oft-repeated admonition of antiseptic douching at the onset of labor in case of suspected gonorrheal infection in the mother and the immediate care of the eyes by Credé's method ever holds good for the prevention of ophthalmia neonatorum. The douching also removes bacteria that are commonly found in the vaginal secretion and which, according to Kneise, are always present in the mouth of the newborn. The opinion was early expressed by Epstein[19] that contaminated amniotic fluid might be responsible in some instances for infection of the respiratory and gastrointestinal tracts in the newborn, and suggested the necessity of avoiding frequent examination after the rupture of the bag of waters. It is probable, however, that the pathogenic organisms of the vaginal bacterial flora which may be virulent would better explain such infections.

Of vital importance to the infant is the treatment of the cord, for which many methods have been advocated, some of which have been quite radical because of unfortunate occurrences. Because of an experience with tetanus in the newborn, Martin[25] advised cutting the cord after ligation with red-hot scissors. Dickinson[26] recommends excising the cord entirely, ligating the umbilical vessels, and suturing the skin over them, claiming that the sloughing process at the child's navel is not consistent with asepsis in child-bed. While a moist gangrene of the cord may not be, a normal mummification of the cord can not carry any such dangers.

Occlusive dressings have also been used, but Runge[21] long ago demonstrated that such a method delayed separation of the stump, which remained moist and fetid. An hygroscopic dressing of plaster-of-paris is also practiced, and Cholomogroff,[22] from his bacteriologic investigations, believed that it possessed advantages over other methods. Whatever be the method used, asepsis should characterize its treatment as thoroughly as the stump of an ovariotomy.

When an infection of the respiratory tract or any other organ or tissue develops in a newborn babe in a maternity ward it is evident from the above cases that it should be isolated, and that a nurse attending it should neither attend uninfected mothers nor children. Winckel stated that the same nurse should not at any time care for both mother and child. Where it is not practical to carry out Winckel's plan the infant should receive first care. There is little doubt that some infections in children may be conveyed through the medium of the attendant. In fact, as Kehrer[27] urged, the infant should not share the bed of its mother, nor, as might be added, the bed of other newborn, for obvious reasons. The infant should be protected against infections, acute or chronic, of the respiratory tract of the mother or nurse It is not improbable that the first infected of the above children acquired the same from the mother or the attendant.

Reich[28] reported instances of direct conveyance of tubercular infection by a midwife who was accustomed to blow into the nose of the infant to establish respiration after she had aspirated mucus from the oral cavity of the child, by aspirating directly with her mouth. Ten children so treated died within fourteen months from tubercular meningitis, although their heredity was negative. Later the midwife herself died from pulmonary tuberculosis.

The immediate care of the affected infant must necessarily be symptomatic.

In the above patients the temperature and restlessness were combated by sponging and bathing. The gastrointestinal symptoms were treated when the stools showed undigested material, by diluting the breast milk by the administration of sterile water before nursing, and in case vomiting was present, by prolonging the interval of nursing and giving lime water at that time. Enteroclysis was employed, also small doses of calomel, 1/40 gr., or castor oil.

To overcome the tendency to anuria, water was given frequently, and, at times, small doses of potassium citrate. The most effective measure in this regard, in addition to increasing fluids consumed, is the use of high rectal enemas of salt solution or sodium bicarbonate to be retained. They were given at six-hour intervals, about two ounces being used.

Concerning the immediate treatment of the respiratory tract, the nares were swabbed three or four times daily with boric acid solution. No expectorants were given because of the probability of increasing gastric disturbance.

AN OPERATION FOR PYOSALPINX WITHOUT LIGATURE, CLAMP, ARTERY FORCEPS OR BLEEDING, BY OVERTHROW PROVISIONAL SUTURE METHOD.

REPORT OF FIFTY-NINE CASES WITH ONE DEATH.

W. D. KELLY, M.D., Ph.G.

ST. PAUL, MINN.

(*Concluded from page 1017.*)

Case 17.—R. D., aged 19, single, was admitted to hospital Aug. 1, 1903.

History.—The patient had diphtheria, when a child, influenza and scarlet fever; had gonorrhea about four years ago; at the same time had four sores on labia; she was told they were chancres; had been taking blood medicine for two years; says she was cured of gonorrhea two years ago, and contracted it again for the second time and was cured; says she was rachitic when a child.

Diagnosis.—Right-sided pyosalpinx; appendicitis.

Operation.—Single salpingo-oöphorectomy, appendectomy. The right ovary, right tube and vermiform appendix were found to be bound together with firm peritoneal and omental adhesions; a large band of omentum ran across from the anterior abdominal wall to the fundus uteri. The adhesions were broken up with difficulty. The right tube and ovary were isolated, but in lifting up the tube it ruptured and pus escaped. The opening in the tube was clamped and the tube and ovary (right) removed by making a short incision in the broad ligament and whipping over the uterine edge of the ligament with Billroth's chain suture, proceeding in this way, cutting and tying, until the tube and ovary were almost removed. They were then raised up and slightly drawn on, so as to form a

25. Martin: Zeitft. f. Geb. u. Gyn., 1900, 42, S. 593.
26. Dickinson: Amer. Jour. Obs., 1899, vol. xl, p. 14.
27. Kehrer: Beiträge z. vergleichenden u. experimentellen Geb[illegible] No. 4, p. 35.
28. Reich: Berl. klin Wochft., No. 37, 1878

pedicle, which was tied off with pyoktannin catgut, No. 3. The apex of the appendix was freed of adhesions, seized with artery forceps and raised up; the remainder of the appendix was freed and double ligated with catgut and removed by cutting between two ligatures. The peritoneal flap was closed with fine catgut suture. The patient was discharged, well, Sept. 29, 1902.

Case 18.—L. A., aged 54, a widow, was admitted to the hospital Aug. 5, 1903.

History.—The present trouble began three weeks ago with chills and vomiting. She had very severe pain in left side, which was very tender. She had chills three successive days; she went to bed, but got no better. After abont ten days she began to have a discharge from the uterus. The pain still kept up and the discharge was very offensive and yellow in color. This discharge gradually ceased and she suffers less pain.

Diagnosis.—Pelvic inflammation, pyosalpinx (left).

Operation.— Salpingo-oöphorectomy. An incision was made in the median line, about five inches long between the umbilicus and the pubes. It was necessary to make such an incision on account of the belly wall. Numerous adhesions were found between intestines and omentum. These were broken up with the fingers and the appendix was exposed; this structure was normal. The ovaries and tubes were found to contain abscesses. Adhesions were found to anterior abdominal wall, and several large adherent portions of omentum were tied off and excised. A broad ligament hemorrhage on the left side was found. A partially organized clot was found about the size of a hen's egg; it was shelled out, and a cyst of the same size was opened. A continnous over-and-over suture was employed, and the ovaries and tubes were removed with very little hemorrhage. The cavity was swabbed ont so as to free it from blood clots and other foreign substances; the peritoneum was sutured with pyoktannin catgut No. 2; also the fascia of the rectus muscle. The skin was sntured with silkworm gut, a dry dressing was pnt over the wound and the patient sent to bed in good condition, but died Aug. 16, 1903.

Case 19.—F. S., aged 19, single, was admitted to hospital Aug. 18, 1903.

Diagnosis.—Pyosalpinx, cystic ovary, appendicitis.

Operation.—Laparotomy: salpingo-oöphorectomy, appendectomy. An incision was made in the median line between the umbilicus and the pubes, about four inches in length, down to the peritoneum, which was grasped with two pairs of dressing forceps and lifted up and cut. The ovaries, tubes and appendix were then explored; the fundns of the uterns was found in Douglas' cnl-de-sac. Some adhesions were found also and a pus tube and an ovary which had a few small cysts on the surface. The left tube and ovary were taken out, the broad ligament being sntured. An extra tube abscess was opened during the operation and pus escaped, which was wiped away by sponge. All adhesions were broken up and appendix removed. A cuff was dissected and the appendix ligated, cnt off and touched with 95 per cent. carbolic acid, followed by alcohol. The cuff of peritoneum was closed over the end and the whole inverted. A ventral suspension was performed, two pyoktannin, No. 2, catgut sutures were placed through the peritoneum and through the posterior portion of the fnndus of the uterus and tied; the intestines were carefully mopped and the peritoneum was closed by continnous suture of No. 2 catgut. Muscles and fascia were then sutured with same suture and the skin closed by subcuticular stitch of silkworm gut. Patient was discharged, well, Sept. 23, 1903.

Case 20.—Mrs. H., aged 35, admitted to hospital April 1, 1904.

History.—The patient has had several attacks of gonorrhea. She complained of pain in the right and left lower quadrants of abdomen and of pain in back. Temperature, 100; pulse, 105. She had constipation, headache and furred tongue, offensive leucorrhea discharge.

Diagnosis.—Lacerated cervix; inflammation of uterus and a large retroflexed uterus fixed posteriorly; large packet found on both sides of uterus; considerable pain and tenderness in pelvic region.

Operation.—Salpingo oöphorectomy. The abdomen was opened in the median line with the patient in the Trendelenburg position. Bowel, omentum and rectal adhesions were cut away and tied. Adhesions of bowel were separated and bowel and omentum allowed to drop back from site of operation. A large piece of gauze was inserted for drainage. Pelvic peritonitis was present. The tubes were freed, and the ovarian and uterine arteries were tied on the left side. On attempting to separate the tube from its attachment to the broad ligament, the ligature slipped from the ovarian artery and the profuse bleeding was stopped with difficulty. The bleeding artery after ligating was cauterized. There was considerable oozing from freed adhesions. The broad ligament was stitched and an attempt was made to cover raw surfaces with peritoneum. The patient suffered slightly from shock, but otherwise made an uneventful recovery, leaving the hospital on the nineteenth day after the operation.

Case 21.—Mrs. W., German, aged 27, admitted to hospital April 1, 1904.

History.—Patient has no children; she has had no abortion; no gonorrhea. She is thin and anemic. She complained of a dragging pain in her left inguinal region. She had typical hysterical crouch and expression of face, with position of palsied hand when attempt is made to examine side. This paient was pronounced a confirmed hysteric. There was a tough, light-colored, stringy, tenacious discharge from the cervix. She was constipated. Temperature was 99.6; pulse, 96. She complained of headache and general malaise. She has had repeated attacks of pain in right side.

Diagnosis.—The patient was examined with much difficnlty. I found the uterus deflected to the left side, somewhat fixed laterally on the right side. I made a diagnosis of retroverted uterus. A large mass was felt through the abdominal wall, which wall was thin.

Operation.—Oöphoro-salpingectomy. The adhesions on the right side were very dense. The omentum was separated and an inflamed mass was found, a portion of which crossed the pelvis. Its middle portion and distal end were adherent, respectively, to the tube and to the posterior wall of the uterus. After tying and freeing the appendix it was removed (cuff method). The tube and ovary were removed by clamping and cutting below tube, then following up cut surface by running suture and tying off the tube at the horn. In the left broad ligament a large organized clot, the size of a goose egg, was found. The ligament was split and the clot removed, after which the ligament was closed with running suture. Patient was discharged, well, April 24, 1904.

Case 22.—Mrs. M., admitted to hospital July 15, 1904.

Diagnosis.—Left pyosalpinx.

Operation.—A median incision, three inches long, was made between the umbilicus and the pubes with the patient in the Trendelenburg position. The intestines were packed back. There were adhesions between the left tnbe and the sigmoid. The left tube was coiled aronnd the left ovary, which was normal. When the bowel was torn from the adhesions, pus appeared, which was sponged away. No. 2 pyoktannin catgut was used for provisional sutures in stump of broad ligament, as the tube was cut away. On section of removed tube pus in considerable quantity was found in the lumen of the tnbe. In removal of the tube part of ovary was also removed. The other tube and ovary, as well as the appendix, were normal. The peritoneum was sntured with No. 2 pyoktannin catgut; the fascia with No. 3 pyoktannin catgut, and the skin with a subcuticular suture of silkworm gut. A dry dressing was applied. Patient made a good recovery from the anesthesia. Pain was severe. The temperature varied from 99 to 101.4, which was the highest until she was discharged, August 3, thoroughly recovered.

Case 23.—M. R., aged 19, white, clerk.

History.—She has always enjoyed good health. The present trouble dates back two weeks. It began with constant, sharp pain in right iliac region, which disappeared in a few days and then returned in left side. Menstruation began at 13 and was regular until one year ago; it was always profuse, lasting abont two days. Menses were accompanied by pain and back-

ache. During past year menstruation has been irregular and attended with sharp pain, compelling patient to go to bed.

Examination.—Patient was well developed and had good color. Lungs and heart were normal. Pulse was regular, but fast (120). In the lower part of the abdomen and extending to one inch below the umbilicus a large mass could be felt. It was firm on palpation, dull on percussion and very painful and tender on pressure. The left side was more tender and painful than the right.

Diagnosis.—Gonorrhea, endometritis and double pyosalpinx.

Operation.—June 28, 1904, a median incision was made. The right ovary and tube were adherent. The adhesions were broken up and the broad ligament ligated by a continuous suture. The tube was removed; it was enlarged and inflamed. A number of cysts were found in the mesentery and about the left tube and ovary. The patient was discharged well July 14, 1904.

CASE 24.—Mrs. F. P., aged 32, white, housewife, admitted to hospital June 4, 1904.

History.—The patient has had three children, the oldest is now 14, and the youngest 8 years old. In February, 1904, the patient had an attack of pain in the lower right quadrant of the abdomen. This was accompanied with vomiting and fever. About three weeks before admission to the hospital she was again seized with pain in the lower right abdomen, accompanied by fever. Attempts at vomiting were painful.

Examination.—The patient was well nourished, with a good color. Her eyes were clear and bright; the tongue was slightly coated. Lungs and heart were normal. The abdomen was tender on palpation and the percussion note on the right side was dull. An abscess could be palpated filling the lower right pelvis and extending as high as McBurney's point and an inch to the left side of the median line.. Urine examination was negative.

Diagnosis.—Double pyosalpinx.

Operation.—June 7, 1904, an incision was made in the median line. Adhesions were found involving the peritoneum, omentum, intestines, ovaries, tubes and bladder. Those involving the intestines were broken up. A mass was found on the right side, involving ovary, tube and omentum and adherent to the upper posterior part of bladder. This mass was removed after a partial removal of pus from the tube by aspiration. The puncture was closed with forceps and no pus escaped. The broad ligament was sewed up by an over suture, and part of the ovary was stitched to the right cornu of the uterus. The omentum was ligated and cut from adhesion. Right and left extra tubal abscesses were opened. The broad ligament was adherent to the upper part of the uterus and a portion of the rectum, and in breaking these adhesions the peritoneum was pulled from the uterus, leaving it bare. Stitches were taken, bringing the peritoneum from before backward and from below upward and forward, covering the bare upper portion. Left ovary and pus tube were removed without rupture, and the incision was closed. The patient was discharged well, Aug. 11, 1904.

CASE 25.—B. M., aged 21, white, American, domestic, admitted to hospital May 27, 1904.

History.—When the patient was 16 she had an attack of cramps in abdomen, accompanied with vomiting, and pain on the right side. Last February she had a great deal of pain in the right side, though it did not confine her to bed. On Monday previous to admission to hospital, about 10 a. m., the patient complained of pain in the abdomen and on the right side. Bowels have moved fairly regularly.

Examination.—Patient is well nourished; her color is sallow; eyes yellow tinged; tongue slightly coated. Lungs and heart are normal. Pulse is strong and full, but rapid (100). Abdomen was tense, and she complained of pain on palpation over the umbilicus and on the right and left sides. Percussion note showed no tumor on the right. Deep palpation in the right iliac region caused pain. Temperature 101. There was no rash on the body. Urine examination was negative.

Diagnosis.—Double pyosalpinx.

Operation.—A large pyosalpinx was found on both sides, firmly adherent to adjacent parts. On breaking up adhesions on the left side, the sac was ruptured and the pus escaped into the peritoneal cavity, which was wiped out carefully, the intestines having previously been walled off, by sponges. The left tube and ovary were excised and a chain suture inserted to ligate the broad ligament. An abscess on right side ruptured in freeing adhesions, and the pus carefully wiped out. The right ovary was normal and was left *in situ*. The right tube was excised. Both tubes had become adherent to the sigmoid, and after removal two large denuded areas were sutured over by continuous suture, bringing the peritoneum over the sigmoid. On July 14, 1904, an appendiceal abscess was diagnosed and on July 16 the patient was operated on. She was discharged, well, Aug. 10, 1904.

CASE 26.—M. W., aged 18, white, American, domestic, admitted to hospital May 7, 1904.

History.—Patient complained of pain in abdomen and low in pelvis, on both sides for about two weeks. She had a temperature of 101.2 on admittance to the hospital. She denied having a vaginal discharge, but later admitted that she had. She has some pain and burning on urination. There is no history of syphilis.

Examination.—Patient is well nourished, strong and healthy. Her color is good, eyes clear and bright, tongue coated. Cervical glands are not enlarged. Heart is regular and strong, and lungs normal. There was no rash on the body. There was tenderness on palpation, low in pelvis, on both sides. Albumin was present in the urine.

Diagnosis.—Right pyosalpinx, gonorrhea, inguinal bubo.

Operation.—May 18, 1904. Large right-sided pus tube was adherent to intestines and down in cul-de-sac. It was freed by dry dissection, excised and stump overcast with catgut sutures, a buttonhole stitch covering in abraded surfaces. Pelvis was sponged dry and peritoneum closed. Patient left table in good condition. Recovery was uneventful, and the patient was discharged June 18, 1904.

CASE 28.—L. H., aged 23, white, admitted to hospital June 17, 1904.

Diagnosis.—Double pyosalpinx.

Operation.—June 17, a median incision was made. Tubes and ovaries were adherent to surrounding tissues. The right Fallopian tube and ovary were first loosened, and in so doing an extratubal abscess was perforated and the pus escaped into the peritoneal cavity, which had previously been walled off with sponges. The pus was mopped out. The ovary and tube were removed and the broad ligament sutured by continuous suture. In breaking up adhesions on the left side, another extratubal abscess was ruptured, the pus being sponged out. The tube and ovary were removed and the broad ligament treated as on opposite side. The appendix was sought for and found involved. It was removed and the abdomen closed Patient was discharged, well, July 30, 1904.

CASE 29.—Mrs. C. A. S., aged 30, white, American, housewife, admitted to hospital April 5, 1905.

History.—Patient had measles as a child, diphtheria at 11, typhoid three years ago and smallpox two years ago. Menses began at 15 and are regular. She has four children, the oldest 8 and the youngest 5 years old. She had a miscarriage last fall, fetus 6 weeks old. She was operated on for pelvic abscess last September. She has been sick for the last month, with pain in the left inguinal region and pain in the left leg. She has had a leucorrheal discharge for same length of time. She was in bed first and has been unable to do any work. Bowels are regular, but appetite is poor.

Examination.—Patient is fairly nourished, but anemic. Tongue is clean. Eyes, chest, lungs and heart are normal. Breasts almost absent. She states that they began to disappear after typhoid. She had twins 14 months old, who were still at breast at that time. There was tenderness over the left inguinal region and a mass was palpable. Urine examination was negative.

Diagnosis.—Double pyosalpinx.

Operation.—April 11, 1905. A median incision was made. The entire contents of the pelvis, including bladder, both tubes and ovaries, intestines and omentum, were adherent. These were carefully separated by means of blunt dissection. The fimbriated end of the right tube was adherent to the ovary

and there was a small abscess in between. The right ovary and tube were removed by separating them from the broad ligament by scissors and the edges of the ligament were united by continuous overstitch of catgut. An incision through the peritoneum was made in each side and the same suture continued through horn and tube. On the left side the adhesions were more complicated and involved large portions of intestines. This was all separated by blunt dissection. In one place a rather deep hole was left in the intestine from adhesions, but edges of it were stitched over. The tube and ovary were separated in the same manner as on the right side, but the tissues were so friable that they tore several times. A saline enema was given to see if there was any intestinal leakage; none was found. The abdomen was mopped out, and the peritoneum brought together by a single mattress suture above and an overstitch for the rest. Fascia and muscle were united by another overstitch, taking in line of suture peritoneum. Skin was closed. The external wound was treated by the open method. On April 15 there was a foul odor and a discharge from the vagina. On April 20 there was a profuse discharge from the abdominal wound and four ounces of pus were expressed. The opening in the bowel was searched for and found. After the bleeding was controlled, the edges of the bowel were resected, a Murphy button introduced, the parts brought together and the bowel sutured. At the time of making this report the patient is still in the hospital.

Case 30.—A. B., aged 22, married, was admitted to hospital April 2, 1904.

History.—The patient had smallpox when 3 years old and "inflammation of bowels" when 21 years old. She is married, but has no children. A week previously was seized with pain in the abdomen, vomiting and general distress. She has had profuse offensive yellowish discharge from the vagina for three weeks, and is still very tender over abdominal region. She is constipated a great deal of the time.

Diagnosis.—Double pyosalpinx.

Operation.—Double salpingo-oöphorectomy. An incision was made in the median line, about four inches long. Both tubes were seen to be adherent and greatly enlarged; a very superficial abscess could be seen in the left tube. The left tube was freed from adhesion, and in so doing an extra tubal abscess was opened, considerable pus escaping. The tube and ovary were removed and the broad ligament sutured. The right tube and ovary were freed from adhesions, another extra tubal abscess opened. They were removed in the same manner as the left. The appendix was examined and found normal, so was left alone. The pelvic cavity was sponged out. The peritoneum was closed with No. 2 pyoktannin catgut. The same suture and stitch closed muscle and fascia. A subcuticular silkworm gut suture closed skin opening. The patient made an uneventful recovery and was discharged May 20, 1904.

Case 31.—C. S., aged 22, single, was admitted to hospital April 23, 1904.

History.—The patient has been troubled with constipation and some headache. About five weeks ago she had pain in the stomach and pelvis. She has not vomited, but her appetite is poor and she feels distressed after eating. She has a discharge from the vagina of about five weeks standing and complains of pain in the back. She does not sleep well, and has menstruated three times in six weeks.

Diagnosis.—Pyosalpinx (left).

Operation.—Single salpingo-oöphorectomy, appendectomy. A median incision was made about four inches long. Intestines, bladder, tubes and uterus were found to be adherent; adhesions were broken up by dry dissection, using sponge on finger. Right tube was freed and examined; it was somewhat distended. It was aspirated, but no fluid was found.. The appendix was found deep in the pelvis; it was freed and brought up. The serous coat was stripped off, forming a cuff. The mesoappendix was cut away and overcast with running suture of No. 2 catgut pyoktannin. The appendix was then clamped and cut off; the stump was cauterized with 95 per cent. carbolic acid, followed by alcohol, turned in and purse-string suture put around cuff and drawn tight. The left tube was much enlarged and firmly adherent, deep in cul-de-sac. In freeing the tube an extra tubal abscess was opened, allowing a fluid to escape; this was sponged away. The fimbriated extremity was brought out and the ovary and tube cut away, small cuts being taken and each one followed by overcasting with running buttonhole stitch. Skin was closed with subcutaneous stitch of silkworm gut. The patient was given an enema of warm oil and whisky. Recovery was uneventful, and the patient was discharged May 23, 1904.

Case 32.—G. R., aged 24, white, American, was admitted to hospital June 2, 1905.

Diagnosis.—Double pyosalpinx.

Operation.—June 3, 1905. A median incision was made. The left tube was found much diseased and swollen; it was very thick and distorted and contained an abscess which was broken in attempting its removal. The tube and ovary were removed with scissors and the ligament caught up with suture. When the fundus of the uterus was reached the sutures were continued to approximate the edges after excision of a small fibroid. The right tube and ovary were found diseased, but contained no pus; they were removed in the same way. Abdomen was closed. The abdominal wound was closed with a modified open method. Two pieces of gauze were applied on either side of the wound and only oxid of zinc strips applied. The patient was discharged well June 21, 1905.

Case 33.—Mrs. M. S., aged 34, white, American, clerk, was admitted to hospital April 25.

History.—Patient has always had good health. She has had one miscarriage. Menses began at 12 years; regular. Seven weeks ago she began to have a yellowish discharge from vagina and shortly afterward began to have pain in the pelvic region. She refused operation at this time. She did not have menses during March, but did in April. She came to hospital on April 25, 1905, for operation.

Examination.—Patient is poorly nourished and anemic. Tongue is clear. Eyes, chest and lungs are normal. Heart gives systolic apical murmur, and second pulmonic sound is accentuated; murmur is transmitted to axilla. There is tenderness over the region of the ovaries; abdominal muscles are rigid. Urine examination was negative.

Diagnosis.—Double salpingo-oöphoritis.

Operation.—April 28, 1905. A median incision was made. The omentum was adherent to the bladder and the adjoining organs and was separated by digital dissection. The right tube was thickened and tortuous, and the ovary had a large cyst, which was ruptured in trying to remove it. The tube was severed from the broad ligament by scissors and the ligament caught up by suture from fimbriated end to horn and the tube removed. The left tube was also much thickened and tortuous and there was an abscess at the distal end which was opened in freeing adhesion. The tube and ovary were removed in the same manner as on opposite side. On the posterior surface of the uterus there was a small pedunculated fibroid, showing cystic degeneration. This was cut off and the raw surface stitched over. The appendix being involved in the inflammatory catarrhal action, was removed, and the abdomen closed. An ether mask was applied over abdominal wound and held in place by two strips of rubber plaster. It was removed on the sixth day and the wound was found completely closed, subcuticular stitch was removed, and two pieces of gauze applied on either side of the wound, held in place by rubber adhesive strip. On eleventh day the wound was entirely healed. Patient was discharged, well, May 22, 1905.

Case 34.—N. W., aged 18, white, American, saleswoman, was admitted to hospital May 29.

History.—Menses began at 12. As a rule, the flow was irregular, both in time and number of days; rather painful, but not severe enough to compel patient to remain in bed. Loss of blood was excessive. Last menstruation was on Thursday preceding admission, but only of 1½ days' duration. Full term pregnancy four years before. The present trouble began a week before admission with pains in back and in lower left quadrant of abdomen. Patient has had vomiting, loose bowel and headache for past few days.

Examination.—Patient is well nourished. Her color is good; mental condition good; eyes are bright; tongue is coated.

Breasts are well developed and firm. Abdomen is flabby and shows old scars of pregnancy, but there is no abnormality in outline. There is some tenderness over McBurney's point, but not in right inguinal region. Abdomen on right side is soft. On left side there is distinct firmness over left quadrant low down and it is tender on pressure. Both areas are tender on pressure and painful. She has a vaginal discharge.

Diagnosis.—Salpingitis (left).

Operation.—June 1, 1905, a median incision was made. Intestines were pushed aside and kept there by sponges. The left tube and ovary were much inflamed, distorted and adherent. The adhesions were all broken up and the tube and ovary removed by beginning at end and cutting them away with scissors. Broad ligament was caught up by suture to control the hemorrhage. After carefully wiping out the peritoneal cavity the right tube and ovary were examined and found somewhat inflamed, but were not removed. Abdomen was closed. Abdominal wound was treated with two strips of gauze on either side of incision, held in place by adhesive strips. Patient was discharged, well, July 3, 1905.

CASE 35.—Mrs. P., aged 38, white, German, housewife, was admitted to hospital June 9, 1905.

History.—She complains of pain in the lower part of the abdomen and weakness of legs. She has been unable to do her work for some time because of the weakness. There is a feeling of fullness in throat. She has a white vaginal discharge. She was troubled similarly two years ago and came to the hospital and was operated on. A ventral fixation was done, and the right tube and ovary were removed. Recently the trouble returned. Family history was not obtainable.

Examination.—Patient is a large fat woman, with good color and well nourished. There is a scar on abdomen from previous operation. Heart, lungs and abdomen normal. There is a leucorrheal discharge. Urine examination was negative.

Diagnosis.—Pyosalpinx (left).

Operation.—June 10, 1905, a median incision was made. The operation was difficult on account of thickness of abdominal wall. The left tube and ovary were removed by cuting the tube from broad ligament with scissors and suturing the broad ligament as the incision proceeded. There was little pus, if any in the tube, but tube and ovary were prolapsed and adherent in the cul-de-sac; there were also adhesions in this region. The tube was ruptured in removal and the ovary was removed in pieces. Hemorrhage was controlled by sutures. A tear in the peritoneum over the sigmoid was closed with Lembert sutures, abdomen closed and external wound treated by modified open method. Patient was discharged well July 6, 1905.

I have selected 35 out of 59 most interesting and complicated of my cases which I have taken from the different hospital records. The time allotted to me will not permit of my reporting all the cases in detail. In 24 which I report, but not in detail, the patients made uneventful recoveries and were discharged well.

DEDUCTIONS.

The most frequent causes of pyosalpinx are abortion and gonorrhea.

Pyosalpinx occurs most frequently between the ages of 16 and 40.

My mortality from operation is less than that from measles, being under 2 per cent.

It occurs, in the great majority of cases, either in the ampulla or distal end of the tube.

It is complicated very frequently with appendicitis.

In the majority of cases, it is accompanied by cystic ovary.

It is comparatively easy to differentiate from appendicitis.

It almost always is accompanied by a pelvic or general peritonitis.

The tube seldom, if ever, ruptures.

The operation, as described by me,* is almost bloodless and can be performed without the use of ligatures or artery forceps.

Drainage is almost never necessary.

Counter openings should not be made.

Extratubal or peritubal abscess is frequently found, in which the walls are made up of bowel, or omentum, tube, broad ligament, sigmoid, uterus, or bands of adhesions. This condition is frequently mistaken for rupture or abscess of ovary or tube, as it is impossible to separate or to encroach on this abscess without opening it.

THE STATE OF NEW JERSEY VERSUS GEORGE H. WOOD.

A REVIEW OF THE EVIDENCE AND OF THE THEORIES AVAILABLE FOR THE DEFENSE.*

PEARCE BAILEY, M.D.
Consulting Physician to the Manhattan State Hospital.
NEW YORK CITY.

On Feb. 2, 1905, about noon, George Williams, a grocer of Watchung, N. J., was found in his sleigh, shot through the back, on a lonely part of the road between Watchung and Warrenville (near Plainfield), N. J.

When last seen alive, Williams was in the sleigh with George H. Wood, the latter having hired Williams to take him from Watchung to Mt. Horeb. There was no apparent motive for the crime, Wood and Williams never having met until the fatal morning and no attempt at robbery had been made. Wood was tried for murder in the first degree at Somerville, N. J., May 15-19, 1905, before the Hon. A. G. Garretson and a jury. The defendant pleaded "not guilty," advancing as his defense that he had no clear recollection of anything between the dates of Jan. 30, 1905, at noon, and Feb. 5, 1905, when he awoke in the city prison of New York.

Such a defense, in face of the fact that many witnesses had met and talked with Wood in and about Plainfield, both on the day of the murder and for several days previously, and had noticed nothing peculiar about him, marked the case from the outset as out of the ordinary. It was circumstantially proved, with almost absolute certainty, that Wood killed Williams.

To explain the period of automatism with amnesia, alleged by Wood, several hypotheses were advanced by the experts called in his behalf, all of whom testified that Wood was irresponsible or insane at the time of the commission of the crime. These hypotheses were not accepted by the state's medical witnesses, and it was the general opinion that, had the case gone to the jury, the defendant would have been found guilty.

The defendant's counsel realized this, and at the same time the prosecutor, in view of the impossibility of showing strong motive, recognized that there was sufficient doubt as to the defendant's mental balance to justify a lesser verdict than death. Consequently, at the end of the trial, after consultation between counsel of the two sides and the presiding judge, the original indictment was withdrawn, the defendant pleaded guilty to murder in the second degree and was sentenced to thirty years at hard labor in the penitentiary, the maximum penalty.

The whole interest in the case centered in the story told by Wood. He told and retold it to many persons before the trial, he told it at the trial. It was always the same in important particulars. Under rigid cross-ex-

* Read at a meeting of the Psychiatrical Society of New York

amination few or no inconsistencies in it were brought out, and the prisoner fell into none of the traps which were laid for him. He told it, moreover, in a very convincing way; calmly, coherently, without dramatic exaggeration; in the simple, unaffected manner characteristic of the truth. Was it true? Did Wood have no recollection of what occurred between January 29 and February 5? That was practically the question the jury would have had to decide had the opportunity been given them.

WOOD'S STORY.

As Wood told it to me about seven weeks before the trial the following is the story:

On Saturday, Jan. 28, 1905, Wood, an iron worker and contractor in a small way, had a conference with two men, named respectively, Wolfe and Mack, the object of which was that Wood might obtain a loan of $1,000, the money to be advanced by Mack's father, who lived in Scarsdale, Pa. The conference took place at a schoolhouse in New York City, where Wood was doing some iron work, and no one except Wood saw either of the two men. Wood knew Wolfe pretty well. Mack he had known two years previously when working at Long Branch, where Mack was a foreman or engineer. Wolfe was a traveling man. Wood did not know where either of these men lived. Wolfe brought Mack to the conference, Wood having seen Wolfe the day before. As a result of the conference it was agreed that Mack should go with Wood to Scarsdale on the following Monday. Wood did not regard it as peculiar that Mack should endeavor to get the loan for him. As the trip was to take a week, the following day, Sunday, Wood moved his family from his flat in One Hundred and Thirty-first Street to the home of his wife's sister in Twenty-seventh Street. He himself slept in his flat that Sunday night and the next morning started out, according to the arrangement, to meet Mack at the Pennsylvania Railway ferry at Cortlandt street at 9:45 o'clock.

In the street he met Wolfe, although he had no appointment with him, and Wolfe told him that the arrangements were changed somewhat; that Mack had gone on ahead, and that he (Wolfe) and Wood would go together to meet Mack. Wood had $28 at this time. Wolfe went to do some errands for Wood. Wood went to the barber's and had his moustache shaved off, and at about 12 o'clock the two men met at Cortlandt street and took the train for somewhere, Wolfe having bought the tickets.. Wood did not know where they were going, nor did he notice the names of the few stations at which the train stopped. Wherever it was, it was a junction at which they were to meet Mack and thence continue the journey to Scarsdale with him. Arriving at the junction after about an hour on the train, Mack met them and they all went across the street to a resturant. Wood described the junction in some detail, but the description did not fit any junction near New York. At the restaurant they had something to eat and some beer. After the beer Wood remembers nothing till he woke up in the Tombs on February 5. On awakening in the Tombs he had no money. He had on a cap instead of a hat which he had started with, and a red sweater which he could not account for. The grip, which Wolfe had bought for him, and in which his things were, had disappeared.

Wood said that he had no definite recollection of anything that transpired between Monday, at the junction, and the following Sunday in the Tombs, but that he had a confused idea of a little dark man following him and leading him, of being continuously on the train, and of talking with his wife and children. He denied all knowledge of being in or near Plainfield at the time he was seen there; said he never had heard of Williams; that he had not had a pistol since the preceding August, when his own was stolen.

Such was substantially the story Wood told me. In what way he changed it in subsequent rehearsals will be referred to later.

SUMMARY OF WOOD'S REAL DOINGS.

What actually happened during the period referred to above, as testified to by witnesses at the trial, is as follows:

On Saturday, Jan. 29 Wood told his wife he was going to Searsdale with a Mr. Mack whom he had known slightly at Long Branch, and of whom Mrs. Wood had heard him speak several times. He was going to get some money, he said. Accordingly the family moved from One Hundred and Thirty-first Street to Twenty-seventh Street on Sunday, Wood going back to his own place to sleep and, probably, slept there. He was next seen at Blinn's Hotel in Plainfield, N. J., on Monday afternoon, where he registered in his own name, taking a room without board. He brought with him a valise in which were found subsequently, his business cards, letter heads, some toilet articles, and a box of 32 caliber cartridges. That evening he retired early. The next morning, Jan. 31, he hired a horse and sleigh with driver to take him to his grandmother's place at Mt. Horeb, and reached there before noon. He talked naturally with his grandmother, who said he was "never kinder or nicer." She said he had a wild look in his eyes. Wood's father-in-law, a Mr. Whitten, lived about half a mile from his grandmother, and after eating lunch at his grandmother's, Wood made a call on his father-in-law. Returning in a short while he paid the driver who had brought him out and told his grandmother he had business with his father-in-law and would spend the night with him, which he did. He said to his grandmother that a man named Mack had

The defendant in the case, George H. Wood.

gone to Pennsylvania after beams and when he came back there would be plenty of work. He said that if Mack didn't come by Saturday he would return to his grandmother's.

Wood returned to his father-in-law's house about 7 p. m. and spent the night there with him. The two men slept together and Wood went naturally to sleep. He laid before his father-in-law a proposition that he (Mr. Whitten), should come to New York and work for him as book-keeper, which proposition was accepted. He gave Mr. Whitten a $2 bill, which the latter said was an unusual performance. Otherwise he noticed nothing wrong with Wood, finding him exceptionally goodnatured and agreeable.

On the morning following Wood returned to his grandmother's. On the road he met a young man named Linnartz, whom he had known before and who was then working for his grandmother, Mrs. Pollock. Linnartz told Wood that he was going into Plainfield and would drive him in, which he did. On the way Wood took a revolver from his pocket and fired it three times, explaining that he wished to see if the dog which was following them was still gun-shy. He said the cartridges were blank. He had a cap in his pocket which he put on for part of the drive, saying it was too cold for a hat. On arriving in Plainfield he and Linnartz had a few drinks together and then Linnartz went home. That afternoon and evening Wood passed in the bar room of the hotel, talking, smoking and drinking with a number of persons. He was sociable and pleasant. At 11 o'clock the proprietor of the hotel shut up. Wood at first seemed disinclined to go upstairs, but finally did so without disturbance. There was no evidence to show that he was intoxicated at any time.

The day following, Feb. 2, was the day of the shooting. The hostler saw Wood leaving the hotel and exchanged "Good morning" with him. At about half past 9 that morning he stopped in the superintendent's office of the Kirke Iron Works, laid down his card, and inquired of the superintendent as to getting some contracts for iron construction, and after conversation relative to the iron trade, went away. He then stopped at a hotel on the outskirts of Plainfield and called for a drink of whiskey. He told the barkeeper that he wanted to go out to the Pollock place and the barkeeper directed him to Mr. Demler's, which was near by where he might find a conveyance. Mr. Demler lived next door to the house and grocery store of Williams, the victim of the tragedy. Coming to the grocery store Wood inquired for Mr. Demler, but was told that he was away. He then asked Williams if he would take him to the Pollock place and he hired Williams to do so. Before starting, and while Wood was near to and facing him, Williams took some money from his vest pocket and put it in a bag and then put the bag in his trousers' pocket. Williams drove and Woods was on the left hand side of the sleigh. A number of persons passed the two men driving on towards Mrs. Pollock's, Wood's grandmother.

At a point about a mile from Mrs. Pollock's the road is hedged in with trees, and although there is a house about 1,000 feet away, it is not visible from the road, nor the road from it. From this point, at about 11 o'clock, a farmer who was working in the woodshed of the house referred to, heard the report of a pistol. Shortly afterward, several men went down the road and saw the horse and sleigh standing still in the middle of the road, with the reins under the runner of the sleigh. Williams was sitting upright in the sleigh, alone and dead. He had been shot in the back with a 32 caliber bullet. The sleigh robes were wrapped around him, the clothes were not disarranged, his hat was on, and there were no signs of a struggle. Tracks were seen in the snow at the side of the sleigh as if a man had jumped out of the sleigh backward and had walked or run, using long steps in the snow by the side of the beaten track until he had passed the horse, and then again into the beaten track, then in the same direction along the road for a distance of about a mile. At times these tracks were close together, at other times a considerable distance apart, until they lead to a farmhouse. It is supposed that the person who made these tracks was Wood, and that he heard the sleigh bells of a neighbor coming toward him on the road and that he went into this place to hide. The tracks thence led in a straight line for two miles across country, over barb wire fences and through woods and different places, the snow being very deep, to a road which led to Millington Station. Near Millington Station, at about 12:30 p. m., a man was seen by three witnesses who at the trial identified him as Wood.

THE WIFE'S TESTIMONY.

That same afternoon, Thursday, February 2, about 3:30 o'clock, Wood appeared at his sister-in-law's house in West Twenty-seventh street. Relative to this his wife testified:

"When he came in he closed the door behind him and stood up against it; I looked at him and asked him if he got back, and he said 'Yes.' I saw he had a cap on, and I said, 'Where did you get the cap? Where is your hat?' and he said, 'I lost my hat and valise on the train,' and I said, 'Did Mack lose anything?' and he said, 'No, he had a little valise and he put that up in the rack, and I put mine in the aisle of the train and went to sleep, and when I woke up my hat and valise were gone, and this was all I could get.' I asked him if he got the money, and he said that they had went to Mack's father's, and that Mack's father told him that his money was all out in Summit,' and that they had started back. I said, 'Where is Mack now?' and he said 'I don't know where he is; I left him at Summit,' and he said, 'I was up in the mountains.' I said 'Did you see grandma?' and he said, 'Yes.' And I asked him how she was, and he said they were the same as usual. I said, 'Did you see Pop?' and he said, 'Yes!' . . . He told me he had to meet Mack at 9 o'clock that night when the train came in. My sister and my brother in-law were there. When my brother-in-law came in he said, 'Well, George, how did you make out?' and he said, 'I have not done with him yet.' Then we had supper. When we sat down to eat he only ate a little. . . . He just sat there as though he was thinking, and he looked so wild in his eyes; and he says, 'Well, I guess I will have to go now.' And I said, 'Why are you going so early if you are going to meet Mack at 9 o'clock?' and he said, 'I have a couple of other places to go to, and by that time it will be time to meet him.' I said, 'Will you come back tonight?' and he says, 'Yes, but if I don't happen to get back, don't wait up for me,' and the last thing he said going out of the door was, 'I will be back if I can get back.' And I said, 'All right, we will wait up for you.' And he did not come back all night." He did not return to his sister-in-law's until the next day, Friday, at about half-past 2 in the afternoon. Then he apparently had forgotten that he had been there the day before. His wife, in her testimony, continues: "When he came in I asked him if he had met Mack that night, and he looked at me and said, 'Met Mack? I wasn't to meet Mack.' And I said, 'Yes, you told me you were going to meet Mack at 9 o'clock.' 'Why,' he says, 'I have only just come over the ferry now.' I says, 'Why, you were here,' and he would not believe it, and I could not make him believe he had been there on Thursday. . . . He said he had been to Scarsdale, and to Mack's father's, and that they had started back from there, and I asked him if he had got the money, and he said 'No.' that Mack's father had the money out at Summit; he said that he had just come across the ferry from leaving Mack, and he told me that they went to some junction, he didn't know what junction. That they got off at this junction to wait for a through train, and while they were waiting they went in some restaurant or some place to get something to eat, and they had a glass of beer and something to eat, and he said that while they were drinking, why he didn't know no more from that time on, he didn't know where Mack went to and what happened to him. My sister and brother-in-law were in the house during this Friday afternoon and evening. . . .

"Two men came in and asked if my sister was Mrs. Bishop and Mabel said, 'Yes.' . . . And they said, 'Do you know of George H. Wood?' My husband was sitting there and he says, 'I am George H. Wood, what do you want?' And these men looked at him for a minute, and came in and closed the door, and they said, 'Have you not seen the papers?' And my husband said, 'Yes, I have seen them.' And they said, 'Don't you know detectives are looking for you?' And he said, 'No.' And they said, 'You are connected with that murder case out in Watchung, New Jersey,' and he looked at them so surprised, he did not know what to make of it, and said, 'What murder case?' and we got the paper and read it; and he did not seem to understand what they meant. And then they told him that there was a valise out in Plainfield at the hotel with his name on; and he could not understand how his valise had got in Plainfield. He said he had not been to Plainfield since last summer. Then they went on to ask him if he had ever known this man Williams, and all about it, and he told them just what he had told me.

"Then, while the reporters were asking questions, one of them says to me: 'Have you had your husband to a doctor since he came home?' I says 'No, sir.' . . . I took my husband to Dr. Ball on Twenty-eighth Street. He didn't want to go at that time. He said he would like to lie down and sleep. He said that his head ached him so he thought if he laid down and slept he thought he could think better. . . . I took him to the doctor's and he was told who he was, and I asked the doctor if he thought he had been hypnotized, and he said, 'No.'"

DR. BALL'S TESTIMONY.

Dr. Ball qualified as having had a certain amount of experience with the insane. He testified:

"This defendant came to my office accompanied by his wife and a gentleman who claimed to be a newspaper reporter; the request was made by the reporter that I examine this man Wood, without qualifying what kind of an examination it should be. I proceeded to examine him as to his physical condition. After a few questions it became apparent to me that

the man was suffering from mental defect. . . . My questions were not answered in a way which satisfied me that the man knew what he was talking about, and therefore my conclusion was that the examination was for his mentality, which I did in a rather cursory way, because it was a case concerning which, after the story had been recited to me, I did not wish to go on record, and I said very little about it at that time. As he came in I noticed he had a very shambling gait, and as he sat in the office his expression was one of complete mental apathy, looking into space. No questions of mine elicited what I would call a normal answer. His answers were rather of a negative type, all of them; his face was a complete blank, eye-balls sunken in the head and the pupils very much dilated; the whole physiognomy presented the appearance of a man who did not know what he was talking about. I had a chance to observe him for possibly twenty minutes, and maybe half an hour.. . . . Practically the same story that I have heard related here to-day was related in Wood's presence that afternoon, but Wood seemed perfectly oblivious, perfectly indifferent to what was going on. I could not arouse him to any concern or interest. . . . I had never seen this patient before that day and was not acquainted with any of his family. . . . As to his condition now as compared with what it was on February 3 last I should say physically he is a little thinner, but to me his mental appearance seems to be slightly brighter, he seems to have more expression to-day than he did that evening in my office, very much so.

CROSS-EXAMINATION OF DR. BALL.

Q.—"Now, supposing you had known at that time that a man had been riding with another man a few days before, and had shot and killed him, and then had made his way across the mountains to a station, and subsequently shaved his moustache from his face, and gone home, and that afternoon had been confronted by newspaper reporters with the charge that he was the person who was guilty of this murder, and immediately brought to your office, what would you say with respect to the effect it might have on his mentality, being of the character and nervous temperament he naturally was?"

A.—"I should rather have felt that the mental condition existed, and that he had committed the crime under that mental distress and disturbance."

Q.—"If you had known that he had been in a normal mental condition preceding, with no trouble in that direction, how would that have affected your judgment, or rather your conclusion, coupled with the knowledge of the occurrences I have narrated?"

A.—"Well, I should feel it was one of those very sudden forms of delusion or sudden insanity, possibly of the maniacal type."

Q.—"And it was impossible for you to tell at the time when that attack had gone, when the change had arrived?"

A.—"Quite impossible."

Q.—"Are these maniacal attacks characteristic of primary dementia?"

A.—"Not in the primary stage, hardly so, not ordinarily so."

Q.—"Then if that is so, your conclusion would be that at the time you examined him he was in a state of primary dementia, but unless you had some facts or circumstances warranting a conclusion otherwise you would not think that he had been previously in a maniacal state?"

A.—"I would not."

Q. (by the Judge)—"Is it possible or likely that any of these conditions you observed could have been feigned?"

A.—"I hardly think so, your Honor."

Q.—"What was the writing test?"

A.—"I asked him to write his name and address. When I handed him a pencil, in a blank sort of a way and with rather an inquiring glance he seemed to want to know what I wanted him to do, and when I asked him to write his name he made a few marks on the paper and handed me the pencil again. I shook my head and still insisted and handed him the pencil again, speaking loudly and distinctly, arousing him, so to speak, from the lethargy which was apparent; and he wrote his name in a very sprawling way; you could not know it; I would not be able to read it at all distinctly. I don't think it was in his natural hand, but that is only a conjecture of mine. I don't know how well he wrote before that, or whether he wrote at all."

Q.—"Did he give you the address?"

A.—"He wrote the address, Twenty-seventh Street, I think."

Q.—"Do you know whether it was correct or not?"

A.—"I do not."

Q.—"Is he suffering from primary dementia or was he only suffering at that time?"

A.—"I could not say. I have not seen the man except to look at him. I have not talked with the man since that day."

Q.—"Did he hesitate to do anything that you directed him to do on this examination?"

A.—"He did."

Q.—"In what respect any more than you have already stated?"

A.—"None, except as I have stated, so far as I remember at the present time—his hesitating answers, his hesitation in writing his address."

Q.—"Did he seem to be trying to aid you?"

A.—"Yes; he seemed not averse at all to aiding so far as he had the sense of perception to do so."

REPORTER'S TESTIMONY.

A reporter for the *New York World,* who was with Wood for some time Friday afternoon, testified that Wood did not look to be a man in the full possession of his senses. He said:

"He had a peculiar look in his eye; he was uncertain, vague and indefinite; and in questioning him his replies were indefinite. He could not draw on his mind sufficiently to answer properly, though he made the effort. Mr. Fuller, another reporter, and myself both appeared in the Twenty-seventh Street house together. We asked the questions alternately, as they suggested themselves to us. We asked Mr. Wood if he knew he was accused of murder; he looked at us in a surprised sort of way, and he said, 'What, me accused of murder? I don't know anything about it.' At that Mrs. Wood, who was present in the room with her three children, asked us what it was, and we pointed out to her a story in the first page of the *World* . . . and she read it to her husband, and he expressed a sort of surprise that the thing should concern him, and on questioning if he had been in that locality, he said, 'Why, I have not been in that locality for months.' Then we questioned him as to his doings from the Monday morning when he disappeared until his return, and he told the story as reported in the *World* on Saturday, Feb. 4, of having met an individual named Mack and going with him to the Pennsylvania ferry and there taking a train which he believed was for Scarsdale, Pa.; that he did not remember having reached Scarsdale; that he suffered seemingly a lapse of memory, but he rememberd getting off at a junction point. We stated a number of junction points along the Pennsylvania line, and he could not recall by name any of the junction points. We suggested several, Monmouth Junction, Princeton Junction, and such as we could recall at the time, but he could not concentrate his mind, and he said no, he did not believe it was any of those points. However, at that time he said he had not met Mack, or Mack's father, whom he was going to see to get $1,000. He remembered getting off at this junction and going to a restaurant and having something to eat. He then had a recurrence of his mind and said that he went to the depot and got on another line, and after that he suffered another lapse of memory, and if I recall correctly, in my story that appeared on Saturday morning, he said something about having arrived in Trenton, and then from the time he arrived in Trenton until he had a next recurrence of memory, I believe was in Elizabeth, if my memory does not fail me. But the facts as related in the *World* of Saturday were true."

Q.—"What were his looks, can you describe them?"

A.—"Well, his look is rather hard for a layman to explain. It was not the look, as I would say, of a sane person. I have had considerable experience in dealing with persons who were not of sound mind . . . and they generally have an odd expression in the eyes, and I can truthfully say that Mr. Wood had an odd expression in his eyes the night I saw him."

CROSS-EXAMINATION OF THE REPORTER.

Q.—"Aside from the look of which you have spoken, and the seeming loss of memory was there anything else which occurred to you at the time which indicated a want of understanding?"

A.—"No, sir, but I am not an expert on those points."

Q.—"He understood all of your questions?"

A.—"Yes."

Q.—"And he answered all of your questions?"

A.—"Yes, sir, as best he could."

Q.—"And you advised him who you were, that you were a reporter for the *World?*"

A.—"I told him, yes, sir."

Q.—"And he understood that?"

A.—"Yes, sir."

Q.—"And he realized that, he knew where he was, at home there with his wife and you?"

A.—"I don't know whether he realized that he was in his own home."

Q.—"He realized he was in New York City, did he not?"

A.—"Yes, sir, he was told he was in New York City."

Q.—"And he realized what you were there for, too?"

A.—"I believe that he did."

Q.—"You say his wife read the story in the *New York World?*"

A.—"That is, the small story the day after the murder of Mr. Williams."

Q.—"And did she read it aloud so that he heard it?"

A.—"She did."

Q.—"And did he make any comment on the story?"

A.—"No, he acted absolutely indifferent."

Q.—"Did he say nothing at all?"

A.—"I do not recall that he made any remark other than the statement I made a few minutes ago; he said that it was nonsense. He said, 'I was not within miles and miles of that place.'"

Q.—"He did not read that story himself?"

A.—"Not that I recall."

Q.—"Nothing was said at that time about Wolfe?"

A.—"No, sir, Wolfe's name did not enter into it."

Q.—"And he did say at that time that Mack had left New York with him, did he not?"

A.—"Yes, he left New York with Mack."

Q.—"Did he say to you that he not seen Mack's father in Searsdale, or that Mack's father had not the money which they wanted, but had invested it in Summit, N. J.?"

A.—"He said he remembered having got off at this junction point; he never remembered having reached Searsdale."

Q.—"Did he not say that Mack's father had invested his money in Summit, N. J.?"

A.—"That I do not recall."

DR. MAGUIRE'S TESTIMONY.

On Saturday, February 4, Wood, then a prisoner, was examined by Dr. Frank Maguire, physician to the New York City prison. After a thorough examination, Dr. Maguire testified:

"I believed him to be mentally competent and sound and sane at the time of that examination made on Feb. 4 of the present year at the city prison."

Q.—"Did he say anything about epileptic seizures?"

A.—"Denied it either in the greater or lesser form."

Q.—"What did you find about his memory and speech?"

A.—"He had no speech or memory disturbance; he had no paralysis or paresis."

Q.—"Any hesitation about answering questions?"

A.—"In a listless way."

Q.—"Any inability to comprehend or understand?"

A.—"No, sir. He understood everything properly and without much hesitation."

AUTHOR'S EXAMINATION.

I examined Wood at the county jail, Somerville, N. J., March 23, 1905.

In appearance he was rather pale, but well nourished and fairly robust. He presented no physical stigmata of degeneration, with the possible exception of prominent frontal teeth, and no marks of preceding syphilis. A slight tremor of the tongue was the only objective symptom. He said that he was 27 years of age, married, with three children, one of whom had had two convulsions at the age of 3; that his father, who was a nervous man and complaining, died of Bright's disease at the age of 54; that his mother, who was subject to nervous headaches, died of cancer at the age of 41; that he knew of no member of his ancestral family who had ever been alcoholic, insane or subject to fits. His only sister committed suicide on account of a love affair; his only brother died at 7 years of age from valvular disease of the heart.

Wood went to school till he was 12 years of age. At the age of 14 he began earning wages, and from that time he kept constantly earning a little more. He was married at 20, was domestic in his tastes and sober in his habits. With the exception of headaches, to be referred to later, he said his health was good.

At this examination Wood told substantially the same story regarding his period of alleged amnesia as has already been given. The most important variation was that, whereas the experts for the defense endeavored to make it appear that the man Wolfe was an evil genius of Wood's, that he had persecuted Wood for years, and that Wood feared and hated him, Wood stated to me that he and Wolfe were always friends, and that the only reason he had for doubting his friendship was that he had thought that, in view of the circumstances, Wolfe should come forward and substantiate Wood's story.

At the trial Wood testified that Wolfe was an illegitimate child of his father. He made no mention of Wolfe to his wife until after he had been some time in the Somerville jail. The first record of his speaking of Wolfe was to his counsel, when he was in the Tombs, in New York, five or six days after the murder. He further denied everything tending to show that he had delusions of persecution.

Of the two men, Mack and Wolfe, who figured so prominently in Wood's story, Mack was a real person who had employed Wood at Long Branch two years before, but had not heard from him since; as to Wolfe, there was no evidence at all that he ever existed outside the imagination, disordered or otherwise, of the defendant.

The only motive for the crime that the prosecution could advance was that Wood killed Williams for the money he saw the latter put in his pocket just before starting out on the sleigh ride. That no attempt was made to take the money from the dead man was explained by assuming that the murderer had been startled into immediate flight. There was considerable evidence that Wood was short of money at the time he left New York.

WAS WOOD IRRESPONSIBLE?

Three hypotheses suggest themselves, by any one of which Wood might be considered as irresponsible for his act. These hypotheses are: 1, Epilepsy; 2, amnesic automatism (non-epileptic); 3, insanity.

1. *Epilepsy.*—As to the theory that Wood was an epileptic, subject to seizures and periods of amnesic automatism, there was considerable evidence. At the time of my examination Wood's story in this respect was as follows:

At the age of 12, following an attack of scarlet fever, he first developed headaches. He said his head always ached, but that the pain became much worse at times.

In the past five years his headaches caused him to stop work 20 or 30 times. He said:

"My head aches continually, sometimes right down in the back, other times in front. Everything turns black when they get very bad. I can not stand up, get dizzy and have to go to bed. My eyes seem to pain, and at times I can not see anything. I am not sick at my stomach at these times, and very rarely faint. At different times I have lost consciousness for a few hours at a time. At some such times my wife has tried to arouse me and could not; she has been frightened and sent for a doctor. When the doctor came he said it was a headache. Sometimes these headaches come on suddenly and other times I know they are coming by an increase in the pain. I have fallen down in some of the headaches. Once I fell with a piece of hot iron across me, which my helper took off. I did not know I had got home till my wife fixed me up. This was four years ago. It has happened to me that after one of these attacks people have told me of things I have said that I remembered nothing about. Last September my partner Stevenson took me home from the Bronx in one of these attacks. He said I was talking with him at the time, but I remembered nothing about it. I was in that condition for one day. At other times I have told my men to do some work, and then not remembered having told them. The men thought I was lying about it. I never got in any trouble in any of these attacks, never fell to hurt myself, never had a fit, never found myself black and blue, have found my tongue sore in the morning sometimes, but never any blood on it. My wife has told me I had spells at night, but I don't know anything about it."

The testimony of Wood's wife in regard to epilepsy was substantially as follows: Wood at one time came home, saying he had fallen off a building. He was pale, vomited, and said he wanted to lie down. When he woke up, he did not know how he had reached home. Mrs. Wood testified to further spells which her husband had at night. He would get up out of bed, ask for a glass of water, be in a state of perspiration. He would ask his wife to speak to him, and then he would tell her that he knew what she was going to say. In the morning he would remember nothing about it. During these spells he had understood and intelligently answered questions. His wife did not consult a physician about these spells.

Wood's grandmother testified to his having had headaches for many years. On one occasion, when less than 13 years old, he fell out of a peach tree and lay on the ground for some time, "just like a corpse." In some of his headaches he "looked wild and talked strange."

Wood's aunt testified that on one occasion she found her nephew in a fainting spell. When he came out of it he asked where his wife was and he went upstairs to her.

Such was the evidence for epilepsy. No one had seen Wood fall, there was no evidence that he had ever had a convulsion. The only evidence that he had been in amnesic automatic states besides his own word (which was not substantiated by other witnesses) was that given by his wife, consisting in certain attacks he had at night. During these attacks he understood and answered questions. One of the experts for the defense elaborated an ingenious theory in support of epilepsy. It was to the effect that Wolfe had no existence, and only appeared to Wood just before a psychic epileptic seizure. Wolfe, therefore, was an aura, and after seeing him Wood was assumed to be in an epileptic state. Certainly the diagnosis of epilepsy on such meager symptoms, even were all motive to deceive absent, would be hardly possible. Such a diagnosis is made extremely improbable by the character of the crime itself and Wood's conduct after its commission.

Assaults and murders committed by epileptics during the periods of violence which may precede, follow or take the place of the fit are characterized by great ferocity and unreasoning violence, mutilation and multiplicity of blows. Soon after the deed is done the epileptic often falls into a deep sleep or coma. It is practically unknown for him to take elaborate precautions against detection. All the evidence in the present case went to show that the murderer acted with reason and intention. The deed was done with a single shot and without further violence; the body of the victim was undisturbed; the footprints in the snow left little doubt that the murderer had thought out means of escape. Wood had a mustache when he left Plainfield on the fatal morning. When arrested in New York the mustache had been shaved off, and some of his clothes were different from those he went away with. With all the facts in mind the hypothesis of epilepsy in explanation of this case seems absolutely untenable.

2. *Amnesic Automatism* (*Non-epileptic*).—It is extremely doubtful if non-epileptic amnesic automatism can ever be successful as a defense in criminal trials. It would throw the doors open to every crime being excusable by the criminal saying that he might have done it, but had forgotten all about it. That there are such amnesic states lasting considerable periods of time and uncomplicated by other motor or psychic phenomena of epilepsy, medico-psychologic annals abundantly prove. The patients perform complicated co-ordinated acts, retaining or changing their personality; they may associate with those who know them without arousing suspicion that their mental state is abnormal. After such periods, the memory of what transpired is blurred or indistinct. In certain cases some or all of the events can be brought to light by means of hypnosis. At the time of my examination an attempt was made to hypnotize Wood by Dr. H. B. Deady, late assistant director of the New York State Hospital's laboratory. Although Wood seemed to fall into a slight degree of hypnosis, he could not be made to disclose anything regarding the occurrences of the amnesic period.

In the cases of non-epileptic automatism or secondary consciousness which have come under my immediate observation, the patients have shown by their acts that they were controlled by the same fundamental morals in the secondary state as governed the primary or waking state. Some patients have been more irritable than usual, but none to the point of quarrelsomeness, and none have gotten into any trouble.

Experimental psychology tends to show that it is impossible, in artificially induced secondary states, to eradicate or even to overcome the inherited and acquired morals by which the individual has for years been guided in his normal waking consciousness. It is my firm conviction that no crime would be committed in a secondary state were not the individual a criminal at heart in his primary state, or a weak-minded person under the influence of strong and direct hypnotic suggestion. In the present case there was no question of such suggestion.

3. *Insanity.*—Mrs. Wood, in her testimony, said she had never thought her husband insane, and, leaving aside Wood's own fantastic story, there was very little evidence to support the theory of insanity. His wife said that, about one year before, after a young man and his wife who had been calling on them went away, Wood came to her and said that he had been married before, and the young woman who had just left was his wife.

The husband of the young woman in question, a Mr. Smith, testified that he had thought Wood peculiar. About a week after he (Smith) was married, he and his wife went to call on the Woods. Wood gave Mrs. Smith a very peculiar look as she came in. Later Wood told Smith that the sight of Mrs. Smith gave him a great shock. Wood said that he was married when 15 or 16 years of age, and he thought this Mrs. Smith was his wife. Later he began to question Mrs. Smith about her past. On another occasion he put his arm around Mrs. Smith, alleging that his first wife had a tender spot on her side, and he wanted to experiment to see whether Mrs. Smith were the person or not.

There was nothing in Wood's conduct while in prison or at the trial to suggest insanity. Neither delusions nor hallucinations were established. His memory, with the one notable exception, was excellent, his manner straightforward, his cerebration prompt. He seemed interested in his trial, but took no part in the conduct of it. He seemed affectionate and good natured.

But even with absence of definite proof, the most reasonable explanation of this remarkable case seems to be that Wood was insane. I have never been able to doubt that the story Wood told, clean cut and consistent as is was, was a fabrication and that he retained a full recollection of the period he said he had forgotten; I believe that he knew that he killed Williams and why. But I can not free myself from the impression that at the time that he fired the fatal bullet his motive was one that only an insane man would have acted on; that it was a product of some deep-seated delusion, which no one as yet has been able to discover.

The final disposal of the case was the most satisfactory one possible under all the circumstances. But by it is emphasized the necessity of the passage of a law by which criminals whose sanity is questionable can be placed for observation in hospitals for the insane before they are tried on the criminal charge. Such laws are successfully in force in Maine, New Hampshire, Vermont and Massachusetts.

In February, 1906, I visited Wood at the state prison, Trenton, N. J. He talked with me pleasantly. He said Wolfe committed the crime, and that he (Wood) was convicted by graft and by perjury. He said that now he remembered where he was at the time of the shooting, but that it was not in the neighborhood of Plainfield. His general appearance was the same as at the time of the trial. He laughed rather foolishly at times, and the tremor about face and tongue had markedly increased. In the shoe shop he had made the reputation of being a good workman, quiet, reserved and perhaps a little queer. His health had been good.

SUGGESTIONS IN REGARD TO DI-METHYL-AMIDO-AZO-BENZOL AS AN INDICATOR FOR FREE HYDROCHLORIC ACID IN GASTRIC ANALYSIS.

WARREN PHILO ELMER, M.D.
Instructor in Medicine, St. Louis University.
ST. LOUIS.

During the past few years several observers have noticed certain sources of error in determining the quantity of free hydrochloric acid in the gastric contents by the usual quantitative method, using di-methyl-amido-azo-benzol as an indicator.

1. The principal difficulty with this indicator is not its lack of delicacy, but the fact that certain organic acids found in the gastric contents will, when in proper concentration, give the same color change as does free hydrochloric acid. Especially has this been noted in regard to lactic acid, which is one of the most common organic acids found in the stomach under certain conditions. However, other acids give similar reactions, and the following table of organic acids which may be found in the stomach shows the concentrations in which the reaction appears:

Hydrochloric acid gives characteristic reaction diluted	1	to	13,000
Lactic acid gives characteristic reaction diluted	1	to	1,500
Phosphoric acid gives characteristic reaction diluted	1	to	1,200
Acetic acid gives characteristic reaction diluted	1	to	200
Butyric acid gives characteristic reaction diluted	1	to	100

From this table it appears that acetic, butyric and phosphoric acids could hardly be found in sufficient concentration in the gastric contents to interfere with the reaction. Lactic acid, on the contrary, is found rather often in such quantities, and herein lies the difficulty.

My plan to obviate this is as follows: First give a test meal which, as far as possible, is free from lactic acid. For this purpose the routine test breakfast which has been used for the last three years at the University Hospital at Ann Arbor, Mich., seems to be most satisfactory. This consists of one shredded wheat biscuit and 300 c.c. of water, given after a fast of eight to twelve hours and withdrawn from three-quarters to one-hour afterward. The acidity in a normal case is free hydrochloric acid 30, combined hydrochloric acid 2 to 10, organic acids 2 to 4, total acidity 40 to 45, in terms of decinormal sodium hydrate.

I have made tests of this meal outside the body as follows: Taking one shredded wheat biscuit with 300 c.c. of distilled water, I mixed them thoroughly and kept the mixture in constant motion at 37 C. for thirty, forty, fifty and sixty minutes, testing the filtrate at the above times for acids by the ordinary tests. Free hydrochloric acid was absent by all tests. Loosely combined hydrochloric acid was absent by all tests. Lactic acid was not in sufficient amount to give Uffelman's test, and the total acidity, consisting mainly of traces of lactic and acid phosphates, required from 1 to 2 c.c. of decinormal sodium hydrate to neutralize 100 c.c. of the fluid. This, then, is a practically lactic acid free meal, easy to give as a rule, not distasteful to the patient, requiring considerable mastication and of almost a constant weight.

The second difficulty, and in some cases the most important, is how to eliminate the error caused by an excess of lactic acid formed in the stomach. For this method I claim only approximate results, but its simplicity and the fact that it can be applied in conjunction with the ordinary methods, I hope, may recommend it to that class of stomach workers to whom time is an object. After many trials I found that the smallest amount of lactic acid that would respond to the di-methyl-amido-azo-benzol test was one part in fifteen hundred. The highest dilution which would give a characteristic Kelling test was one part in twenty-two thousand, or approximately fifteen times the dilution required to give the di-methyl-amido-azo-benzol test.

If, now, on diluting the stomach contents fifteen times with water and applying the Kelling test no reaction is obtained, there is no danger that the lactic acid present will interfere with the di-methyl-amido-azo-benzol test for free hydrochloric acid. If the Kelling reaction be positive, there must be at least .07 per cent. lactic acid, or enough to change the result of the di-methyl-amido-azo-benzol test for free hydrochloric acid by at least seven points. If this be the case I dilute again with an

equal volume of water and again apply the Kelling test, which, if positive, represents .14 per cent. or fourteen points.

Dilutions can also be made by making the second dilution one-half the volume of water in which a positive reaction represents at least ten and one-half points or one-fourth the volume of water, in which a positive reaction represents at least eight and three-fourths points, and so on. The amount of lactic acid thus obtained is subtracted from the free hydrochloric acid obtained and the result is approximately correct for free hydrochloric acid.

The question now presents itself, Will a quantity of lactic acid not sufficient to give the test with di-methyl-amido-azo-benzol unite with the hydrochloric acid in producing a vitiated result? To determine this point I added .05 per cent. of lactic acid to a solution of hydrochloric acid of known strength, titrated, using di-methyl-amido-azo-benzol as an indicator and obtained practically the same readings as before adding the lactic acid.

By this method of procedure the ordinary di-methyl-amido-azo-benzol indicator can be used at all times, and when lactic acid is present the results can be sufficiently rectified for clinical purposes.

612 North Taylor Avenue.

THE BLOOD PLATES.

THEIR ENUMERATION IN PHYSIOLOGY AND PATHOLOGY.

GEORGE T. KEMP, M.D., Ph.D.
Professor of Physiology, University of Illinois.

WITH THE COLLABORATION OF HENRIETTA CALHOUN, A.M., AND CHESTER E. HARRIS, A.M.
CHAMPAIGN, ILL.

(*Concluded from page 1027.*)

Bizzozero.—The reagent which commonly goes by the name of Bizzozero's fluid consists of a 0.75 per cent. aqueous solution of sodium chlorid, to which is added a small amount of methyl violet (about 1 part to 5,000).[12] This was not recommended by him for numeration work. Bizzozero preferred the Laker method, and the fluids he used for determining the ratio of the plates to the red corpuscles are described differently in different publications we have consulted. In referring to some of his old experiments made by himself in 1884, and in collaboration with Sanquirico in 1886, Bizzozero[14] states that the fluid used was made in accordance with the following formula:

1.0 per cent. osmic acid, aqueous solution	1 part.
0.7 per cent. sodium chlorid, aqueous solution	3 parts.

In referring to the same experiments in another article he[28] gives the percentage of the sodium chlorid solution as 0.1 per cent. This we take to be a misprint and regard the 0.7 per cent. as more probably correct. Pizzini[29] quotes from Bizzozero's text-book[30] that the fluid recommended is 1 per cent. osmic acid colored with methyl violet. For criticisms on these fluids see acid, osmic, above.

In addition to these osmic-acid fluids, Bizzozero also recommends a 14 per cent. solution of magnesium sulphate in water. We have tried this and find that, while it preserves the plates, the red corpuscles are distorted and sometimes buds are shed from them.

28. Bizzozero: Virchow's "Festschrift," 1891, p. 472.
29. Pizzini: Riforma medica, 1894, vol. ii, p. 376.
30. Bizzozero: Microscopic Clin., Third Edition. Year, page and full title not given.

Brodie and Russell.—Brodie and Russell[26] have usually employed a mixture of equal parts of glycerin saturated with dahlia and a 2 per cent. aqueous solution of sodium chlorid. This gradually decolorizes the red corpuscles, but the ratio can be determined before this occurs. This liquid is used without a counting chamber. We have tried this method and found that it gave good results.

Cadet.—Cadet[31] used iodized serum and also a fluid which he calls "liquid B," for which we quote his formula:

Distilled water	1000 gm.
Sodium sulphate (pure)	25 gm.
Sodium chlorid	5 gm.
Chloral hydrate (pure)	25 gm.
Chromate de soude[32]	0. gr. 20

All the ingredients must be pure. The chromate de soude must be weighed exactly. Filter each time before using. We have not tried this fluid. It was tried by van Emden, who says he prefers the Prus fluid without stating any definite objection to the fluid of Cadet.

Chromates.—With Müller's fluid and potassium bichromate solutions (6 per cent., 4 per cent. and 1 per cent.), we found that granules are formed after a time, and these, under a low power, may cause confusion in counting the blood plates.

Determann.—In most of his experiments. Determann used a 0.9 per cent. aqueous solution of sodium chlorid, colored with methyl violet. This is practically the same as Bizzozero's old fluid. It is not a fixative, and our experience with it leads us to condemn it for numeration purposes, though we can recommend it as a convenient fluid for examining the plates. It retards their breaking down, but does not prevent it. Determann's method has been fully discussed in this paper.[33] Determann also used a solution containing 1 per cent. sodium chlorid and 5 per cent. potassium bichromate. We have not tried this particular combination. Our experience with chrome-salts is given above under Chromates.

Fusari.—Fusari[23] used the following fluid: Equal parts of 1 per cent. osmic acid and 0.75 per cent. NaCl solution, colored with enough methyl violet to give the mixture a slight violet tint (leggera tinta violetta). Later he substituted an aqueous solution of Na_2SO_4 (specific gravity 1025) for the 0.75 per cent. NaCl solution in the above, and says that this makes a first-class preservative fluid (un ottimo liquido conservatore). Even with this he records cases where the plates were clumped in groups and a fresh preparation had to be taken. He counted 400 small squares of the Thoma-Zeiss instrument.

Hayem.—Hayem's[34] fluid A, which he recommends for counting the red corpuscles, and which is generally known as Hayem's fluid, is made in accordance with the following formula:

Mercury bichlorid	0.5 gm.
Sodium chlorid (pure)	1.0 gm.
Sodium sulphate (pure)	5.0 gm.
Distilled water.	200.0 gm.

It is not a good fluid for counting the blood plates, as it often produces a precipitate which is confusing. The fluid used by Hayem in most of his blood-plate numerations was the iodized serum of Max Schultze. But this is difficult to prepare and when not properly made it is unfit for use.

For Schultze's iodized serum Hayem substituted the

31. Thèse de Paris, 1880, pp. 36-38.
32. This line is copied literally from Cadet's recipe. We are in doubt as to whether he means chromate or bichromate. The "0. gr. 20" is also exactly quoted.
33. See II. under Methods.
34. Hayem: Arch. de Physiol., 1878, vol. v, p. 700; also Hayem, Du Sang, Paris, 1889, pp. 16, 28, 31 and 38.

amniotic liquid of cows and of sheep. This is carefully prepared in the winter and kept in Pasteur flasks until needed. He uses "eau oxygenée" (peroxid of hydrogen) as a preservative, and when blood plates or leucocytes are to be counted he adds a small amount of methyl violet 5 B. Hayem also used diabetic urine of specific gravity at least 1039. To this was added 6 per cent. of "eau oxygenée à 12 degrés."

The latest fluid which we have found Hayem[35] to recommend is one which, he says, is particularly adapted to human blood. It is made by preparing an iodin solution according to the following formula:

H_2O (distilled)	500 gm.
KI	25 gm.
I (metallic)	excess,

and replacing the mercury bichlorid in fluid A by 3.5 c.c. of this iodin solution.

Of the several fluids which Hayem has used we have tried only one, viz., his fluid A. We agree with him that it is not to be recommended for blood-plate numerations on account of the precipitates which it produces.

Those fluids which require elaborate methods for preparation and for preservation are obviously objectionable from a standpoint of convenience.

Helber.—Helber,[10] continuing some older work of Pratt, each in Professor Krehl's laboratory at Tübingen, used a 10 per cent. solution of sodium metaphosphate. Each of these observers found that the blood plates floated in this liquid, and so it can not be used with the Thoma-Zeiss counting chamber, as the plates and the lines are not in focus at the same time. This led to the construction of a special counting chamber by Helber.[36] Even with this special instrument, Helber does not say that the objection is entirely removed.[37] In using as high an objective as a twelfth, we feel that any fluid of such high specific gravity as to allow the blood plates to float would be extremely inconvenient and would probably introduce an error even when the counting chamber was dispensed with,[38] for the thickness of the layer of blood would be sufficient to keep the plates and the red corpuscles out of distinct focus at the same time. The solution does not keep well, it "must be made fresh every three days, and filtered each time before using."

Kemp and Calhoun.—See under "Aldehyd, formic."

Laker.—Laker[39] used Hayem's fluid A. See under Hayem.

Metaphosphates.—See Helber, Pratt, and Richardson.

Muir.—Muir[40] tried a number of different fluids and prefers an aqueous solution of sodium sulphate (specific gravity 1022), colored with methyl violet. We have tried this fluid, combined with formaldehyd, as recommended by Marcano for red corpuscle numerations, and find it effective in that form. We have not tried it in the form used by Muir.

Petrone.—Petrone[41] uses an osmic acid fluid containing salt. We do not find a definite formula, but in one place he gives the strength of the osmic acid as 1:300.

Pizzini.—Pizzini[20] used 1 per cent. osmic acid colored with methyl violet. He says that antipyretics, especially phenacetin or antipyrin, 25 centigrams to 100 c.c. of water, using heat to effect the solution, have the power to preserve blood plates almost like a solution of osmic acid.

Pratt.—Pratt[9] first used a 10 per cent. solution of sodium metaphosphate. He[9] later used a 5 per cent. solution of the same salt, and in his last communication,[42] presented at the same meeting with this work, he recommends a fluid made in accordance with a formula which we quote as follows:

Sodium metaphosphate (Merck)	2.0 gm.
Sodium chlorid	0.9 gm.
Distilled water	100.0 c.c.

We have never used sodium metaphosphate solutions for numeration experiments, but we have had considerable experience with them in repeating the work of Deetjen on the alleged ameboid movements of the blood plates.[43] We have found that all these solutions are very prone to ferment and to become mouldy. Helber states that they should be made fresh at least every three days, while Richardson says a week. Pratt's work has been painstaking and valuable, and his partiality for sodium metaphosphate leads us to believe it may have some special merit. We, therefore, propose to try this salt in combination with sodium chlorid and formaldehyd. This would have the double advantage of placing such a fluid in the more certain class of fixatives and of preventing fermentation and molding altogether.

Prus.—The original paper of Prus is in Polish, so we were not able to consult it. The only German abstract[44] which we have seen does not give the method in detail, but van Emden[4] recommends the use of Prus' fluid, so we take it for granted that he used the Prus method. This is really the pipette method, but using a fluid which preserves the plates and decolorizes the red corpuscles. With the red corpuscles thus eliminated from obstructing the view, one can use a dilution as low as 1:20 or even 1:10. According to van Emden, this brings an enormous number of plates into the field and reduces the error so greatly that the plates which are lost by sticking to the sides of the pipette may be ignored. By using a refrigerated pipette, van Emden can bring this error practically to *nil;* for at zero centigrade the plates will not adhere.

The recipe for Prus' fluid, as quoted from van Emden, is as follows:

Sol. acidi osmici (1 per cent.)	10 c.c.
Sol. acidi chromici (0.1 per cent.)	10 c.c.
Acidi acetici glacial	1 c.c.

We have not used this method, but we are impressed with the advantage of counting a large number of plates and thus reducing the error. The inconvenience of refrigerating the pipette will always be a drawback in clinical work, and without this we should always distrust the method, for the error varies with the temperature and the time it takes to measure the blood. Moreover, the pipette method not only holds back plates by adhesion, but tends to clump those which go free. In using Prus' fluid, van Emden mentions a precaution which is significant, and which tends to shake one's confidence in the method. He says that vigorous shaking in the melangeur produces a large number of small highly refracting bodies which might be mistaken for blood plates. He attributes what he calls a high count by Prus (500,000 per cu. mm.) to this cause.

Reyne.—Reyne[45] criticises the iodized serum of Max Schultze (used by Hayem) as a fluid for examining or

35. Hayem: "Leçons sur les maladies du sang," Paris, 1900, p. 103.
36. See J. under Methods.
37. Bei dieser Kammer fällt die lästige Durchmusterung der verschiedenen Höheninigen *fast* weg. (The italics are ours.)
38. See K. under Methods.
39. Laker: Sitzungsberichte der Kaiserl. Akad., Vienna, Part III, 1886, vol. xciii, p. 22, footnote 3.
40. Muir: Jour. of Anat. and Physiol., 1891, vol. xxv, p. 259.
41. Petrone: Il Morgagni, 1897, vol. III, pp. 308, 399 and 409.
42. Pratt: THE JOURNAL A. M. A., 1905, vol. xl, p. 2002.
43. Kemp and Stanley: Amer. Jour. of Physiol., 1901, vol. v, p. iv
44. Centralbl. f. k. Med., 1887, vol. viii, p. 469. The original paper appeared in Medycyna (Polish), 1886, Nos. 39 and 40.
45. Reyne: Thèse de Paris, 1881, pp. 18-19.

counting the plates. He says it is unreliable. "Some specimens are good and others are absolutely bad without one's knowing why or how to remedy it." Reyne uses diabetic urine containing from 6 to 7.5 per cent. glucose. This is boiled and filtered through animal charcoal. To this liquid thus decolorized is added 5 to 6 per cent. of its weight of "eau oxygenée à 12°" (peroxid of hydrogen?). This preserves the corpuscles and does not deform the plates. The only objection that he urges to it is that it forms small bubbles of gas on standing. See, also, Hayem above.

Richardson.—Richardson[46] used Laker's method with the following solution:

Sodium metaphosphate	1.5
Sodium chlorid	0.8
Distilled water (sterilized, cold)	100.0

Filter and add, if desired, a small amount of gentian violet or brilliant cresyl blue. The solution will not keep well for over a week and should not be used if mold develops in it.

Salvioli.—Salvioli[16] used a fluid made according to the following formula:

Osmic acid (1 per cent.)	1 part.
Sodium chlorid (0.7 per cent.)	3 parts.
Aqueous solution of methyl violet, q. s.	

This is practically the same as Bizzozero's counting fluid. See Bizzozero and Acid, osmic, above.

Van Emden.—See Prus, above.

III. AUTHORS' METHOD IN DETAIL.

The fluid used in this method has been described under Aldehyd. The following apparatus and accessories should be ready for use before making the puncture to draw the blood:

Microscope with nose-piece, and at least one objective of low power, not lower than two-thirds; and one of high power, not lower than a one-sixth. A Thoma-Zeiss outfit for counting red corpuscles (two counting chambers would be preferable). Several thoroughly cleaned watch glasses (deep facet-form, about 25 mm. diameter, most convenient). One such watch glass full of the aldehyd fluid. One such watch glass containing three or four drops of this fluid. A glass rod about 5 mm. in diameter, about 15 cm. in length, and rounded at the ends. A clean soft towel. A clean handkerchief or rag, soft and unstarched.

In collecting blood for counting the blood plates, the great desideratum is that all parts of the blood drop shall come in contact with the aldehyd before touching any foreign object (surface of skin, glass, etc.). This is really a *sine qua non*, for otherwise some of the blood plates will adhere to the foreign body, and of those which go free some are sure to be found clumped.

If the finger is to be used for the puncture, the hands are washed with soap and water and dried thoroughly several minutes before the experiment. This is to allow the circulation in the finger to become normal. If the hands are clean this washing is unnecessary. A minute or two before the puncture is made the finger is dipped for, say half a minute, in a solution of carbolic acid, about 1 per cent., rinsed with clean tepid water and dried on a clean soft towel or handkerchief. This is also unnecessary, but it prevents soreness following the puncture, and when the fingers are pricked several times a day, for days or weeks continuously, it is a point well worth taking into consideration. Washing with absolute alcohol, followed by ether, is an unnecessary trouble. The finger must be thoroughly dry, however, otherwise the drop will spread. The best place to make the puncture is on the thumb side of the left index finger, a little distal to the root of the nail, and decidedly more towards the palmar than the volar surface. Make the puncture (most conveniently done with the ordinary spring-lance with a spear-shaped blade), and try to regulate the depth so that blood will just not flow without gentle pressure being applied to the finger. The method of procedure now differs according to the depth of the puncture. If the blood emerges the moment the lancet is withdrawn, it should be wiped away promptly with a clean rag, leaving no trace of blood on the skin. If the observer is working alone, on his own finger, a situation like this is inconvenient. He may do one of two things: either make a fresh puncture, not so deep, on another finger and proceed as will be described below for puncture of the proper depth; or he may fill a fresh watch glass about one-third full of the aldehyd fluid, and then, after wiping all blood from the finger, touch the point of puncture to the surface of this aldehyd, and withdraw the finger the instant a fresh drop of blood emerges. The blood and aldehyd are then mixed thoroughly for a few seconds with the glass rod, which must be scrupulously clean, and a large drop of the mixture transferred on the rod to the counting chamber.[47]

This transfer must be accomplished rapidly. A thin clean cover-glass is now laid on, and the chamber allowed to rest quietly for five minutes before counting. This method will give good results, but one can judge better the mixing of the blood and the aldehyd if the puncture is just of sufficient depth for the blood not to flow without gentle pressure. In this case, if working alone, the puncture having been made, proceed as follows:

Twist the handkerchief into a rope. Hold the left hand thumb uppermost, and place the handkerchief in the crotch between the thumb and index finger, with about 15 to 20 cm. lying across its palm, and the rest hanging over its back. Now hold the index finger straight and close the other fingers to grasp the handkerchief firmly in the palm. Wrap the handkerchief two or three times around the index finger, beginning at the base and stopping at the last joint; then pass the rest of the handkerchief across the palm and hold it in place with the free fingers. This should be so regulated as not to exert any marked pressure on the index finger, which is kept straight all the while. If any blood has appeared from the puncture, wipe it off thoroughly, with the free end of the handkerchief. Dip the rod in the watch glass full of the aldehyd fluid, and convey about three good-sized drops to the surface of the finger over the puncture. Now bend the last joint of the index finger, and press against the end of the thumb if necessary. This will cause a drop of blood to exude into the aldehyd. Mix the two *in situ* by passing the end of the rod gently across the top of the blended drop. Do not force the rod into the drop so as to crowd the rod against the blood, or the blood against the finger. Do all this rapidly, and then, on the rod, carry a drop of the blended fluids to the watch glass containing a few drops of aldehyd. Here mix again, without hesitating to dip the rod in liquid, for the plates are fixed by this time, and the watch glass is simply a convenient vessel for farther dilution. Now carry on the rod a large drop of the diluted blood to the counting chamber, and lay on the cover-glass. The same manipulations that apply for getting an even distribution of the blood in erythrocyte counts apply here. The height of the chamber and the flatness of the cover-glass have no bearing on the accuracy, for the object is not to count the absolute number of anything in a known volume, but simply to determine the ratio of the plates to the red corpuscles. After the cover-glass is in position, take a bird's-eye view of the field, first with the low, then with the high power. If the corpuscles are fairly well distributed, allow the chamber to rest quietly for five minutes before counting.

The beginner is apt to take too much blood and not to dilute it enough. The dilution should be such that the red corpuscles do not conceal the plates when both shall have settled to the bottom of the chamber. There should not be more than one or two plates to a small square on the ruled area. The plates settle more slowly than the red corpuscles; hence the five minutes' wait. A longer wait does no harm, for both blood plates and

46. Richardson: Journal of Med. Research, 1904, vol. xiii, pp. 99-102.

47. Salvioli employed a rod coated with paraffin, though for a somewhat different method. We find that for our purpose it is not necessary to use paraffin, but the rod must be clean and smooth, and must be wet with aldehyd before it touches the blood.

red corpuscles are fixed and preserved by the aldehyd. While the chamber is standing for the settling of the blood plates, we may proceed to numerate the red corpuscles in a different counting chamber, or, if the size of the corpuscles be normal, as in healthy blood, by the hematocrit. The aldehyd fluid we use for the plates makes an excellent counting fluid for the reds, so that no other need be prepared.

It is our custom to count both red corpuscles and plates in six frames of sixteen small squares each. This usually gives about 100 blood plates. In this matter we are guided by our judgment, just as when counting the red corpuscles. If a bird's-eye examination shows the plates and corpuscles to be evenly distributed, and four frames in different parts of the field all give the same ratio, we have, in a few instances, stopped with four frames, while if the distribution was not so regular we have sometimes counted the whole sixteen.

It is a serious mistake to count too few, especially when there is no ruled field under the corpuscles to give an idea of their distribution. The work of some authors is open to this criticism. Petrone,[48] has for instance, in one of his experiments, bases his ratio on as few blood plates as thirty-two. This, we feel, is too small a number to eliminate the error of chance-distribution. When, as in some diseases, the number of blood plates is abnormally low, a larger number of frames should be counted.

Our method of numerating the blood plates without using the Thoma-Zeiss chamber has been given.[49] Our experience in this work has been large. We have used it for the past five years in repeated observations on the number of blood plates in blood of twenty-three different healthy individuals; in experiments on the disappearance of the blood plates during coagulation, in which we employed the method of fractional defibrination,[50] and in an extensive work on the regeneration of blood after hemorrhage—which is yet unpublished.

We were also members of a party of six which went from the University of Illinois to Cripple Creek and Pike's Peak to study the effect of altitude on the blood. In this work we made daily counts of the blood plates for all six of the party for six weeks. A preliminary report of this research is all that has thus far been published.[51] As a result of this experience we can assert that we have a method which is practical, and which is accurate to such a degree that it will detect many changes in the blood of pathologic cases; changes which should be of value in diagnosis and in prognosis, as well as in etiology.

IV. THE NUMERATION OF THE BLOOD PLATES IN PHYSIOLOGY.

Numeration experiments on the blood of normal individuals have yielded widely different results. We believe this to be due, in the first place, to the different methods employed. This is the explanation which has almost invariably been given, and we do not wish to underestimate its importance, but we are now in the possession of data obtained from our own experiments which lead us to believe that there is another factor which, so far as we know, has been hitherto overlooked, viz., the season and place in which the experiments were made. Our researches have included work done in France, in Switzerland and in different parts of America. In company with Messrs. Stanley, Hayhurst and Draper, we formed a party which went from the University of Illinois to the Rocky Mountains to study the

OBSERVER.	Ratio one blood-plate to reds.	Thousand blood-plates per cu. mm.	For method see Section I under letter	Number of persons	Number of counts.
Afanassiew[52]	25 to 18	200 to 300	E	2	24
Bizzozero[53]	25 to 12	210 to 400	G and H	2 dogs	2
Brodie and Russell[26]	9.4 to 7	635	G and K	?	5
Cadet[*48]	.....	100 to 310	E	108	?
Determann[55]	30 to 18 mean[22]	167 to 278 mean 227†	G and H	25	?
Fusari[56]	?	180 to 250 mean 200	E[?] or G	?	?
Hayem[54]	20	200 to 300	E	108	?
Helber[10]	.....	192 to 264	E and J	24	?
Howlett[24]	.....	250 to 300	?	few	few
Kemp[57]	10.5	457	G and H	1	5
Kemp and Calhoun[58]	5.6	850	G and H	13	20
Kemp and Calhoun[58]	?	730 to 962 mean 847 ?	G and H	19	?
Kemp and Calhoun[58]	.....	349 to 461 mean 381	.....	10 dogs	15
Laker[6]	?	400 and over	G and H	guinea pigs	?
Muir[59]	.....	200 to 250‡	E	?	?
Oster[60]	?	250 to 300	?	?	?
Petrone[61]	19	?	.....	5 dogs	?
Pizzini[29]	15.5	300§	G and H	?	?
Pratt[62]	35 to 10¶	.....	.....	.....	.....
Pratt[63]	24 to 10	217 to 496	G and K	?	?
Prus[44]	.....	500	**	?	?
Richardson[46]	†††	700	G and K	rabbits	?
Salvioli[64]	55 to 20	175	G and K	3 rabbits	3
Salvioli[64]	30	213	G and K	1 guinea pig	1
Salvioli[64]	36 to 40	207	G and K	2 dogs	2
Van Emden[65]	.....	245	F and H	?	?

* We regret that we have mislaid most of our notes on Cadet's counts. His paper is for the present inaccessible, so we quote him indirectly through Hayem, and van Emden. His tables include the work of Hayem and some of his students, as well as Cadet's own. Hayem says that any plate count which does not fall between 200,000 and 300,000 must be considered abnormal.

† Determann does not give actual figures; we have calculated them from the ratio for the sake of comparison.

‡ Muir gives these figures as a mean, and says that considerable latitude must be allowed on each side. He does not give the extremes. Muir also worked on dogs, but we have not his figures for these experiments in our notes, and Muir's paper is inaccessible to us at present.

|| Oster is quoted by Helber, without giving reference to the original work, so we are unable to consult it.

§ These figures are calculated by us from Pizzini's tables. They are means.

¶ Pratt gives these ratios, but indicates that there is a much wider divergence. For this reason we have not calculated the number of plates represented by them. The actual plate counts which Pratt gives in this paper range from 217,000 to 496,000.

** For Prus' method see under Prus, in section on Methods.

†† Calculated from Richardson's chart.

52. Afanassiew: Deutsch. Arch. f. klin. med., vol. xxxv, pp. 233-234.

53. Bizzozero: Zeitsch. f. wis. Mikroscopie, 1892, vol. ix, p. 232; also Arch. ital. de Biol., 1841, vol. xvi, pp. 389, 390.

54. Cadet: Thèse de Paris, 1881. Quoted from Hayem, "Du Sang," Paris, 1889, pp. 167, 374. Also van Emden: Fortsch. d. Med., 1898, vol. xvi, p. 250.

55. Determann: Deutsch. Arch. f. klin. med., 1898, vol. lxi, p. 371.

56. Fusari: Arch. per le scienze mediche, 1886, vol. x, p. 247.

57. Kemp: Proc. Amer. Physiol. Soc., Amer. Jour. of Physiol., 1902, vol. vi, p. xi.

58. Kemp and Calhoun: Arch. ital. de Biol., 1901, vol. xxxvi, p. 83.

59. Muir: Jour. of Anat. and Physiol., 1891, vol. xxv, p. 273.

60. Oster: Quoted from Helber, Deutsch. Arch. f. klin. Med., vol. lxxxi, p. 320.

61. Petrone: Il Morgagni, 1897, vol. xxxix, p. 309.

62. Pratt: Arch. f. exp. Path. u. Pharm., 1903, vol. xlix, p. 304.

63. Pratt: Jour. Med. Research, 1903, vol. x, p. 124.

64. Salvioli: Virch. Arch., 1891, vol. cxxv, pp. 378, 393, 394.

65. van Emden: Fortsch. d. med., 1898, vol. xvi, p. 250.

48. Petrone: Il Morgagni, 1897, vol. xxxix, p. 389.

49. See K and H under Methods.

50. Kemp and Calhoun: "La numération des plaques du sang et la relation des plaquettes et des leucocytes avec la coagulation." Arch. ital. de Biol., 1901, vol. xxxvi, p. 82.

51. Kemp, Stanley, Hayhurst, Harris, Calhoun and Draper. Report of an Expedition, etc., Am. Jour. of Physiology, February, 1904, vol. x, p. xxxii. In the presentation of our paper at the Portland session, I gave a considerable account of this altitude work, and still more was brought out in the discussion. It was expected that I should incorporate a full report in the present publication, and it was my intention to do so. I regret, however, that pressure of other work has prevented me from bringing the literature up to date, and from preparing the manuscript. This must, therefore, be reserved for a future publication.—Kemp.

effect of altitude on the blood. We found that high altitudes have a profound effect on the blood plates; their number is enormously increased, even more than that of the red corpuscles. The full report of that expedition has not been published,[51] but all notes taken at this time have been worked up, and we may anticipate our report by saying that we believe there are other climatologic conditions beside altitude which affect the blood plates and their relation to the red corpuscles. This will be discussed further on in the present communication, but it is well to bear it in mind in comparing the discrepant results which have been obtained by observers in the past.

For convenience of comparison we have compiled the preceding table. The date of the observation can be told by referring to the literature in the footnote. The actual number of blood plates may be obtained by multiplying the number in column 2 by 1,000. The method employed is given in the third column. The fluids used may be found in connection with the names of the observers arranged in alphabetical order under Fluids. Each method and each fluid is criticised in accordance with our experience, so we will not comment further on the relative value of the results. A word of caution is necessary in comparing the results in Column 2. Some of the observers have given the maximum and minimum counts which they have ever obtained. Others have given the limits within which they usually find the blood plates to vary. The means in either case are safe to follow; where no mean is given, it indicates that the observer has likely not stated his actual highest and lowest counts.

On comparing the results in Column 2, it becomes apparent that the results of Kemp and of Kemp and Calhoun are more widely divergent than those of any other observer. These facts were, of course, known to us before the figures were tabulated. Without an adequate explanation they would prove that our method could not be relied on. As a matter of fact, however, in examining our records to find an explanation, if possible, we have come on a new and valuable generalization. In our observations (12 in the table) it will be noticed that the plate count for dogs is lower than that for man. On general principles this should not be true, and it occurred to us later that possibly the season might have something to do with it. The plate counts which we had recorded on human blood were practically all made during the winter. The work on the dogs was done in May, June and July in connection with some experiments in fractional defibrination. On looking over our records for human blood we find this fact: that the ratios we have determined in winter have almost invariably been higher than those we found in summer. Moreover, there is less variation from day to day in winter than in summer. This is strikingly shown by some observations which we made in Champaign and Urbana, Ill., before going to Cripple Creek and Pike's Peak to study the effect of altitude. The ratio of plates to reds for the six in the party is given in the following table:

RATIO OF PLATES TO REDS.

Date.	Kemp.	Stanley.	Hayhurst.	Harris.	Calhoun.	Draper.
July 7....	1 : 44	1 : 19	1 : 20	1 : 23	1 : 18	1 : 22
July 8....	1 : 40	1 : 18	1 : 19	1 : 20	1 : 18	1 : 19
July 9....	1 : 36	1 : 21	1 : 20	1 : 20	1 : 20	1 : 20

NOTE.—The variations in Kemp's record are excessive. Nothing comparable to them had been observed in his blood during the winter.

Exactly the same thing holds good at high altitudes, only there we have an increase in the red corpuscles, by the side of a still greater increase in the plates. At high altitudes the variation from day to day in the blood plates of a given individual was remarkably small. In some observations made by one of us (Calhoun) at Escanaba, Mich., during a long-continued spell of dry, very cold weather, it was found that the blood plates behaved much as they did at a high altitude—that is, they not only increased in number, but increased in size. The counts given by Kemp (10 in the table) were made in Paris during the summer. The previous winter counts on his blood were part of the observations of Kemp and Calhoun (12 in table), when the ratio and the plate counts in his blood ran nearly twice as high. A given altitude in the Alps, surrounded by snow, produced a different effect from a corresponding altitude in the Rocky Mountains at the same time of the year. There is great need for careful researches in this field, and they should be long continued and not fragmentary. We propose to continue them ourselves as opportunity affords.

Before passing from this subject we should like to say a word concerning the results which we have quoted from our experiments before going to the mountains. The ratios 1:44 and 1:40 are the highest we have ever obtained for normal blood, and they stand almost alone. The man (Kemp) on whom the count was made was apparently in perfect health, and there was absolutely nothing subjective to indicate such a condition except the oppressively hot and sultry weather. The count is undoubtedly correct; it was verified by three of the party working on blood from punctures in three different places. In all there were five separate counts made on that blood and they all agreed. It is interesting to note that both red corpuscles and hemoglobin were far from normal also, the red corpuscles were 4,400,000, the whites 4,500, the specific gravity 1061.5, and the hemoglobin 56 on the Fleischl scale.

One important fact is set forth by this, viz., that a single abnormal blood plate count should not be taken as indicating a serious pathologic condition. The count of the blood plates for that day was 100,000, and we will see in the section on pathology, which is to follow, that this would have been taken as an indication of a condition more or less serious.

MEALS AND DIGESTION.

The effect of meals on the count of the blood plates has been studied by a number of observers, but their results are not on accord. The experiment most frequently quoted to show that the number of blood plates is influenced by digestion is that of Hayem,[66] who made observations on two adults and one infant. For the adults he found the number of blood plates to be as follows:

First adult—
Morning, fasting.....216,500
One hour after first breakfast (café au lait)*.....216,500
One and one-half hours after this breakfast.....350,000
One and one-fourth hours after second breakfast†.....185,000
Three and one-fourth hours after second breakfast.....198,000
Four and one-half hours after second breakfast.....231,000
Second adult—
Morning, fasting.....186,000
One and three-fourths hours after first breakfast (as above).218,000

*This probably consisted of two large cups of hot milk with coffee and one or two French rolls with butter and honey or jam.

†This corresponds to our (hot) lunch, usually taken about 11 o'clock.

With the exception of the isolated count of 350,000 we believe all the other figures to be within the limits of error, and the second case shows no such rise to prove that the first was due to digestion. Hayem is properly conservative in discussing these results,[67] so that he is really misquoted when he is

66. Hayem: Arch. de Physiol., 1878, vol. v, p. 723.

67. Ce n'est qu'un aperçu très-imparfait de l'influence des repas. . . . Il sera necessaire de faire un très-grand nombre d'observations . . . car les hématoblastes ne sont jamais répartis d'une façon très-égale dans la préparation.

placed with those who think that digestion influences the number of plates in the blood. We have before us notes from the records of several observers who have investigated this question, but except in prolonged hunger or after a "gorge" no results have been obtained which are not within the limits of error, so we shall not take the space to quote them.

Our own observations have been confined to the effect of the noonday meal. For some of the subjects this was lunch (corresponding to Hayem's "second breakfast"); for others it was dinner. The afternoon counts tend to be a trifle lower than those of the morning, but they were within the limits of error, so we agree with those who say that meal time, as such, has no effect on the number of plates in the blood. On Pike's Peak (altitude 14,200 feet) we noticed enormous differences between morning and afternoon counts, but we do not believe that mealtime had anything to do with this, for we all ate a hearty breakfast and no counts were made fasting.

V. THE NUMERATION OF BLOOD PLATES IN PATHOLOGY.

We are strongly of the opinion that the blood plates, in pathology, offer a field for investigation which is unusually attractive in its promise of good results. This field is like a rich country which has been undeveloped owing to the lack of railroads. The methods which have been employed heretofore in numerating the blood plates have been either inaccurate or laborious or both. We believe that our method removes each of these objections to a large extent, and we trust it will be of service in opening up the new territory.

The literature on the numeration of blood plates in pathology is becoming voluminous. It contains records of some work which is of great value, and of some which is almost if not quite worthless, owing to faulty methods. On the other hand, some of the observers who have employed faulty methods have accompanied their records with clinical histories which are very complete, and their findings for the blood plates are, on the whole, interesting and suggestive in spite of errors of experimentation. We first attempted to classify this work under the heads of the different diseases, but gave it up, as it would require such a discussion of individual cases as to be far beyond the scope of a general paper on the subject. We next attempted to classify the work under the heads of diseases in which the plates are increased and those in which they are decreased in number. We abandoned this, also, because it would do more harm than good simply to quote A, B and C as finding that the plates were increased in erysipelas, for instance, while D, E and F found them to be decreased. This has been done in existing literature, and on consulting the original papers we find that A employed a method which could not be trusted; that B makes his statement from observations on only one case, while C gives clinical histories showing complications which would certainly have to be allowed for. We have gone over all the literature which we have seen recorded, and, therefore, hope that we are reporting the subject up to date. After deliberate consideration we are convinced that the best way to present this information is by authors, arranged in alphabetical order. The reference in the footnote will give the year. We will state the method and the fluid employed, so that one may judge of the accuracy of the experiment by referring to the first section of this article for the method, and to the second section for the fluid. We will also state the number of cases reported by a given author, and the footnote will show by page where these records may be found. The list of diseases investigated by each author will be given in the same order as it appears in his paper. This will save undue multiplication of footnotes. The study and criticism of the case records, etc., in any given disease, must be left to those who are making that disease a special subject of investigation. There are a few general points which seem to be concurred in by practically all observers. These will be given at the close of the article in the summary.

Afanassiew.—Afanassiew[68] used the pipette method (E) with Afanassiew's fluid. He reported cases as follows:

Leucemia	1 case	Erysipelas, facial	1 case
Typhoid fever	5 cases	Pleurisy, suppurative	1 case
Gastric ulcer	2 cases	Icterus gravis	1 case
Anemia, chronic	1 case	Scurvy	1 case
Tuberculosis	1 case	Pneumonia, croupous	1 case
Cachexia, malarial	1 case		

Aoyoma.—Aoyoma[69] makes no count and gives no special method. His method is presumably A, Section 1. He states that the blood plates are increased in bubonic plague.

Cadet.—Cadet[70] used the pipette method (E), with fluids described under "Cadet." He reported pathologic cases, especially continued fevers.[70]

Denys.—Denys[71] did not make actual counts. The method used is not stated. He reported four cases of purpura hemorrhagica.

Determann.—Determann[72] used the ratio method (G and H), with Bizzozero's fluid. He reports 85 pathologic cases, and gives clinical and postmortem notes. His cases are:

Fibroma	1 case	Chlorosis	5 cases
Struma parenchymatosa	1 case	Anemia	1 case
Phthisis pulmonalis	8 cases	Hemorrhage (chronic)	2 cases
Bronchitis (acute)	4 cases	Sarcoma	1 case
Emphysema	1 case	Serositis tuberculosa	2 cases
Heart disease, (different forms)	2 cases	Peritonitis (perforation)	1 case
Syphilis	1 case	Tuberculosis (bones and joints)	4 cases
Lead poisoning (chronic)	1 case	Anus preternaturalis	3 cases
Gastric catarrh (chronic)	1 case	Empyema (rib-resection)	1 case
Nephritis (chronic), interstitial	2 cases	Pregnancy	8 cases
Polyarthritis deformans	1 case	Childbirth	2 cases
Sclerosis, (multiple)	1 case	Infancy (newborn)	3 cases
Cerebral tumor	1 case	Icterus neonatorum	1 case
Spinal disease (chronic)	2 cases	Pyemia	1 case
Hysteria	1 case	Typhoid fever	4 cases
Apoplexy	1 case	Erysipelas	1 case
		Rheumatism, (acute art.)	2 cases
		Pneumonia	7 cases

Fusari.—Fusari[73] used the pipette method (E), with fluids recorded under Fusari. He reports the following cases:

Pneumonia	3 cases	Sea-sickness	3 cases
Typhoid fever	3 cases	Scurvy	2 cases
Intermittent fever	4 cases	Ankylostomiasis	2 cases
Articular Rheumatism	1 case	Pseudoleucocythemia	2 cases
Pleurisy	2 cases	Leucocythemia	1 case
Nephritis	3 cases	Anemia	6 cases
Ascites	1 case	Chlorosis	5 cases
Tuberculosis	5 cases		

Grawitz.—Grawitz[74] reports that he has found the plates to be increased in chlorosis. He uses the expression "*soweit man nach Schätzungen urtheilen darf*," and when criticising the results of previous observers who had made actual numerations, he mentions no method of his own, so we surmise that he used method A as already described.

Halla.—Halla[75] uses the method of direct examination (A); but he is so conservative that we quote him to show that some results even when obtained by a faulty method may be of value. He says: "Familiar as I was with the blood plates, I could not help noticing them in my examination of the blood (for other purposes) in pathologic cases." He goes on to say that he does not attempt any exact count, but by rapid examination of the blood, as soon as possible after it is drawn, before the plates have greatly altered in shape, he could de-

68. Afanassiew: Deutsch. Arch. f. klin. Med., 1894, vol. xxxv, pp. 236-239.

69. Aoyoma: Mittheilungen aus d. med. Fac. d. Kaiserlich-Japanischer Univ., Tokio, 1895, vol. iii, pp. 219, 220.

70. We regret that our notes on his pathologic cases are mislaid and that his article is now inaccessible to us.

71. Denys: Centribl. f. allg. Path. und path. Anat., 1893, vol. iv, pp. 175, 177.

72. Determann: Deutsch. Arch. f. klin. med., 1898, vol. lxi, p. 371 et seq.

73. Fusari: Arch. per le scienze mediche, 1886, vol. x, p. 249.

74. Grawitz: "Klinische Pathologie des Blutes," 1896, pp. 45 and 80.

75. Halla: Zeitsch. f. Heilkunde, 1883, vol. iv, pp. 231, 232, 331 et seq.

rmine "without difficulty," whether the number of plates as above or below the normal. We would be inclined to ubt this, especially the "without difficulty," and to feel that alla's observations were too finely drawn, but when he states, rther, that "only the grossest, most striking quantitative anges" were taken into account, we feel that such general- ations, based on a sufficiently large number of observations, e not to be discarded as entirely without value. The patho- gic cases which he reports are the following:

neumonia (croupous) . 14 cases	Meningitis (suppurative) ..... 1 case
eurisy (acute) ..... 1 case	Tonsilitis ..... 1 case
uberculosis, "very many"	Smallpox ..... 1 case
number not given)	Scarlet fever ..... 1 case
eritonitis (acute) ..... 2 cases	Malaria fever (tertian) ..... 1 case
neumatism (acute ar- ticular) number of cases not given	Typhoid fever ..... 15 cases
ysipelas (facial) ..... 2 cases	

Hayem.—Hayem used the pipette method (E), and several fferent fluids which are described under his name. His ublications on pathologic cases are scattered through a wide iterature, but he has gathered his results in his classic large onograph,[76] and his findings in the different diseases may be nsulted in the proper chapters. He has also published a ter work[85] in which he brings his treatment of the subject up date. Hayem may be said to have re-discovered the blood ates,[77] and his earlier work was the starting point for the odern study of those elements. His hematoblast theory has ot met with acceptance, but, apart from this, his pioneer re- arches on anemias,[78] on purpura hemorrhagica[79] and on a blood isis[80] in certain fevers[81] have yielded results which have been nfirmed by nearly every later observer, whatever has been e method employed. (See summary, at the end of this ticle).

Helber.—Helber[82] used the pipette method with a special unting chamber. These are described in methods E and J. he fluid he used is described under his name. He reports the llowing cases:

nemia (simplex) ..... 4 cases	Hysteria and neuras- thenia ..... 5 cases
nemia (schwer) ..... 5 cases	Sclerosis (multiple, com-
ilorosis, number of cases not given.	plicated) ..... 1 case
eudoleucemia ..... 1 case	Gangrene of lung ..... 1 case
urpura hemorrhagica .. 1 case	Spondylitis ..... 1 case
uberculosis, number of cases not given. Six cases described particularly.	Basedow's disease ..... 1 case
	Typhoid fever ..... 1 case
	Scarlet fever ..... 1 case
rcinoma ..... 3 cases	Erysipelas ..... 1 case
omach and intestinal diseases, (chronic), number of cases not given.	Sepsis, number of cases not given.

Howlett.—Howlett[83] used the pipette method (E), with owers' hemocytometer for counting the plates in normal ood. He reports one case of pernicious anemia, in which he ys the number of plates was sometimes normal and some- nes away below. He does not say he counted the blood in is case and from the context we judge that he used method B, or D. If D, he probably diluted with Hayem's solu- on A.

Laptschinsky.—Laptschinsky[84] did not count the plates. is experiments were mostly on ordinary wet preparations and refers to the "granular masses of Max Schultze" rather an to the isolated plates. This work was before Hayem's aper which brought the plates into prominence.

Muir.—Muir[85] used the pipette method (E). His fluid is scribed under his name. He has examined pathologic blood in "upwards of one hundred cases." The results of many of these examinations he has not published, but the more im- portant ones he has tabulated and often has added very full notes. His tabulated and annotated cases are as follows:

Hemorrhage ..... 9 cases	Leucocythemia ..... 3 cases
Anemia (pernicious) ... 12 cases	Lymphadenoma ..... 7 cases
Chlorosis ..... 14 cases	Cases with high tem-
Anemia (secondary) .... 11 cases	perature ..... 5 cases
Anemia (miscellaneous) . 5 cases	

Pizzini.—Pizzini[86] used the ratio method (G and H), with an osmic acid fluid as described under his name. The patho- logic cases examined by Pizzini were as follows:

Tuberculosis ..... 3 cases	Cancer (stomach) ..... 1 case
Rheumatism (articular acute) ..... 2 cases	Cirrhosis of liver (with ascites) ..... 1 case
Diabetes ..... 1 case	Mitral stenosis ..... 1 case
Pneumonia ..... 4 cases	Aortic insufficiency ..... 1 case
Pleurisy (with old effu- sion) ..... 1 case	Erysipelas (facial) ..... 1 case
Pleurisy (with ascites) .. 1 case	Anemia (simplex) ..... 2 cases
Leucemia ..... 1 case	Tetanus ..... 1 case
Epilepsy ..... 1 case	Pneumonia (with men- ingitis) ..... 1 case
Myelitis ..... 1 case	Malaria (tertian) ..... 2 cases
Pleurisy (dry) ..... 1 case	Malaria (quartan) ..... 2 cases

Pratt.—Pratt[87] used the ratio method (G and K), with a fluid described under his name. The pathologic cases which he reports are:

Purpura hemorrhagica ... 1 case	Chlorosis, number of cases not mentioned.
Leucemia ..... 8 cases	
Anemia (pernicious) .... 10 cases	Erythrocytosis, number of cases not mentioned.
Anemia (secondary), number of cases not mentioned.	*Severe* hemorrhage, number of cases not mentioned.
Leucemia myelogenous, number of cases not mentioned.	

Prus.—Prus[44] counted the plates by the pipette method (E and G), but he used a special fluid, described under his name, which made his method unique. He reports four cases on leucocythemia.

Preisich and Heim.—Preisich and Heim[88] report one case of pernicious anemia, in connection with their studies on the origin of the blood plates.

Riess.—Riess[89] does not count the plates, he simply states whether they are increased or decreased. We infer that he used method A. Riess' work is among the earliest; it was done before any definite method of counting the plates had been suggested. He reports on the following diseases, the number of cases is not given:

Anemia (pernicious).	Profuse hemorrhage (repeated).
Anemia (simplex).	Leucemia.
Chlorosis.	Pseudoleucemia.
Cachexias (such as cancer).	

Salvioli.—Salvioli[10] uses the ratio method (G and K). His work was on the blood after severe burns.

Schleip.—Schleip[90] used method D. He reports fifty-seven cases of trichinosis during the Homburg epidemic of 1903.

Türk.—Türk[91] used method A. The plates were never counted. The blood was taken undiluted and in thin layers (at a room temperature) and examined as quickly as possible. Türk himself points out that this method is very defective owing to the adhesive properties of the blood plates. He does not attempt to give numbers, but simply speaks of the plates as "reichlich vermehrt," "kaum vermehrt," etc. He also checked his observations by the examination of dry prepara- tions. See method D.

Van Emden.—Van Emden[92] used method F, with Prus' fluid. We feel that his results are trustworthy. His records are accompanied by interesting clinical notes. The cases which he reports are as follows:

Scarlet fever ..... 3 cases	Tuberculosis ..... 4 cases.
Typhoid fever ..... 3 cases	Tuberculosis (miliary) .. 2 cases
Malaria ..... 6 cases	Meningitis (cerebrospin- al) ..... 2 cases
Erysipelas ..... 2 cases	
Cardiac diseases* ..... 20 cases	Scurvy ..... 1 case
Liver cirrhosis ..... 2 cases	Purpura hemorrhagica ... 1 case
Pneumonia, number not given.	

*These cases involve so many interesting complications that we can not classify them here. The reader is referred to the original.

76. Hayem: Du Sang, Paris, 1889.

77. Hayem: Comp. rend. de l'Acad. des Sciences, 1877, vol. xxiv, pp. 1239-1242; Arch. de Physiol., 1878, pp. 692-734; Id., 879, pp. 201-261, and 577-613.

78. Hayem: Gazette méd. de Paris, 1880, pp. 119-120; 191-192; 5-216; Compt. rend. de l'Acad. des Sciences, 1880, vol. xc, pp. 25-228; Id., 1883, vol. xcii, pp. 82-92.

79. Hayem's first plate counts in purpura were in 1890. See Leçons sur les Maladies du Sang," pp. 527-528.

80. In his earlier works Hayem calls this a *crise hématique;* his later ones he calls it a *crise hématoblastique.*

81. Hayem: Compt. rend. de l'Acad. de Physiol., 1882, vol. xciv, p. 200-202. Also, Arch. de Physiol., 1883, vol. ii, pp. 247-256.

82. Helber: Deutsche Arch. f. klin. Med., 1904, vol. lxxxi, p. 20 et seq.

83. Howlett: Lancet, 1882, vol. i, pp. 223-224.

84. Laptschinsky: Centralbl. f. d. med. Wiss., 1874, p. 660.

85. Muir: Jour. of Anat. and Physiol., 1891, vol. xxv, pp. 259 seq., and 364 et seq.

86. Pizzini: Riforma medica, 1894, vol. ii, pp. 376 and 387 et seq.

87. Pratt: Johns Hopkins Hospital Bulletin, 1905, vol. xvi, p. 201.

88. Preisich and Heim: Virch. Arch., 1904, vol. clxxviii, p. 59.

89. Riess: Berlin. klin. Wochft., 1879, p. 696.

90. Schleip: Deutsches Arch. f. klin. Med., 1904, vol. lxxx, pp. 11-17.

91. Türk: Klinische Untersuchungen, etc., Vienna, 1898, pp. 13, 16, 22, 121, 173, 181, 217, 219, 250, 276, 294, 315, 344.

92. van Emden: Fortsch. d. med., 1898, vol. xvi, p. 282 et seq.

For many ther cases not mentioned in his German paper, Van Emden refers to his inaugural dissertation in Dutch, Leyden, 1896.

SUMMARY.

From a great mass of conflicting evidence, most of it obtained by methods of questionable accuracy, we may cull three important generalizations which are almost unanimously agreed on—whether the method of the observer was good, bad or indifferent. We, therefore, feel it safe to predict that they will become established facts. It is interesting, furthermore, to note that these were all pointed out by Hayem, who was the first to make approximately accurate numeration experiments on the blood plates.

The first of these generalizations relates especially to acute infectious fevers; the second, to different forms of anemia; the third, to purpura hemorrhagica. We will consider each in order.

Acute Infectious Fevers.—During the course of an acute infectious fever (especially typhoid) the number of blood plates is usually either subnormal or normal. If the fever breaks by crisis, the crisis is accompanied by a rapid and striking rise in the number of blood plates. This is the classical "crise hématique" or "crise hématoblastique" of Hayem. If this "crise hématique" fails to appear, it is the sign of some masked complication which is usually unfavorable. Most observers have found that this is true of all acute infectious diseases, but all are practically agreed on typhoid.[93] The study of the plates in pneumonia has been especially interesting. As a rule, observers have found a marked blood crisis, but they are not in accord as to whether the plates are increased or diminished during the continuance of the fever. On some other fevers there has been a wider divergence of opinion. The study of the leucocytes in fevers has attracted considerable attention. We believe that further investigations on the blood plates in fevers would lead to valuable results, besides being of use in diagnosis and prognosis for the cases under observation.

Anemias.—In the different anemias, there is a remarkable concurrence of opinion that the plates may or may not be diminished in secondary anemias—indeed, in most cases, they are reported to be increased; while in pernicious anemia they are always greatly diminished. An increase above the normal in the number of the blood plates excludes the diagnosis of pernicious anemia. If a case under treatment shows an increase in the number of the blood plates, the prognosis is encouraging; if, in spite of all that can be done, the plates continue to fall in number, the prognosis is almost certainly fatal. In this connection we can not do better than quote from the latest work of the veteran observer Hayem,[94] who speaks with especial emphasis on the study of blood plates in anemias. He says: "It is certainly wrong to neglect these elements. When their number becomes small it is always a more or less serious sign; when they become rare the retractability of the clot diminishes. . . . This double lesion rarity of the hematoblasts [blood plates] and loss of retractability of the clot) is a sign of progressive pernicious anemia, and is the most characteristic sign which we have of this protopathic form." If this double sign does not exist, the proper treatment will effect a cure and one of the first signs of improvement is a rise in the number of blood plates. If the case continues to improve, further interesting changes are noted in the relation of the plates to the red corpuscles; small red corpuscles appear in increasing numbers and there is every indication that young red corpuscles are developed from the plates.[95] Hayem's observations, so far as the numerical relations of the blood plates are concerned, have been confirmed by a number of observers, including van Emden and Pratt, whose methods of numeration are free from the objections which apply to the older method of Hayem.

Purpura Hemorrhagica.—In purpura hemorrhagica the number of blood plates is enormously diminished. Van Emden and Pratt each state that the lowest counts they have ever found have been in this disease. Hayem called attention to the slowness in clotting of the blood. Helber confirms this observation of Hayem. To distinguish the blood in purpura hemorrhagica from that of pernicious anemia, Hayem[96] says that, in the absence of appreciable changes in form in the red corpuscles, "the scarcity of hematoblasts [blood plates] and the absence of serum after the coagulation of the blood, are two signs which are constant and pathognomonic" of the disease. The few plates which are found are often of large size. The blood contains masses of small plates, but these are broken down. Fibrin threads in the clot are few, but coarse. Recovery is ushered in by a "crise hématoblastique."

93. Van Emden agrees with the rest in finding a "crise hematoblastique" in typhoid, but he says it is much less marked than in pneumonia, scarlet fever, measles, and erysipelas. In malarial fever (Sumpfieber) the "crise hématoblastique" resembles that of typhoid.

94. Hayem: Leçons sur les maladies du Sang, Paris, 1900, p. 328 et seq.

95. Hayem's discussion of this whole question is most interesting; the text is illustrated by a curve showing the changes in the different corpuscles and in the hemoglobin. It will well repay one to consult the original.

96. Hayem: Leçons sur les maladies du Sang, Paris, 1900, pp. 530 et seq., and 540.

APPENDICITIS; IDEAS CONCERNING ITS MANAGEMENT, BASED ON ONE THOUSAND OPERATIONS.*

VAN BUREN KNOTT, M.D.
SIOUX CITY, IOWA.

It is not my purpose to enter into an exhaustive dissertation on the subject of appendicitis. The field has been most thoroughly covered during the past few years, and so far as its etiology, pathology, symptomatology and diagnosis are concerned, the opinion of the profession may for practical purposes be said to be in accord.

This can not as yet be said, however, concerning the treatment of the disease, as honest differences of opinion still exist, many of them varying only in degree, but sufficiently marked to convey to numerous members of the profession the idea that the treatment of appendicitis is a subject still more or less *sub judice*.

Actuated by the belief that the various phases of the question—how shall we manage our appendicitis patients?—may be best answered by a study of the methods employed by various men, I venture to add my testimony to the large mass of evidence already in print.

During the years 1893 to 1905 inclusive I have operated on 1,024 cases of appendicitis. Of this number 640 were clean cases and 384 were pus cases. By clean cases I mean those in which the infection was still confined within the appendix; by pus cases those in which the infection had escaped from the appendix and established a septic process, localized or diffuse. Of the total

* Read at the annual meeting of the Western Surgical and Gynecological Association, Kansas City, Mo

mber 993 patients recovered and thirty-one died—a ortality rate of 3 per cent. Among the clean cases, ute or chronic, 640 in number, 639 recovered and one ed—a mortality rate of one-sixth of 1 per cent. Among e pus cases, 384 in number, 354 recovered and thirty ed—a mortality rate of 8 per cent.

It seems no more than fair to state, in passing, that ore than half of these operations have been made dur- g the past six years, and the mortality rate secured is ecause that fact has permitted the application to these tients of greatly improved methods of treatment, nong which may be mentioned posture and drainage.

Believing that appendicitis is a surgical disease, I ve always been an advocate of immediate operation, d have followed the rule of operating on every case as on as seen unless the patient was practically moribund, ith the exception of some few cases, presumably of mild pe, in which the patient presented well-marked contra- dications to any surgical procedure and it was thought advisable to operate under any circumstances. This, brief, is the plan still employed, and increas- g experience tends to strengthen my belief in it. very death from appendicitis must be charged to the count of procrastination or negligence, and the re- ponsibility for its occurrence falls on the family of the tient, his medical attendant, or the surgeon. The pa- ent or his family may to some extent evade this re- ponsibility by pleading ignorance. At this late day, d in the light of the vast array of evidence accessible all, what shall be the excuse of the physician who was lled early? It is absolutely impossible for any man, owever great his experience, to prognosticate accurately e course of any given case of appendicitis from its in- ption, but it is within his power to promise speedy and rtain recovery to every case of appendicitis operated sufficiently early.

It is not my intention to take up at length this line argument, although sufficient excuse for it is found ily in the obituary columns, and the necessity for the ppendicitis missionary has by no means ceased to exist.

CLASSIFICATION OF CASES.

For practical purposes we may divide our appendicitis ses into two classes—clean cases and pus cases—the rmer including all cases either acute or chronic in hich the infection is still confined to the appendix, and e latter including cases in which a septic process, ther circumscribed or diffuse, has been established with e appendix as its point of origin.

From the standpoint of results I have found no dif- rence between an acute clean appendicitis and those the so-called chronic type, as in 640 operations on ses of both varieties made at all stages of the disease here the infection was confined to the appendix, there as but one fatality, and that was charged to the fact at I had the night before operated on a patient suffer- g with a violent streptococcic infection of the face and eck, and although scrupulous pains were taken to pre- nt infection, the patient on whom I made a simple terval appendectomy died in forty-eight hours of acute iffuse septic peritonitis, and streptococci in large num- ers were found in the peritoneal fluid.

As to the pus cases, the results which are now being ecured in cases of diffuse septic peritonitis have render- d it much less formidable and have done much to bring ore nearly together the mortality of circumscribed and preading peritoneal infections which are the result of ppendicitis. I have had more deaths from localized ppendicular abscesses operated on during the past few years than from the series of cases of diffuse peritonitis. This of course may be partially explained by the much greater number of cases belonging to the first type which are encountered at operation and yet it is a striking illustration of recent surgical progress, for it is only six or seven years since practically all our patients with diffuse septic peritonitis died.

I am unable to estimate as yet the respective death rates for cases of circumscribed and widespread peritoneal infections, but am positive that the difference is very much less pronounced than formerly. Excluding those cases which are moribund and those in which definite contraindications to any operation exist, the treatment of acute appendicitis is preoperative and operative.

PREOPERATIVE TREATMENT.

As soon as the diagnosis of appendicitis is made, the head of the bed should be elevated at least twenty inches and the patient turned sharply on the right side. In the event of unavoidable delay in getting the patient into the hands of a man competent to make the operation, this posture will greatly assist in localizing and confining escaping infection to the region of the appendix. An ice bag should be applied to the right lower abdomen and all feeding immediately discontinued. An enema may be given if desired, but I am strongly opposed to the administration of a cathartic in any case of acute appendicitis prior to operation. I have seen many cases in which much harm has been done by the peristalsis thus set up, and as we can never be certain of the exact condition within the abdomen I do not consider it safe to "give a cathartic early" as is so frequently advised. What is early when we are considering appendicitis? I do not know unless it is the day before the disease began.

Then there is the question of morphin. Under no circumstances should a patient be given morphin at this stage. The price he may have to pay for his indulgence is too great and need not be longer dwelt on. If in any particular case operation is not to be considered, morphin might be administered, but never until the diagnosis has been established.

Whenever possible all patients should be removed at once to the hospital.

No operation should be made for appendicitis at the home of the patient when it is possible, without loss of too much time, to place him in a well-regulated hospital. As a rule it is safe to state that a patient who is not too ill for operation is not too ill to be moved. The elevated position of the head and trunk and the inclination of the body to the right should be maintained during the journey.

OPERATIVE TREATMENT.

The operation should be performed as soon as the diagnosis has been made and a competent man secured to do it. I do not recommend operations on these cases by inexperienced men. The mortality rate could not be more certainly increased in any other manner. The attempt to put a time limit on appendicitis and to decide to operate on this case because it is only "twenty-four hours old," and to postpone operation in that one because it "is the fourth day and a dangerous time to operate" has been overdone. I have seen several cases of appendicitis in which the first symptom noticed by the patient doubtless made its appearance at the time of perforation of the appendix, yet these cases were in much less promising condition for operation at the end of the first twelve hours than many other cases would be on the third, fourth or fifth day.

The only cases in which operation should be deferred

are those in which the patient is plainly dying from sepsis and those cases of diffuse septic peritonitis so far advanced that the shock of the anesthetic and even a brief operation will prove fatal. These patients, and fortunately they are few compared to the total number seen, should be treated after the plan advocated by Ochsner and described under preoperative treatment, following which, should improvement occur, they may be operated on several days later.

All cases of diffuse peritonitis, which is still spreading, should be operated on at once. The fact that the infection is not confined to the region of the appendix is not sufficient excuse for delay in these cases, as rapid removal of the offending organ with thorough cleansing of the soiled peritoneal area, followed by proper posture and free drainage, will permit a more rapid and a smoother convalescence than can be secured for those patients who have a mass of firm adhesions about the cecum, which limit necessarily the first attempt at operative relief to incision and drainage, followed by a more or less extended period of suppuration, attended by the ever present dangers of extension of the septic process and intestinal obstruction.

Cases of localized abscess should be operated on immediately. The practice of waiting for the adhesions to become more firmly established is condemned. While waiting for the adhesions to become stronger the pus may break through into the general peritoneal cavity, necrosis of the pus bathed loops of intestine is invited, and if these accidents do not occur and the adhesions do become very dense and firm, the prospect of making the operation a radical one, with removal of the appendix, is diminished and the likelihood of postoperative obstruction is increased. If the adhesions are sufficiently established to warrant the diagnosis of a localized abscess they are sufficiently established to permit that abscess to be as properly managed at the immediate operation as at one deferred for one day or a week.

Attention is again directed to the fact that early operation on a clean case removes at once the source of the disease and prevents the many distressing and often fatal complications and sequelæ, among which may be mentioned incomplete operations, protracted convalescence, hernia, sepsis, peritonitis, pylephlebitis, abscess of the liver and postoperative obstruction. These and many more are penalties still too frequently imposed on the patient by some one's procrastination, and the pity of it all is that they could and should have been avoided in nearly every instance.

OPERATION.

In clean cases, either acute or chronic, the incision is made through the sheath of the right rectus muscle. The incision provides free access to the appendix, may be easily extended at will with a minimum of trauma, and is much preferable to the so-called McBurney or muscle-splitting incision.

The meso-appendix is ligated with catgut and a circular ligature of silk is thrown about the base of the appendix flush with the cecum. A pair of hemostatic forceps is placed distal to this ligature and the appendix cut away between ligature and forceps. The stump is wiped perfectly dry and its mucosa thoroughly swabbed with 95 per cent. carbolic. The stump is then covered by drawing over it the base of the meso-appendix or a fold of the cecum and retaining them in position with catgut sutures. The stump is never inverted into the cecum, as it does not seem to me to be advisable to invite infection of a raw surface by deliberately placing it in the foulest repository within reach, despite the fact that the various methods of preliminary treatment of that stump are said to have removed its absorbing power. I have had no trouble with subsequent infection of the silk ligature and the persistence of a sinus after operation.

The wound in the abdominal wall is closed with a continuous suture of No. 2 ten-day chromicized catgut, including first the peritoneum and posterior sheath of the rectus, and then carried back through the anterior sheath of that muscle and tied. The skin is closed with horse hair.

INFECTED CASES.

From the standpoint of operative treatment we may consider three varieties of cases in which the infection has escaped from the appendix with or without perforation of that organ: 1, A more or less localized peritoneal infection in which the general peritoneal cavity is not protected by limiting adhesions; 2, An infection sharply localized and circumscribed, the general cavity of the peritoneum being protected by a wall of adhesions; 3, A diffuse widespread infection of the entire peritoneal cavity.

1. Abscesses Not Sharply Localized: The existence of the first variety may or may not be suspected prior to operation. It is frequently encountered in cases which we hope will prove clean. In such cases the incision should be extended well down toward the pubes, as the following steps of the operation, which should be rapidly performed, are much facilitated thereby.

The appendix is ligated and removed and the stump disinfected and buried as already described. The portion of the peritoneal cavity involved in the septic process is then rapidly, but very gently, mopped dry with gauze packs wrung out of hot sterile water, not forgetting the cul-de-sac, which in these cases will always be found to contain a large quantity of fluid varying in character from serum to sero-pus.

In females the cul-de-sac is then rapidly opened and a large split rubber drainage tube, one-half to one inch in diameter, introduced into the vagina. The abdominal wound is closed with interrupted silkworm gut sutures. The patient is placed in bed, the head of which has been elevated at least twenty-four inches from the floor. The drainage is removed in from six to ten days, depending on the course of the case. The age of the patient need not be considered in establishing this form of drainage. I have employed it in several cases of this kind occurring in girls under five years of age.

In males a large split rubber drainage tube, five-eighths to one inch in diameter and carrying a strip of iodoform gauze which must fit quite loosely, is introduced at the lower angle of the wound to the bottom of the rectovesical pouch. Alongside this a smaller tube one-fourth inch in diameter is placed likewise leading to the bottom of the cavity. These tubes are anchored to the skin with silkworm sutures. Through the plain tube the fluid which tends to accumulate at the bottom of the cavity is aspirated every two hours until the quantity secured at two or three consecutive dressings is insignificant when aspiration is discontinued. The employment of this second tube in the manner just described greatly lessens the demand on the capillary drain of tube and gauze.

The patient is placed in bed in the elevated posture above described. If at the operation it is ascertained that the infection is practically confined to the peritoneum of the right lower abdomen and pelvis the pa-

tient is turned on his right side and kept in this position for at least twenty-four hours. In the class of cases at present under discussion, namely, those of more or less limited infection of the peritoneal area surrounding the appendix and sometimes accompanied by adhesions which are too limited to protect the general peritoneal cavity from infection, no drainage of any sort other than that described above is ever employed. There is no reason for placing a drain in the space formerly occupied by a perforated appendix which has already communicated its infection to an area greater than such a drain can relieve. The source of the infection having been removed, the region of the cecum requires no particular and special drainage. The peritoneum from this point to the bottom of the pelvis has become involved, and, if by placing the patient in the elevated posture we secure the gravitation of fluids to the lower peritoneal pouch, that is the point to drain. Multiple drains mean multiple adhesions and greatly increase the tendency to postoperative obstruction. The introduction of strips of iodoform or plain sterile gauze for quarantine purposes may be necessary in a few cases of this type in which for some reason it has been impossible to dispose satisfactorily of the stump, or when the tissue in the immediate vicinity of the appendix makes one suspicious of approaching necrosis or gangrene. Gauze is a most useful agent when employed for the purpose of isolating septic areas, but most useless when called on to act as a drain, and should never be depended on alone for the latter purpose. Since abolishing the use of gauze in these cases, with the above exceptions, and draining them in the manner just described I have noticed that convalescence is much more rapid and smooth and the danger of troublesome complications has been materially lessened.

2. Abscesses Sharply Localized: In these cases where the septic process is sharply circumscribed and shut off from the general peritoneal cavity by a wall of limiting adhesions the safe evacuation of the products of infection and the successful guidance of the patient to complete and permanent recovery present many and varied problems, among the most important of which are:

a. Shall we incise over the most prominent portion of the abscess and establish drainage without opening the general peritoneal cavity, or, as recommended by Murphy, shall we always open into the cavity to the inner side of the pus collection, coffer-dam the field of operation and then establish drainage?

b. Shall we remove the appendix or not?

c. How may we best prevent contamination of the general peritoneum?

d. What form of drainage shall we employ?

e. How shall we prevent hernia?

f. Shall we in every instance make a second operation for the removal of the appendix where it was considered improper to attempt its removal at the first?

In reply to question *a* I must say that I think neither procedure should invariably be followed. The plan of attack must be adapted to the particular case in question.

Roughly speaking, we may divide these cases into two classes. First, those in which the abscess is situated external to the cecum. Second, those in which it is located on the inner side of the cecum. It has been my practice in all cases belonging to the first variety to incise directly over the most prominent portion of the tumor, using every precaution not to expose the peritoneal cavity. In nearly every case this may be accomplished and the pus safely evacuated without extravasation. Sudden cessation of the outward flow of pus during such an operation should be considered as indicating the possible rupture of the abscess at another point into the general peritoneal cavity. Should such an accident have occurred it is imperative that it be recognized and properly dealt with immediately. I have had four or five such cases. When the abscess is situated on the inner side of the cecum in practically every instance I open the peritoneal cavity to the left of the tumor first. The field of operation is then completely encircled with strips of plain sterile gauze. Each strip consists of four thicknesses of gauze three inches wide, with the free edges sewn fast. These strips extend from the bottom of the cavity well out on the anterior abdominal wall and when in place remind one of the old fashioned well with its brick or plank sides. Through this wall of gauze the pus may always be conducted safely to the surface. The best way to accomplish this is to make the opening into the abscess so small at first that the pus may be taken up by cut gauze sponges as rapidly as it escapes. When the pus cavity is practically empty the opening may be enlarged as necessary. The gauze strips are left in position to be removed with the drainage from the fifth to the tenth day, depending on circumstances. Coming to question *b*, concerning the removal of the appendix, I consider that no invariable rule should be established. As my experience has increased I have more and more frequently removed the appendix at the first operation. Many cases are encountered each year, however, in which it is considered inadvisable to attempt to remove the appendix at this time. This is a question which must be decided by individual operators in any given case entirely from their own experience.

The third question has been answered already in describing the evacuation of the abscess. As to the question of drainage, all drains employed in such abscess cavities should be of soft rubber, of good size and with walls sufficiently thick to prevent the collapse of the tube and obliteration of the drain. Glass tubes are not recommended because of their rigidity, which in some of my earlier cases was responsible for the appearance of fecal fistulæ. Gauze of any sort is much more frequently a cork than a drain and is never employed for this purpose. The split tube is introduced to the bottom of the cavity and brought out through the center of the well of gauze. It is removed at any time after the fifth day that the conditions of the particular case permit.

Questions *e* and *f* may be considered together. As the opening left for drainage in these cases is invariably a large one, it has been my observation that if the patient is permitted to go home after his wound is closed by granulation in the majority of instances he will develop a hernia. Acting on this observation, I tell all my patients who have been thus freely drained that they must have a second operation, that the operation could not be safely completed at the first sitting, and that they can not leave the hospital until the second operation is performed. I have never had a patient refuse to follow my wishes in this matter. At this operation, which consists in reopening the wound and freshening its edges, the appendix is removed if its removal was not accomplished at the first one. I would rather remove the appendix and repair the hernia on my cases than have them go to someone else for relief at some later day.

The removal of the appendix at some of these second operations is extremely difficult, but I consider it a wise procedure, as fully 20 per cent. of such cases would relapse. The organ is not destroyed by the suppurative process nearly so frequently as has been claimed.

3. Diffuse Septic Peritonitis: By this term is to be understood an inflammation involving, so far as we can tell, the entire peritoneum. I merely mention the steps of the procedure which is recommended.

a. Incision from umbilicus to pubis in median line.

b. Removal of appendix.

c. Thorough irrigation of entire peritoneal cavity with hot saline solution or hot sterile water.

d. Introduction of a large split rubber tube for drainage. In females from the cul-de-sac into vagina; in males from rectovesical pouch out through lower angle of abdominal wound and carrying a wick of iodoform gauze. In the latter a second smaller tube, without the gauze wick, is placed alongside the first, through which fluid collecting at bottom of pelvis may be aspirated.

e. In females the abdominal wound is completely closed with interrupted sutures of silkworm gut. In males the wound is closed with the same material down to the tubes.

f. Patient is placed in bed, the head of which has been elevated from twenty-four to thirty inches from the floor.

Operations made on patients in this condition should be rapidly performed, as they will not bear much manipulation or prolonged surgical interference.

This is the only condition in which an irrigating stream should be directed into the abdominal cavity. Its use in localized abscesses or limited peritoneal infections is most vigorously condemned.

SUMMARY.

The best results in appendicitis follow early operations.

In clean cases, acute or chronic, the operative mortality is practically nil.

The hour or day classification of appendicitis should be discarded and a pathologic classification substituted.

In spreading peritonitis immediate operation is urgently indicated.

In patients already moribund, or in those for whom the added shock of operation would determine a fatal result, operation should be delayed.

The elevated posture of the head and trunk and the resulting accumulation of septic fluids in the lowest peritoneal pouch, from which they are rapidly drained by large sized tubes, have robbed appendicitis of many of its terrors.

SOME OF THE USES OF IODIN IN SURGICAL PRACTICE.

JOHN EGERTON CANNADAY, M.D.
Surgeon In Charge, Sheltering Arms Hospital.
PAINT CREEK, W. VA.

At the present day I think I may truthfully state that the most decided tendency in the use of drugs is clearly a return to the simple life. The profession is at least partially freed from the bondage of an empirical authority, and one by one is dropping the complex and respectable myths and legends of medicine.

Inasmuch as it has been clearly shown by careful and painstaking laboratory workers that a 1-200 solution of iodin will kill the staphylococcus pyogenes in five minutes, that two minutes' exposure of the streptococcus (most virulent of pathogenic germs) to a 1-500 solution of iodin will destroy its life, that it requires thirty minutes' exposure to a 1-1,000 solution of bichlorid of mercury, the hitherto acknowledged chief of antiseptics, to accomplish the same results and that while iodin is much less toxic it is a far more powerful antiseptic than either carbolic acid or bichlorid of mercury, I have made use of this agent in much of my surgical work.

In cold abscesses in individuals of lowered resistance I have found injections of iodoform emulsion or iodin solution to be of great value. These patients are often unable to bear any more radical treatment than aspiration or injection. The iodoform may be used suspended in olive oil or glycerin or in an ethereal solution. The oil or glycerin should be sterilized by boiling and the iodoform by four days' submersion in 1-1.000 solution of bichlorid of mercury. The ethereal solution produces pain, and as it is more rapidly absorbed may produce symptoms of poisoning. Ten per cent. is usually the most desirable strength, and the amount left behind should usually vary from one dram to one ounce.

Rather recently I treated a patient by this method who had several tuberculous abscesses in the muscles of the back and chest in addition to a number of signs of lung involvement. I emptied these tubercular collections through small incisions under a careful aseptic technic, injected a 10 per cent. iodoform emulsion, closed the openings by suture and sealed them with a few fibers of cotton and flexible collodion. These sealed packages of emulsion were left alone for two or three weeks and the iodoformization was then repeated. This treatment in conjunction with appropriate dietetic and hygienic measures produced great improvement; the cough, fever and night sweats disappeared; there was a marked gain in weight and in three months the patient was apparently well.

In the treatment of sepsis from puerperal infection, also in the treatment of sapremia due to the putrefaction of retained secundines, I thoroughly curette and irrigate the uterus, then pack the uterine cavity with 10 per cent. iodoform gauze. This is removed on the third day, and if the symptoms have not subsided the uterus is daily irrigated with a 1-1,000 solution of iodin in sterile water. By this treatment we promote the absorption of a powerful yet comparatively harmless antiseptic. Occasionally I have applied the tincture of iodin to the lips and the interior of the uterine cervix for purposes of partial sterilization prior to curettage, and not infrequently I make a local application of the same drug to the entire uterine cavity after curettage in cases of chronic endometritis.

Iodin in solution in mild strength, 1-1,000, is of great value as an irrigation in the treatment of suppurative arthritis, large abscess cavity, empyema, etc. I have often used a 1 per cent. solution of iodin in the treatment of suppurating wounds and sinuses, resulting in the quick disappearance of pus and the formation of healthy granulation tissue. After operations about the genitalia and other parts where it is difficult to keep a dressing clean, I generally dispense with any of the ordinary dressings and use instead a protective ointment composed of sterile iodoform and petrolatum. By this means primary union is usually secured.

In the treatment of boils, abscesses and carbuncles I incise, evacuate the contents, wipe out carefully, curette away pyogenic and necrotic tissue and then apply thoroughly to the walls the plain official tincture of iodin. If the cavity is small, the tincture, instead of being applied with a swab, is poured into the cavity and brought in contact with its walls by gentle manipulation. This treatment is usually followed by the prompt disappearance of pus and rapid healing by granulation.

I have found the tincture of iodin to be a simple, readily obtainable and effective agent for the preparation of a small patch of skin preliminary to the insertion of the needle of the hypodermic or of the antitoxin syringe. For a year past I have been using a 0.5 of 1 per cent. iodin solution for purposes of hand disinfection in all cases in which rubber gloves were not worn. As a routine practice I wear gloves in operative work. In a certain class of cases gloves are undesirable. Again, a glove may be punctured or torn in a septic case, and the surgeon will feel the need of a reliable antiseptic, both for the protection of himself and his future patients. The use of this solution is simple and time-saving. The technic I practice is as follows: Thorough scrubbing with nail brush, green soap and running hot water. Cleanse the hands in a systematic manner. Take each part in a certain order every time, so as not to skip any part. Pay particular attention to the nail folds, subungal spaces and the skin between the fingers. Clean under short-clipped nails with a heavy metal nail file. Scrub again, wash off soap in running hot water, remove residue of soap by immersion in 70 per cent. alcohol. Immerse in iodin solution for five minutes, rinse in sterile water or let the solution dry on the hands. The light brown stain can be removed by washing in dilute ammonia water after the operation is over, or if left alone will soon disappear.

In the preparation of the site of incision I invariably observe the following routine: The evening prior to operation the area is covered by a green soap poultice, which is allowed to remain for several hours to loosen the dead and scaling epithelium; the part is shaved, going wide of any possible incision, then carefully cleansed by the use of a soft nail brush or gauze pad, liquid antiseptic soap and sterile water followed by alcohol. After this a compress wet with 1-5,000 bichlorid is applied, covered with oiled silk or other protective and secured by a bandage. This is undisturbed until the next day after the patient is under the anesthetic, when the compress is removed and the part is treated to a second cleansing with antiseptic soap, gauze pad and sterile water, followed by dilute alcohol; the solution of iodin is then applied and allowed to dry on the skin. Naturally in emergency cases much of the treatment preliminary to the use of the iodin solution will have to be omitted.

The solution of iodin used for the hands may be made up with dilute alcohol or prepared according to the following formula: Iodin 2.5 gm., potassium or sodium iodid 5.5 gm., water 250 c.c. This gives a 1-100 solution, which can readily be diluted to the desired strength. In a long series of cases in which the iodin solution has been used as described, the results from a clinical point of view have been excellent, and it is easy to conclude that as a chemical agent for at least the partial sterilization of the skin iodin is the most satisfactory substance we possess.

It must not be forgotten that this, the most harmless of antiseptics, and its compound iodoform are active agents, and as such should be used carefully. Under certain conditions they are very toxic. The pyogenic membrane lining an abscess cavity seems to be practically immune. Patients suffering from septic infection will tolerate more than the usual amounts administered. The feeble and aged are often susceptible. Iodoform irritation on the exterior of the body usually takes the shape of a severe dermatitis, not any worse, however, in character than that occasionally produced by the use of a bichlorid compress on a sensitive skin.

My conclusions are that iodin is the antiseptic *par excellence* for the skin of the hands and operation site. The solution of iodin is easily prepared and is stable. It does not coagulate albumin or form inert compounds with the tissues. It is of more value in many ways than either carbolic acid or bichlorid of mercury and not nearly so poisonous.

THE PRACTITIONER'S PART IN THE MOVEMENT AGAINST TUBERCULOSIS.*

J. C. WILSON, M.D.
PHILADELPHIA.

This remarkable exhibition and the popular interest it has aroused, which grows wonderfully as it is removed from one city to another, marks an epoch of transcendent importance in preventive medicine.

The great pests—the oriental plague, typhus, leprosy, smallpox, typhoid fever, tuberculosis—have been the scourges of mankind through successive historical epochs because of ignorance. Enlightened modes of living and knowledge of the ways by which they spread and by which they can be prevented have restricted the prevalence of these diseases in civilized communities and greatly robbed them of their terrors. Two of them only remain to-day as world pests—typhoid fever, which could not exist in a community such as Philadelphia but for the cupidity of the spoilsman, and tuberculosis, the very existence of which as a modern plague is threatened by the spreading influence of this exhibition and the great societies under whose auspices it is held.

THE MOVEMENT AGAINST TUBERCULOSIS.

In this building, on its walls and in the cases, are displayed, on a scale never before undertaken and with a precision and definiteness never before possible, facts in regard to tuberculosis which to a stricken people are glad tidings of great joy, and the facts are for the people. The exhibition is free and it is popular. Earnest and trained men, having knowledge, are here to make the subject plain and are striving faithfully and patiently to enlighten the dullest eager intellect as to the simple means of prevention and the reasonable hope of cure.

With reference to cure it is possible to be overenthusiastic. I fear that we are sometimes betrayed by our earnestness into that error. As physicians we must cultivate in this matter the judicial temperament. In individual cases we must shun the cruelty of holding out false hope. But as regards prevention there is no limit to the promise that can be fulfilled. It is only needed that the facts be known and used. Here we can not be too strenuous. Fired with a genuine enthusiasm, we can rouse the people to do the things needful, for the whole matter touches them and in sorrow they know it. Animated with a confident hope based on knowledge, we can hold out a promise of relief, the fulfillment of which is in their hands, for as the people live shall they suffer or be free. I am not of that sanguine temperament which permits me to look forward to the stamping out of consumption and the other tuberculous diseases in a decade or two or even in a generation; still I firmly believe—a belief that finds support in the history of the rise and decline of the other pests which I have named—that this great plague of our civilization can not continue to prevail as it has, but that in a future so near

* One of the addresses to physicians read at the Free Exhibition on Tuberculosis at Philadelphia.

that it will be seen by some who are here to-night this foul disease as it now prevails will also become chiefly of historical interest in our western civilization even as leprosy, the bubo plague and typhus are—a wolf baying at us and hanging on our flanks, but easily repelled and giving us no real trouble so long as we are on guard.

The three great signs of the times are (a) the diffusion of knowledge, (b) the rousing of the people, (c) organization.

a. The knowledge is simple enough. The bacillus found by Robert Koch in 1881 and its modes of existence and conveyance constitute the gist of it; but such is the inertia of ignorance that a quarter of a century passed before it became the possession of the people as a motive.

b. The rousing of the people from an apathy more than oriental is full of promise. Consumption is their affair. In ignorance they bore the evils of it and were helpless; in knowledge they will destroy it. In the way of action there were two great stumbling blocks—the doctrine of heredity, of which, in the old and paralyzing sense, science has made an end, and the conception of a pretuberculous state, which never recommended itself to sober, pathologic judgment and has now wholly ceased to darken counsel in regard to a comparatively simple infectious process. We now know beyond doubt that the symptoms once thought to indicate the pretuberculous stage are the clinical phenomena of tuberculous infection.

c. Organization has been of slow growth, but has gained momentum with the years. Its beginnings were in the private sanitarium. Then, in response to facts not to be gainsaid, came the public sanitarium. If the rich could be helped and cured, why not the poor? Then followed the association of the sanitarium with the laboratory. If patients got well, why not use them for statistical purposes; their sputa and blood for research; laboratory animals for elucidation and control; different localities and environment for comparison and the study of the part played by altitude, temperature, humidity, soil and all the factors which enter into the complex subject of climate for the part which they play in the prevention and cure of this fell pest? It followed that the influence of sociologic conditions, the home, the school, the workshop, the factory, food, habits, clothing, marriage, the rearing and care of families, should be carefully studied from the scientific standpoint as etiologic factors, and that the duty of the state and municipality to the people in the management of the disease in its early and curable stages and its developed and transmissible periods should be more and more carefully investigated. There have been devoted and unselfish men in our profession ready on all sides and in every country for this great work; and, imbued with the scientific spirit and altruism of medicine, these men have been eager to avail themselves of every opportunity to meet and discuss the subjects so near to their hearts. Hence local and national societies and international congresses. Need I say to you that the two societies under the auspices of which this exhibition is held, the National Association for the Study and Prevention of Tuberculosis and the Pennsylvania Society for the Prevention of Tuberculosis, occupy, in the scope and results of their work, the foremost place in the orderly progress of this great scheme of organization?

You have carefully studied this exhibition. You have noted its wide scope. All of us have been deeply impressed with its lessons not only to the people for whose enlightenment it was arranged, but also for the members of our profession. It is an object-lesson of the highest significance. Here you have seen in convincing array the results of the labors of the specialist, the pathologist, the bacteriologist, the phthisiologist, the sanitarian, both general and special, the health officer, the climatologist, the diagnostician, in the broad and in the narrow sense, and the tentmaker. It is true that the pharmacologist and the manufacturing druggist are not to any great extent in evidence. Like the ancients with their elements of fire, air, earth and water, we seem to have reduced our principles of treatment to fresh air, sunshine, abundant food and rest—four elements of irreproachable character. If we were to venture to add to this most respectable list, the additional measure would, it seems to me, by common consent, be household and personal cleanliness.

But I find in this great exhibition something lacking. The reason this something is not here is, I believe twofold: First, that it is little understood and, therefore, sadly overlooked, and, second, that such things as are known of it are difficult to depict and not well fitted for popular demonstration, scarcely adapted, in fact, in the present state of knowledge, for very positive assertions from the professional point of view. That "something" is the recognition and diagnosis of the very beginnings of tuberculosis in the human being.

THE PRACTITIONER'S PART.

This statement brings me back to the theme of my discourse—"The Practitioner's Part in the Movement Against Tuberculosis."

In the matter of the individual case, this is the one thing needful. The work of all the specialists whom I have named has to do with the cases that are known to be tuberculous, that almost any tyro can recognize. It is only the practitioner, the family physician, the *haus arzt,* who sees the cases in their very beginning—and often, alas! too often, not even he. For some twelve or fifteen years I have been the local examiner for patients applying for admission to the Adirondack Sanitarium, and in all that time I have only once had referred to me a truly incipient case of phthisis even under the very conservative requirements of the national association, promulgated last year. These are:

"Slight initial lesion in the form of infiltration limited to the apex or small part of one lobe.

"No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbances or rapid loss of weight).

"Slight or no elevation of temperature or acceleration of pulse at any time during twenty-four hours, especially after rest.

"Expectoration usually small in amount or absent.

"Tubercle bacilli may be present or absent."

If we consider three facts in regard to tuberculosis, especially tuberculosis of the lungs, we are overwhelmed with the importance of the practitioner's part in the great movement which is now occupying the attention of the world. These facts are: First, that tuberculosis at the beginning is a local infection; second, that at this stage it is not transmissible; third, that at this period it is curable.

1. Pulmonary Tuberculosis a Local Infection.—We are not here to discuss all forms and phases of a subject on which volumes have been written. The teachings of pathology are quite clear. A man may be tuberculous and not consumptive. In fact, every sufferer from consumption, in the ordinary sense, is at first and for an

indefinite period merely tuberculous and not yet consumptive. The local tuberculous lesion may elude physical examination and cast no shadow in the *x*-rays. As it develops and extends and new lesions develop, toxins are produced and the toxemia causes symptoms, rapid pulse, slight rise of temperature, accelerated respiration, loss of appetite and weight and nervous erethism. If the lesion is peripheral there is pleural irritation and unproductive cough; if it causes bronchial irritation there is hacking cough, with a slight morning expectoration. As it extends, cough becomes more marked and constant. Tubercle bacilli are scarcely present in the beginning, while the lesion remains closed. They are the outcome of a necrotic process; the lesion breaks and becomes open. In any case negative results are inconclusive. Repeated examinations must be made. Their absence even then does not justify a negative diagnosis. This is a stumbling block to many practitioners. As the lesion extends, physical signs appear; at first uncertain and elusive, later more distinct and significant. They are deficient expansion, slight relative dullness with heightened pitch, enfeebled respiratory murmur with the bronchial character misnamed harsh and increased vocal fremitus; but all so little marked as to require careful, even repeated systematic examination for their detection. A history of pleurisy, especially of pleural effusion, is very significant.

2. Tuberculosis of the Lungs Not Transmissible in the Early Stages.—So long as the lesion has not undergone necrosis, except in extremely rare cases of tuberculous bronchitis, tubercle bacilli are not present in the sputum, and the patient is not as yet a menace to the health of those surrounding him. If the disease is arrested at this point, the lesion becomes obsolescent and the patient recovers without being aware that he has been tuberculous and without having played the part of a distributing center for the disease.

3. Curability of Phthisis in the Stage of Incipiency. The frequency of obsolescent tuberculous lesions found on the postmortem table in the bodies of those who have died of other diseases, variously estimated at from 30 to 70 per cent., affords incontrovertible evidence of the curability of phthisis at this period. It is impressive to reflect that probably in all cases such cures are spontaneous, the lesions usually being too circumscribed to have given rise to recognizable physical signs. Dr. Norris concludes a recent paper on the "Diagnosis of Incipient Pulmonary Consumption" with the following statement: "High as the mortality from tuberculosis is, a greater number of individuals recover from the disease without knowing they ever had it than die of it."

How many others who traverse the thorny path of progressive tuberculosis to its ghastly end might be saved from such a fate by early diagnosis and treatment can never be known until the practitioner recognizes his part in the great anti-tuberculosis movement and, discarding with the misleading phrases, "slight bronchitis," "spot on the lung" and "pulmonary catarrh," all false sentiment and fear, does his duty with the courage, promptitude and skill of the American physician.

1509 Walnut Street.

Training of Children.—S. Merrill, Concord, N. H., says that it is important that children should be trained with a view to fitting them mentally as well as physically for the wear and tear of the life which they will have to encounter.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XVI.

CIRCULATORY STIMULANTS (CONTINUED.)

STRYCHNIN.

Strychnin, unlike digitalis, has no perceptible direct action on the heart, but produces its circulatory effects wholly by its influence on the centers, except in so far as the local action on the alimentary canal is concerned; this may be disregarded in the present consideration of strychnin, which is commonly injected hypodermically when its circulatory effects are desired.

Therapeutic doses of strychnin cause a rise of blood pressure by stimulation of the vasomotor center; the reflexes are increased, leading to improved tone of the voluntary muscles, and increased muscular activity always tends to increase the heart rate; this tendency, however, is counteracted by the stimulation of the vagus center by strychnin, the heart being slowed or showing little change in frequency. If the slowing is excessive there will be a fall of blood pressure despite the vasoconstriction, but this does not usually occur. If the tendency to increased frequency predominates over the vagus stimulation the rise of blood pressure is further augmented.

As strychnin operates readily to produce its effects it is a most valuable remedy when a quick rise of blood pressure is required. So rapidly are its effects elicited that convulsions may occur in a frog within two minutes of the injection of a toxic dose, and after massive doses rabbits may give a single convulsive leap into the air and be apparently lifeless from paralysis of the respiratory center when they strike the operating table.

Biberfeld has investigated its mode of action on the respiratory center. He depressed the respiration by morphin, after which strychnin was injected; this usually resulted in a greater increase in volume (sometimes even exceeding that before the administration of morphin) than in frequency.

It has been suggested that morphin depressed the reflex excitability, while strychnin tends to make all reflex efforts maximum.

Biberfeld agrees with previous investigators that strychnin does not cause increased irritability of the center for sensory impulses coming from the lungs, but considers the chemic stimulation of the blood the essential factor.[1]

The following preparations are official:

Strychnina.—U. S.—This is an alkaloid obtained from nux vomica; it is also obtainable from other plants of the *Loganiaceæ*.

Strychnin is only slightly soluble in water 1/6400, but is soluble in 110 parts of alcohol.

Strychninæ Sulphas.—U. S.—This is the salt of strychnin that is most extensively used in this country; it contains five molecules of water and approximately 78 per cent. of strychnin alkaloid. Strychnin sulphate is soluble in 31 parts of water and in 65 parts of alcohol.

1. Owing to the frequency with which poisoning by strychnin occurs, its toxicology deserves brief mention here.

As is well known, strychnin causes a characteristic type of convulsion rather closely resembling tetanus. The amount of the alkaloid that is necessary to produce this toxic effect is much greater, however, than is usually supposed; but, on the other hand, when once a large amount has actually entered the circulation, there is little hope of ultimate recovery. As death is due to paralysis of the respiratory center life may be prolonged, and a possible recovery brought about, by carrying on artificial respiration. This, however, should be begun before natural respiration ceases or even before it becomes very greatly depressed.

Strychnin requires several days (3 to 8) for its total elimination. Diuretics hasten elimination and may be of benefit when the amount of the poison that has been taken does not greatly exceed the minimum fatal dose.

Cushny advises strong tea (infusion) when the patient is seen with the strychnin in the stomach. This advice seems to be based on a misconception of the capacity of tea tannin for forming the insoluble tannate.

The fact that strychnin acts directly by paralyzing the respiratory center fully explains the possible danger that may result from the use of a stomach tube, and it will not be necessary to repeat this frequent caution.

On the continent of Europe the preference is usually accorded to the nitrate. This is official in our Pharmacopeia as:

Strychninæ Nitras.—U. S.—This represents 84 per cent. of strychnin alkaloid and is soluble in 42 parts of water or in 120 parts of alcohol.

The average dose of either of the official preparations is given as 0.001 gm. (1 mg. 1/64 gr.).

Strychnin is useful in all forms of low blood pressure because of its action on the vasomotor center.

There can be little doubt of the beneficial effects of strychnin in many cases of shock or collapse, but when irrecoverable shock exists it appears to depress further the centers after an extremely brief stimulation.[2]

To secure its greatest usefulness in conditions of this kind strychnin should be given hypodermically, or to secure an even quicker action it should be injected deeply into the muscle of the arm or thigh. This method of hypodermic injection is usually to be preferred as it is less painful than injections just beneath the skin.

Strychnin is one of the best of respiratory stimulants and in an emergency large doses may be given. It is always to be remembered that strychnin is a remedy for the crisis and is not to be used as is digitalis, to maintain blood pressure for a considerable length of time.

When paralysis of the limbs is due to a lesion in the cord which completely blocks the transmission of nerve impulses strychnin can do no good, since it has no peripheral action, but if the paralysis results from a lesion in the brain the increased reflexes which strychnin causes will serve to delay muscular atrophy. It also may serve to restore the tone of the reflexes when these are lowered by functional disturbances of the cord. Thus incontinence of feces and urine may be relieved when these are due to the lowered reflex centers for the sphincters of the bladder and anus.

Caffein, which has been mentioned several times in this series of articles, is closely related to strychnin, to which, however, it is greatly inferior, so far as any influence on the circulation is concerned. It stimulates the vasomotor and respiratory centers and is useful, therefore, in the treatment of poisoning by morphin and other narcotics, in the form of strong tea, but strychnin serves the same purpose and more efficiently.

Hoffmann noticed that theobromin possessed a stimulant action on the myocardium, similar to that shown by caffein, but no vasoconstrictor effect. In therapeutic doses of either agent, however, this cardiac effect is of little importance.

ATROPIN.

Atropin causes acceleration of the heart by paralyzing the vagus endings, and this also causes an increased systole and a lessened diastole. The rate of the heart may be twice as great as under normal conditions, the result being a considerable increase in the output of the heart in a unit of time.

The effect on the circulation of the increased heart action is supplemented by the constriction of the arterioles of the splanchnic area, due to stimulation of the vasoconstrictor center by atropin, which also stimulates the vasodilator center for the vessels of the skin, particularly those of the face and neck, but this is of comparatively little influence on the general blood pressure which rises in response to the two actions just mentioned.

The influence of atropin on the heart rate is much less in children and in old age than it is between the ages of 20 and 60 years, because the vagus inhibition is slight at the extremes of life in man. The vagus is much more active in some animals than in others. In this respect the dog resembles man.

Atropin may cause a brief but unimportant slowing of the heart, due to stimulation of the center, preceding the acceleration which depends on the paralysis of the vagus endings. While it has been undeniably shown that atropin may powerfully stimulate the myocardium, this effect with therapeutic doses is so slight that it may be entirely disregarded. Atropin acts as a stimulant to the respiratory center, but it is inferior in this respect to strychnin; it increases the rate, and probably the depth, of the respiration.

The central action of atropin is exerted mainly on the motor area, but it has been suggested that the differences between the action of atropin, caffein and strychnin on the various parts of the central nervous system are in degree rather than in kind. Thus, while caffein acts mainly on the higher centers in man, stimulating the psychic functions, it is capable of causing strychnin-like convulsions in the frog. All three act as powerful respiratory stimulants in mammals.

Atropin is official as:

Atropina.—U. S.—Atropin is an alkaloid prepared from *Atropa belladonna*, or from other plants of the same family. It is soluble in 450 parts of water and in less than 2 parts of alcohol.

Atropinæ Sulphas.—U. S.—This salt of atropin is official in many if not all pharmacopeias and is the best known and most widely used preparation of the atropin group. It is soluble in less than one part of water and in 4 parts of alcohol.

Average dose: (Alkaloid or salt) 0.0004 gm. (0.4 mg. 1/160 gr.).

Atropin is indicated when the heart is considerably slowed. For this purpose the average dose given above is not usually sufficient, about 1 mg. (1/65 grain) being necessary to increase the rate; so large a dose being necessary to produce paralysis of the vagus endings in the heart. It must be remembered, however, that in children and in the very old (after 70) the effect to be expected is much less than that seen between the ages of 20 and 60. This larger dose causes stoppage, or, at least, a marked diminution of salivary secretion with consequent dryness of the mouth and throat.

While atropin has been used in shock and collapse, it can have but little influence on blood pressure or respiration in such cases. Atropin may be used to determine whether an abnormally slowed or intermittent heart results from central influences or from causes within the heart itself, since it cuts off all impulses from the center arriving through the vagus, but produces no appreciable effect if the cause lies within the heart.

Atropin has been used to prevent the reflex stoppage of the heart occurring at the commencement of anesthesia, but it has been shown that there is no danger of such a catastrophe if the anesthetic is not used in too great concentration.

Poisoning by certain fungi which contain muscarin, while rare, may best be treated with moderate doses of atropin. Pilocarpin is also antagonized in nearly all its actions by atropin, but the latter does not counteract the cardiac effects of physostigmin which acts on the myocardium.

The value of atropin in opium poisoning has been much disputed. It seems to possess no advantage over caffein and strychnin in such cases and it has the disadvantage of adding to the depression of the respiratory center if more than a small dose is given. Clinical experience seems to have abundantly proved that small doses of atropin are corrective for ordinary doses of morphin, and it is almost universally so used.[3]

Atropin is usually given hypodermically when the central effects are desired. The local action of atropin in the intestines has been mentioned, and we may have occasion to refer to it again.

CAMPHOR.

Camphora.—U. S.—Camphor is a white, volatile, solid substance having a crystalline structure and a characteristic aromatic odor and taste. Camphor has been used in the Far East for many centuries, but was not known in Europe until introduced by the Arabians. It is now official in all pharmacopeias.

Average dose: 0.12 gm. (2 grains).

Aqua Camphoræ.—U. S.—This is a saturated solution of camphor in distilled water. It is frequently used as a vehicle for other and more active medicinal substances.

2. Crile defines surgical shock as an exhaustion of the vasomotor centers, the cardiac and respiratory centers being only secondarily involved, and collapse as due to a suspension of the functions of the cardiac or vasomotor centers or to hemorrhage. Of course, an exhausted or paralyzed structure can not be stimulated. Sollmann defines both shock and collapse as a sudden depression of the activity of the medullary center; if of reflex origin, shock; if direct, collapse. We employ the terms in the latter sense. A depressed center may be stimulated.

3. A widely used combination consists of morphin sulphate 0.015 gm. (¼ grain) and atropin sulphate 0.0004 gm. (1/160 grain) prepared in the form of the now popular hypodermic tablets or dissolved in distilled water sufficient for one dose.

Average dose: 1 c.c. (2 fluidrams).

Spiritus Camphoræ.—U. S.—This is a 10 per cent. solution of camphor in alcohol.

Average dose: 1 c.c. (15 minims).

Linimentum Camphoræ.—U. S.—This preparation, variously known as camphor liniment and camphorated oil, contains 20 per cent. of camphor dissolved in cottonseed oil. While largely used as a mildly rubefacient local application it is not infrequently used for hypodermic injections or for the internal administration of camphor in the form of an emulsion. The average dose would be about half of that given under spirit of camphor.

In shock or collapse camphor is given by the stomach, producing a feeling of warmth and probably acting reflexly for the most part. The respiratory and vasomotor centers, as well as the heart muscles, are stimulated, thus causing a rise of blood pressure. The heart is usually slowed and the contraction strengthened. Camphor is almost insoluble in water and only slightly volatile at the body temperature, and its action, therefore, is very uncertain; 0.03 gm. (½ grain) may improve the pulse in some cases while twenty times as much may be required in others, hence but little reliance can be placed on it in crisis, though it is very often effective. The spirit, diluted with water, is frequently used for internal administration. A number of camphor derivatives have been employed from time to time, but they have not been shown to possess any advantages over camphor itself, or one of its more simple preparations.

Camphor is frequently employed as a diaphoretic, particularly in combination with other agents, because of its stimulation of the vasodilator centers for the cutaneous vessels.

As noted above, camphor water alone has little therapeutic value and is useful mainly as a vehicle for other substances. Camphor may be given in pill form, in capsules or in the form of an emulsion. Probably the best method of administering camphor consists in suspending the finely powdered substance in twenty parts or more of milk. For this purpose from twenty drops to one teaspoonful of the spirit of camphor may be directed to be given in one or two tablespoonsful of milk.

The several preparations of camphor are commonly employed externally as a mild rubefacient, but the action of camphor when applied in this way is largely if not entirely a local one.

MUSK.

Moschus.—U. S.—This substance has been used in Europe for several centuries, and in China and other far Eastern countries from time immemorial. The portion that is now official is described as "The secretion from the preputial follicles of *Moschus moschiferus*" (musk deer), an animal which inhabits Thibet and other parts of Central Asia.

Average dose: 0.25 gm. (4 grains).

Tinctura Moschi.—U. S.—This represents 5 per cent. of musk in diluted alcohol.

Average dose: 1 c.c. (15 minims).

Musk was brought forward nearly a century ago as a powerful circulatory stimulant, and S. Solis-Cohen recently recommended it as an efficient and dependable remedy when it can be obtained of good quality, but it is extremely expensive and subject to gross adulteration.

Musk probably resembles camphor in its action on the centers and has the advantage of greater solubility in proportion to the amount required.

Castor fiber and sumbul root, which have been recommended as substitutes for musk, are entirely devoid of any such central action as that claimed for the latter.

Musk may be given in capsules, or in some cases the tincture may be preferred.

AMMONIUM PREPARATIONS.

While ammonia, as one of the products of the decomposition of nitrogenous materials, was known from a very early period, the volatile salts of this substance were not available in Europe as medicines until after the thirteenth century, when Raymundus Lullus first produced ammonium carbonate from urine. The stimulating action of this salt, it is said, was known for many centuries to the Hindoos, and was probably known to the Arabians. It is now official as:

Ammonii Carbonas.—U. S.—This is a white, hard, translucent solid having the characteristic odor of ammonia and a sharp saline taste. The official salt is described as being "a mixture of acid ammonium carbonate and ammonium carbamate."

Average dose: 0.25 gm. (4 grains).

Aqua Ammoniæ.—U. S.—This is an aqueous solution of ammonia containing 10 per cent., by weight, of gaseous ammonia.

Average dose: 1 c.c. (15 minims).

Spiritus Ammoniæ Aromaticus.—U. S.—This is a hydroalcoholic solution containing 3.4 per cent. of ammonium carbonate, 9 per cent of ammonia water and 70 per cent. of alcohol aromatized with oil of lemon, oil of lavender flowers, and oil of nutmeg.

Average dose: 2 c.c. (30 minims).

The volatile salts of ammonium, in the form of the well-known "smelling salts," are very commonly employed by inhalation for their reflex effects on the respiratory and cardiac centers. The aromatic spirit of ammonia when taken by the stomach has a similar action. Other actions of ammonium salts have been enumerated in previous chapters.

The water of ammonia, when taken internally, merely acts as a caustic alkali. It is seldom so used. The aromatic spirit is usually added to water at the moment of taking.

Smelling salts consist of varying mixtures of ammonium carbonate, or of ammonium chlorid with potassium carbonate, and spirit of ammonia to which oil of lavender flowers is usually added as an aromatic.

ALCOHOL AND DERIVATIVES.

Alcohol, or distilled spirit, was probably introduced into Europe by the Arabians in the 10th or 11th century.[4] Apart from the several forms of alcohol that are clinical we have:

Spiritus Frumenti.—U. S.—An alcoholic liquid obtained by the distillation of the mash of fermented grain, such as Indian corn, rye, wheat and barley, or their mixtures. To conform with the official requirements whisky should be at least four years old and comply with a number of physical requirements and chemical tests that are now provided.

Spiritus Vini Gallici.—U. S.—Brandy. This is an alcoholic liquid obtained by the distillation of the fermented unmodified juice of fresh grapes. Like whisky it should be at least four years old and should conform to the tests for identity and purity that are described in the Pharmacopeia.

Æther.—U. S.—Ether or ethyl oxid was discovered by Valerius Cordus, about 1540, and described as "Oleum vitrioli dulci." The preparation appears to have been entirely forgotten and was rediscovered by Frobenius, a London apothecary, about 1730.

Sulphuric ether, the name given it at that time, although long known to be a misnomer, is still retained in connection with commercial varieties of the substance.

Average dose: 1 c.c. (15 minims).

Spiritus Ætheris.—U. S.—This contains 32.5 parts of ether and 67.5 parts of alcohol.

Average dose: 4 c.c. (1 fluidram).

Alcohol in the form of whisky or brandy is much used in shock or collapse in connection with other agents such as strychnin and digitalis. Its value is strongly asserted by some authorities and disputed by others. Ordinary doses of alcohol have little effect on the circulation in animals, but clinical evidence seems to prove that alcohol does possess some value in the conditions mentioned, particularly when a very brief respite for the heart tides over a crisis. Spirit of ether may be given by the stomach, or used by hypodermic injection, and probably acts reflexly on the centers in such cases.

ERGOT.

Ergot has been recommended in shock and in hemorrhage in inaccessible locations. The use in the latter condition is based on its undoubted power of causing vasoconstriction in certain areas. It is much less useful than strychnin in shock because of its slow action, and in hemorrhage there is no

4. According to Pereira the Arabians obtained their knowledge of distilled spirit from the Chinese, who knew and used distilled spirit at a much earlier period.

reason to expect a greater vasoconstriction at the bleeding point than elsewhere and a rise in the general blood pressure beyond that necessary to sustain the circulation in the medulla, is contraindicated in hemorrhage. This, of course, does not apply to postpartum hemorrhage, because ergot has a specific action on the uterus, causing a firm contraction and thereby closing the bleeding vessels by compression.

Sollmann and Brown have recently studied the action of ergot when injected intravenously into dogs.[4] They found that it influenced the general circulation but little, particularly when the blood pressure was much lowered. They found that it caused a temporary fall in the blood pressure with speedy recovery, generally followed by an unimportant rise. The effects were mainly due to the action on the heart, as the vasomotor action was very slight.

The further discussion of its obstetrical use does not belong here.

Ergota.—U. S.—The sclerotium of *Claviceps purpurea*, gathered from rye, and not more than one year old.

While ergot had been used in Germany for centuries as a household remedy, it was not generally recognized as an efficient drug until some time after 1777, when Desgranges published several essays on the use of ergot.

The vasoconstrictor properties of this drug appear to be due to the alkaloid cornutin, discovered by Kobert in 1884, and more fully described by Keller in 1894.

Extractum Ergotæ.—U. S.—This is a hydro-alcoholic extract of ergot partially purified by the addition of hydrochloric acid subsequently neutralized with sodium carbonate. It should represent eight times its weight of ergot.

Average dose: 0.25 gm. (4 grains).

Fluidextractum Ergotæ.—U. S.—This is directed to be made with diluted alcohol that has been acidified by the addition of acetic acid.

Average dose: 2 c.c. (30 minims).

Vinum Ergotæ.—This represents 20 per cent. of the fluidextract of ergot in fortified white wine.

Average dose: 8 c.c. (2 fluidrams).

Ergot is preferably given in the form of the fluid extract without other additions. There are a number of water-soluble preparations on the market at the present time that are intended for hypodermic use, which, it is claimed, possess all the active principles of ergot, without the odorous and nauseating contaminations.

New Instruments

SOME MASTOID INSTRUMENTS.

AND SOME APPLIANCES FOR EAR WORK.

FRANK ALLPORT, M.D.

CHICAGO.

A MIDDLE EAR SYRINGE.

Practically all middle ear syringes are unclean and frequently out of order. I submit one of glass and rubber that can always be ready for use, and which is so cheap that the surgeon can afford to possess a number of them (Fig. 1). An objection has been raised to it that the point is not large enough to enter minute perforations of the drumhead. In answer to this I contend that no middle ear should be irrigated through a minute drumhead perforation. Such tympanic irrigations should be confined to those cases where the irrigating liquid can find a ready exit, otherwise dangerous complications are likely to ensue.

A MASTOID PERIOSTEOTOME.

In stripping the mastoid process of its periosteum after the primary incision has been accomplished, an effort should be made to preserve all possible periosteum. This purpose is liable to be defeated by the sharp scraping instruments usually employed, which tear and mangle the periosteum. I desire to recommend the instrument shown in Figure 2 as one that can be passed underneath the periosteum, thus lifting and not tearing it from the bone. It has a small end and a large end, and the latter should be used where much force is indicated. This instrument can not be used when the lower portion of the mastoid is to be cleaned, for at this portion of the bone the roughened surface and tendinous attachments of the muscles make the soft tissue cling to the irregular bone surface with such tenacity that one of the scraping periosteotomes and a pair of strong scissors must be used. My instrument, however, can be used at all other portions of the bone.

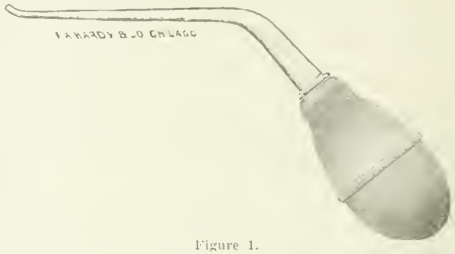


Figure 1.

The narrow end of the instrument has been gently concavo-convexed to fit the bony external auditory canal, and is used in the radical mastoid operation to pass between the cartilaginous and the bony meati, in order to separate them thoroughly and facilitate the subsequent steps of the operation. This instrument is not useful in secondary mastoid operations where dense cicatricial bands connect the soft tissue with the bone.

Figure 2.

A PERMANENT NEEDLE.

Having been much troubled with the breaking of needles in closing mastoid wounds, I have for a long time used the instrument shown in the drawing (Fig. 3). Near the point of the needle is a small opening, that can be opened and closed by pressing the button near the handle. The needle is pushed through the soft tissue with the small perforation closed, the suture is then doubled and placed in the opening, which is

Figure 3.

then closed. The needle is then withdrawn with the suture and one end of the suture pulled through when the suture will be ready for tying. I use this instrument only in my buried catgut sutures in the radical operation, as for closing the outside lips of the wound I use the metal sutures proposed by Michel.

THE MICHEL SUTURES, ETC.

For closing the external lips of the mastoid wound I have

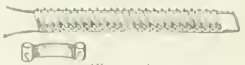


Figure 4.

for some time been using with great satisfaction the metal Michel suture, a drawing of which is here given (Fig. 4).

These sutures are easily and quickly applied, scarcely ever produce stitch abscesses, and result in a quicker healing and a more imperceptible line of cicatrix than any sutures I have ever employed. Several instruments or appliances are necessary for their advantageous employment, viz., a wire suture holder which enables the surgeon to conveniently take hold of the suture, a strong pair of forceps (Fig. 5) with points so constructed as to grasp and hold firmly the suture and to

Figure 5.

4. This Journal, A. M. A., July 22, 1905, p. 229.

grasp and hold the two sides of the wound forcefully, and a pair of forceps (Fig. 6) for removing the sutures after the wound has healed. The two ends of the removing forceps are pointed so that one end may be gently insinuated underneath the middle of the bent suture after it has been holding the soft tissues together for a few days. The two blades of the forceps are then brought firmly together at the middle of the suture, one blade being underneath and the other over the suture; this, of course, will cause the two outer ends of the suture to separate, thus removing the sharp points from the

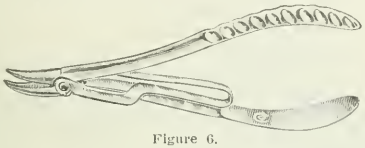


Figure 6.

flesh. The suture is now liberated and may be cast aside or straightened out and used again.

In applying a suture it should be held on the wire loop or suture holder by an assistant, the surgeon should grasp the suture with the forceps and pull it off from the loop, an assistant should grasp the two lips of the wound with strong forceps, bring them together and hold them up, thus approximated, as prominently as possible for the benefit and convenience of the surgeon, who should now forcefully clamp the suture around the lips of the wound, and bring the two

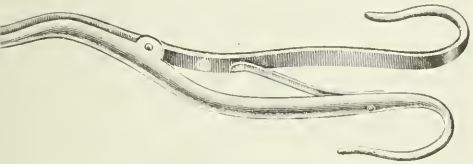


Figure 7.

ends of the suture, armed with the little needle points, as close together as possible by firm pressure of the strong forceps. Five or six sutures are usually sufficient, even in a large mastoid wound. I usually remove about half the sutures in three days and the remainder in six or seven days.

A MEATAL DIVULSOR.

For those who split the cartilaginous meatus after the method of Panse in producing healing flaps after the radical mastoid operation the instrument here shown will prove of value (Fig. 7). A grooved director is used by some to guide

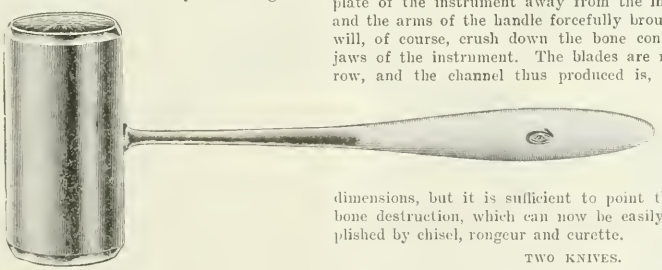


Figure 8.

the knife, strong forceps, widely spread, by others, but for a long time I have used the "meatal divulsor" as I call it. The instrument is introduced through the meatus and passed through to its further end and spread so that the cartilaginous meatus is placed on a stretch. A knife can now be passed into the tympanic end of the meatus and the cartilaginous wall easily and accurately severed up to the desired point at the conchal rim, spreading the divulsor more and more as the incision advances toward the concha.

A METAL COVERED WOODEN MALLET.

For mastoid work a silver or lead mallet is too heavy and harsh, and a rawhide mallet is too soft and soon becomes useless from boiling; a wood mallet also becomes cracked and worthless from boiling. I employ, therefore, a good-sized mallet made of lignum vitæ, encased in steel, with a strong steel handle. It is imperishable and thoroughly satisfactory (Fig. 8).

A BONE CRUSHER.

An important step in the radical mastoid operatio is the breaking down of the posterior wall of the meatus. Injury to the facial nerve, semicircular canal, etc., may follow this procedure. The complete clearing away of the upper portion of the bony meatus, without injury to surrounding parts, is much facilitated if a small pathway through the bone to the tympanic cavity, etc., can be distinctly blazed by some instrument. I have found the "bone crusher" (Fig. 9), to be of

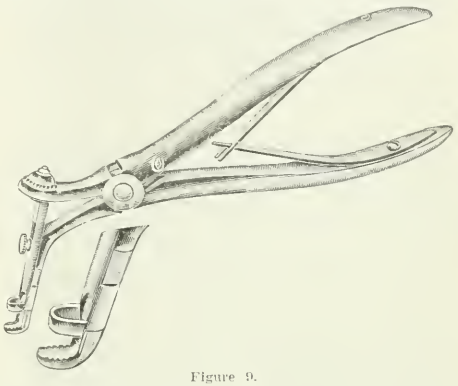


Figure 9.

great service for this purpose. Before using it the mastoid cavity, antrum, etc., should be thoroughly curetted and cleaned. The crusher has not sufficient power and strength (and should not have) to break down the entire thickness of meatal wall. The surgeon should proceed, therefore, as if expecting to destroy the meatal wall with the chisel and mallet alone, and carve away a considerable portion of the bony wall with these instruments. After, perhaps, one-half of the work has been accomplished, the footplate of the crusher should be carefully insinuated through the antrum to the middle ear, the handle firmly depressed so as to raise the footplate of the instrument away from the inner tympanic wall, and the arms of the handle forcefully brought together, which will, of course, crush down the bone contained between the jaws of the instrument. The blades are not broad, but narrow, and the channel thus produced is, therefore, of small dimensions, but it is sufficient to point the way for further bone destruction, which can now be easily and safely accomplished by chisel, rongeur and curette.

TWO KNIVES.

One of the recognized defects in the radical mastoid operation has been the deformity often produced by an abnormally wide and gaping meatus. This trouble I have been able to dissipate entirely by the use of two knives, which I will now describe, my description referring, of course, as will be seen, to the Panse flap which I use to the exclusion of all others. After everything is ready for flap making and wound closure I insert the double-edged knife (Fig. 10) into the raw posterior portion of the auricle, as near as possible to the middle edge of the meatus. The knife is carefully pushed forward

and made to reappear at the middle of the meato-conchal edge; after enlarging the opening a little the knife is withdrawn and the blunt-pointed knife (Fig. 11) is made to take its place, as the seesaw movement necessary to finish the incision up and down would be likely to produce multiple punctures on the other side of the meatus. The blunt point of the

Figure 10.

other knife renders the subsequent procedures free from such embarrassments, and the fact that the blade convexes forward on the edge enables the surgeon to complete more effectively the remote corners of the incision. The knife should be carried up as far as desired, and then down, always keeping in view the meato-conchal edge, and keeping the line of incision exactly on this edge. In this way the meatal opening is enlarged only a trifle, and the surgeon can be absolutely sure

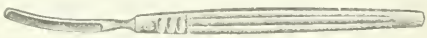


Figure 11.

that a constant and non-deforming result will occur. The backward incision along the cartilaginous meatus can now be completed by the divulsor and knife as already described.

A GAUZE PACKER.

A good instrument for packing gauze is desirable not only at the time of the mastoid operation, but more particularly at the subsequent dressings. I have already described the packer here shown, but as two important modifications have been made in it, I venture to refer to it again. It has a cone-shaped point, flat and round at the distal extremity, which

Figure 12.

gradually diminishes in bulk as the shank of the instrument is reached, thus enabling the operator to pack down firmly the gauze without any tendency to displace the packing as the instrument is withdrawn. The narrow portion of the shank as formerly made was flexible; it is now stiff and firm. The distal end used to be smooth; it is now roughened and catches the gauze better.

A HOOK PROBE.

I have described this hook probe some years ago as a useful instrument for finding and dislocating the ossicles in the

Figure 13.

operation for ossiculectomy, and also as a generally useful ear hook and probe. I now, however, find it exceedingly efficacious in the mastoid operation as a probe for the detection of carious spots, and especially for locating openings in the roof of the tympanum, aditus, or antrum. It consists of a slender shank, bent at right angles at the end and tipped with a small round ball (Fig. 13).

THE MASTOID RETRACTOR.

I trust I may be pardoned for referring again to my mastoid retractors, now in general use for so many years (Fig. 14). They have been modified somewhat of late by making them much stronger so that they possess great power and do not break. The skin incision should be long enough to allow the operator to place two pairs of these retractors in the opening, one pair in the upper angle of the wound and another pair in the lower angle. The teeth of the arms of the retractors

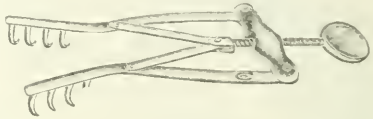


Figure 14.

should be placed underneath the periosteum and the arms should then be expanded to their utmost limits by turning the thumbscrew at the base of the instrument. I rarely use an artery forceps, and when both retractors are thus widely separated a perfect and comparatively bloodless field of operation is observed between the four arms of the two retractors. Some operators still employ the old hand retractors, one for each side of the wound, but these retractors necessitate extra hands and arms around the operative field, and they do not control hemorrhage, and no one can always maintain steady and uniform hand retraction.

A PILLAR SEPARATOR.

Robertson's pillar separator usually acts well in separating the pillar from the tonsil preparatory to a removal of the lat-

Figure 16.

ter, but it does not always cut well, which is embarrassing to the operator and frequently painful to the patient on account of the forcible dragging of the blade on the yielding soft tissue. I beg to suggest a knife with a wavy blade, like a bread knife, which, when sharp, by the use of a gentle to-and-fro movement, easily and comparatively painlessly cuts the soft tissue without much effort (Fig. 16).

A BEDSIDE TRAY.

It would seem easy to purchase a small and convenient tray for carrying a few eye and ear instruments, solutions, cotton, etc., from bed to bed in a hospital, and yet a faithful search

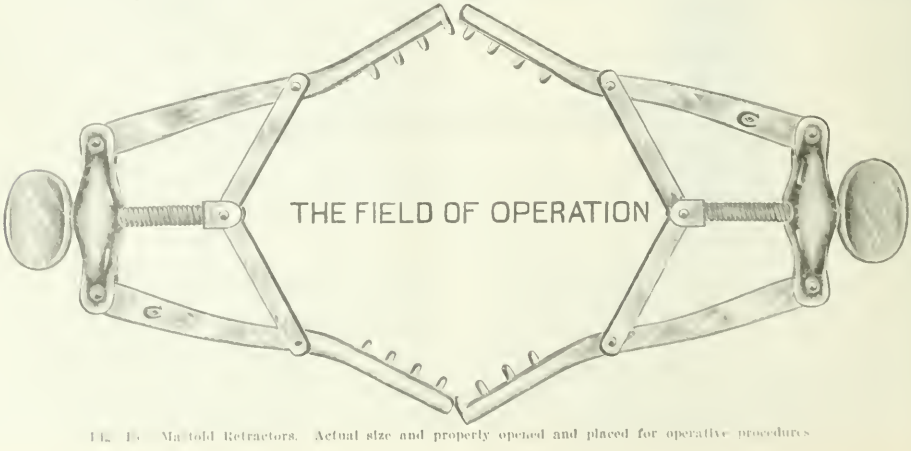


Fig. 15.—Mastoid Retractors. Actual size and properly opened and placed for operative procedures.

n instrument stores has failed to produce one. I beg, therefore, to suggest one, so simple that apologies seem necessary for the suggestion, and yet one that has seemed to answer satisfactorily the purpose for the past year at St. Luke's Hospital (Fig. 17). It is simply a small tray with a shelf for holding a few bottles, and a space of sufficient size for holding miscellaneous articles such as droppers, gauze, cotton, instruments, etc. I think it undesirable to make many partitions in a small bedside tray like the one under consideration,

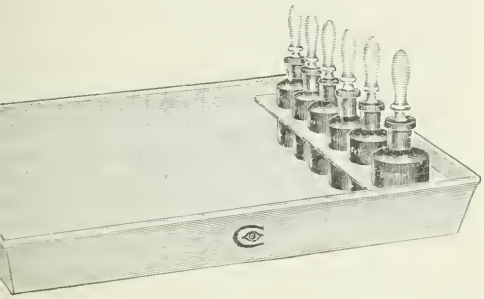


Figure 17.

and have found it much more convenient to lay in the one large space such articles as are absolutely necessary in a tour of the hospital.

A EUSTACHIAN BUR.

Curetting the tympanic orifice of the Eustachian tube is an important part of the radical mastoid operation, as, if this is not done, granulation tissue usually remains and a mucous secretion from the unclosed tube may become a constant and annoying sequel of the operation. This little procedure may be accomplished with a small, sharp spoon curette, and Whiting has devised a conical shaped bur which quickly rims out the orifice. I have, however, found his bur to be over-large for the purpose, and I do not like the conical shape of his bur, as

Figure 18.

it may be too energetic in its action, especially when attached to such a strong handle which not only invites undue force, but also obstructs the view of the bur and tube, which should always be kept in sight. I, therefore, use a bur (Fig. 18) with round outlines, which, it would seem, is capable of doing less harm, and also one possessing a straight handle (without a hand crossbar as in Whiting's), which can be rolled between the fingers when rimming out the tube orifice. It is not likely that much force will be employed in using this instrument, and the bur and tube can always be kept clearly in view.

Clinical Notes

TETANUS FOLLOWING VACCINATION

A. H. CHURCHILL, M.D.

ST. CHARLES, ILL.

Patient.—E. M. B., aged 5½ years, female, in perfect health, living in the country on a farm, was vaccinated Jan. 11, 1906, on left arm with P. D. & Co.'s vaccine from tube. Antiseptic precautions were taken.

History of Disease.—The child was not seen again until January 30, when the following history was obtained: The arm had been but slightly swollen and the child had felt well during the entire time since vaccination. She got up on the morning of January 30, apparently well, sat at table, and ate some breakfast. She seemed to have slight indisposition during the morning, but at noon she drank coffee and milk. During the afternoon the mother said the child wished to lie down and that she noticed some stiffness of the neck.

Examination.—I saw the child at 6:30 p. m. and found some rigidity of the left arm, and considerable rigidity of the neck and jaw. The teeth could be parted about half an inch. There was no rigidity of the right arm or of the back below the neck, or of the legs or abdominal muscles. The child could swallow perfectly.

Course of Disease.—The child was seen again at 1 a. m., January 31. She had had two severe spasms in which she threw herself about in bed, but she was rational when seen. The left arm was some more rigid. The right arm and legs were still normal. Temperature still normal, and the child could still swallow easily. At this time there were muscular tremors through the abdominal muscles, causing her to cry out with pain. From the onset of the symptoms till death occurred there was no movement of the bowels and no urine was passed. The child rapidly grew weaker until 9 a. m. on January 31, when she died, not quite twenty-four hours from the manifestation of the first symptom. There was no post-mortem. The arm, on examination, showed vaccination not doing well. A wound half an inch across, edges indurated and undermined, with a foul discharge.

General Remark.—At the time the vaccination was done the arm was scrubbed with soap and water, and then with alcohol. The scarifying was done with a sterile scalpel, and the vaccination was covered with sterile gauze. From that time the parents took care of the arm, as is practically always the case in the country. I did not see the child from the day I did the vaccination till three weeks later. The arm had not been troublesome, so the parents had not thought it necessary to bring the child to my office. Of course, it is possible that the infection gained entrance at some other point, but as the vaccination wound was the only open wound, I considered that must have been the source of infection. I certainly believe that the infection occurred after the vaccination and entirely independent of it, as all authorities, so far as I find, give ten days as the limit of the period of incubation, and this, as I have stated, was just three weeks after I sent to Chicago for antitoxin. The little girl died before this arrived, however. I have not seen a case recorded in which death took place so soon after the first manifestations of tetanus.

THE PULMONIC SECOND SOUND, IN HEALTH AND DISEASE.

IRVIN HARDY, M.D.

BALTIMORE.

While due attention has been given to the difference existing between the pulmonic and systemic circulations, as a result of pulmonary consolidation, there seems to be a scarcity of comment regarding a comparative lessening of intra-aortic blood pressure.

By experiment and observation I have found in healthy individuals what appeared to be an accentuated pulmonic second sound which would disappear on having the patient walk briskly for a few minutes.

The point I wish to make is that healthy people who are inactive, engaged in sedentary occupations, have an apparent accentuated pulmonic second when in reality it is only a relative one, due to lessened intra-aortic pressure, the result of deficient exercise. Use is made of exercise to bring out signs of disease of the valve segments, but I have seen no literature bearing on this subject. What theory one may have, the fact remains, or at least is constant enough, to keep one on his guard.

If this be true, it would seem that too much stress has been laid on this sign as an early indication of pulmonary tuberculosis, thus giving an opportunity, at least, for misleading conclusions.

742 West Fayette Street.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, APRIL 14, 1906.

WEIGHT AND HEALTH.

There is probably no better—certainly there is no simpler—sign of the condition of an ordinary individual's health up to middle life than his weight. There is no absolute measure of weight for each individual, for it depends on personal peculiarities and on family characteristics; but a definite idea of what any individual's weight should be according to his height can be obtained, and then variations from this normal are important indications of the state of health. This is especially true with regard to children. Children's weight should bear a definite relation to their height, there being a slight difference between males and females in this respect, and with the increase in height there should be a corresponding increase in weight. Any variation from this should at once give rise to the suspicion of a distinct impairment of physical condition and should be the signal for lessening the burdens, educational, laborious or athletic, that the growing child has to bear. Notwithstanding its importance, however, weight is apt to be neglected in the list of symptoms presented to the physician. A mother will tell much about the child's habits, waking and sleeping, and much more about the tendencies that the child is supposed to inherit, but she is not apt to have noticed anything with regard to the child's weight nor to know whether there has been a cessation of that normal increase which accompanies growth in healthy children.

Weight, however, is almost as important in adults. For many years insurance companies throughout the world, in the examination of applicants, have been particular in learning his height, weight and family characteristics in these matters. At least one company announced some years ago that it considered a lesser weight than normal as of more significance with regard to the possible development of tuberculosis than a family history of this disease when the individual to be insured was not at the moment living with those members of the family who were sufferers from tuberculosis. It was definitely proclaimed that to be 20 pounds under the weight that a man should have for his height was more important in its possible danger of permitting or encouraging the development of tuberculosis than a history of this disease on both sides in the direct line in the preceding generation. The more recent ideas with regard to the contagiousness of tuberculosis have confirmed this notion, for it is definitely understood that it is people run down in weight who are most likely to contract the disease.

There are other and more distinctly nutritional affections in which loss of weight may often be one of the earliest and most important indices of the disturbance of the physical condition. In the insidious forms of diabetes, for instance, loss of weight in spite of the presence of good appetite seems to occur especially in that group of cases in which the nitrogenous elements of the body become changed to sugar and are eliminated. Needless to say these are the severest form of diabetes and need to be cared for promptly and by a very severe regimen. Dr. Richard Cabot[1] recently pointed out that arteriosclerosis may sometimes be the important causative factor in an emaciation for which no other organic lesion can be found. It is easy to understand that the loss of elasticity in the arteries by disturbing the circulation would diminish nutritional processes, and that before the heart or the kidneys showed any signs of degeneration a reduction in weight might very well take place. In these cases it is especially important that the condition should be recognized as early as possible, so that all overexertion and the ingestion of material that may prove irritant in the course of metabolism and excretion may be avoided.

In functional affections it is recognized that a loss of weight emphasizes symptoms to such a degree as to add greatly to the discomfort of the patient. Many a nervous dyspeptic suffers more from an irritable condition of nerves produced by lack of proper nutrition than from any other cause. After a time in many persons, because of the discomfort felt during digestive processes, what Einhorn has called sitophobia, a species of fear of food develops, which leads to such a reduction in the amount of nutritive material taken as eventually to induce in the patient a mild form of inanition. A distinguished authority in nervous disease said many years ago that more of the discomfort of nervous patients could be relieved by having them eat a hearty breakfast every day for a time than by any other single procedure known to medicine. Certain it is that when there has been a notable reduction of weight, relief of functional nervous symptoms will not be secured until the weight has been regained.

Practically this makes the scale an instrument of precision that may be an important diagnostic aid as regards the general physical condition, as all physicians have found it who have come to use it in practice. It is of as much value for diagnostic purposes in obscure cases of malnutrition as is the thermometer in febrile conditions. The weight record over a prolonged period is often the best evidence that can be studied of the general condition. There seems no doubt but that in the more accurate record keeping of cases which is coming into vogue the weight variation and its connection with symptoms will be considered of as great importance as other and more difficult modes of observation.

1. The Journal A. M. A., March 17, 1906, p. 763.

URIC ACID AS A BUSINESS PROPOSITION.

The advertising pages of medical journals, the pamphlets that are deposited each day on our desks, the oratory of the ubiquitous detail man, teach us to beware of uric acid.

If we are to believe all that we read and hear, uric acid is a virulent poison, one that causes a protean array of symptoms while it circulates and a very chaos of trouble when it becomes deposited in the tissues; we are exhorted to heed this warning and to prescribe this, that and the other uric acid dissolvent or eliminator in order to rid the organism as rapidly as possible of this dangerous body. Our patients, too, have been taught to inform us that they are "full of uric acid" and must have something to get rid of it. How can it be otherwise if they believe even a part of what they are told in newspaper advertisements by certain "patent medicine" and lithia water vendors.

When we prescribe a medicine we should at least know for what we are giving it and how it is expected to act. Whoever orders so-called uric acid solvents and eliminators presumably believes that uric acid is a poison and the cause of many diseased conditions, that it needs dissolving and eliminating, and that the drug or water he orders can accomplish both these desired purposes. An analysis of the premises on which this so-called therapy is based and of the principles that are supposed to underlie it shows that both are fundamentally fallacious and inconsistent.

The error must be immensely popular, however, and the dissolving of uric acid must be a good business proposition or else so much money would not be expended by practical business men in exploiting dissolvents.

As a matter of fact, uric acid acts pathologically in gout presumably only on account of its tendency to form concretions. The immediate factors that determine the precipitation of crystalline urates in the joints, the kidneys and in other organs of predilection are independent of the circulation in excess of soluble urates; for the urates are often enormously increased in the blood without the appearance of gouty symptoms and without the deposit of urate concretions. The most notable example of this kind is leukemia, in which figures for circulating and urinary uric acid are obtained that are far in excess of those ever observed in gout, but in which urate concretions never appear. On the other hand, typical gouty lesions occur in which no urate deposits are found, and in many cases of gout neither the uric acid of the blood nor of the urine is increased.

The injection of uric acid or its salts into the veins or directly into the joints never produces a syndrome similar to gout, nor does feeding with nuclein-containing foods, with pure nuclein or with uric acid, produce any abnormal clinical signs whatsoever beyond temporary flooding of the blood and the urine with uric acid. Uric acid, when injected in a concentrated form under the skin, may, it is true, produce local inflammation followed by necrosis, but this effect must be attributed quite as much to its slightly acid character and to the mechanical irritation of the sharp crystals of uric acid as to any specifically poisonous effect.

The factors that produce the necrotic areas on which secondary deposits of urates occur are not well understood. It is possible that they vary in different cases, that they may be of a specific, infectious, or of a toxic character. Locally, there is usually some sluggishness of the blood stream that, combined with changes in the relative proportion of the acid and basic phosphates (and carbonates) of the blood, may favor urate deposits; for uric acid is soluble in basic phosphates and insoluble in acid phosphates, so that the preponderance of the latter may determine the decreased solubility of uric acid and hence favor its precipitation, provided a suitable nidus, such as a necrotic area, is provided for its deposit. This will occur whether there is an excess of uric acid in the blood or not.

If the rôle of uric acid is relatively subordinate in true gout, how insignificant it must be in that huge array of vague symptoms, involving almost every organ and function of the body, and grouped under the indefinite name of "uric acid diathesis"! Here the rôle of circulating uric acid is altogether in doubt, for there is practically no tangible evidence to show that the amounts of circulating or excrementitious uric acid vary from the normal. Most of the syndromes that are attributed to the so-called uric acid diathesis are based on some derangement of the bowel, some hepatic insufficiency, possibly slight metabolic disturbances or some neurotic element, and are often accompanied or followed by a reduction of the alkalinity of the blood.

In view of the very subordinate rôle of uric acid in the pathogenesis of gout and allied conditions and the manifold and varying factors that determine its excretion and precipitation in the urine, it is clear that treatment directed exclusively toward the reduction of the uric acid excretion is wrong.

It has been shown,[1] moreover, that the absolute amount of uric acid excreted is no true index of the amount of circulating uric acid, for the kidneys possess to a very marked degree the power of destroying uric acid, so that, even if uric acid were present in excess in the blood, this might not at all become apparent in the urine. Above all, the amount of precipitated urates is no index whatever of the amount of uric acid present in the urine, though commonly interpreted in this way. The deposit of a urate sediment is largely dependent on the relative proportion of basic, neutral and acid salts of the urine, its temperature and its concentration, so that the urine may contain abundant urates and remain quite clear, or it may contain relatively little uric acid and deposit a copious precipitate. As fluctuations in

1. Mendel: The Journal A. M. A., March 24 and 31, 1906.

the uric acid excretion are considered the main index of the success or failure of so-called uric acid treatment, it is apparent that all conclusions in regard to the efficacy of this treatment based on the urinary uric acid excretion or precipitation must be utterly fallacious.

We intend to refer to this matter again shortly.

PROFUSE HEMATURIA AND RENAL COLIC IN CHRONIC NEPHRITIS.

The occurrence of small, usually microscopic, quantities of blood in the urine of chronic nephritics is so common that it is almost to be expected if a case is followed long enough and carefully enough. Attacks of profuse hemorrhage from the kidneys, in the absence of trauma, usually lead us to think of stone, tuberculosis, or new growth; or, as a more unusual cause, a floating kidney. The fact that an ordinary chronic nephritis, either parenchymatous or interstitial, may be associated not so very infrequently with profuse hematuria or attacks of colic has not been generally recognized.

The subject has been recently studied by Askanazy,[1] who was able to collect from Lichtheim's clinic alone eleven cases, three of which came afterward to the postmortem table. A study of these cases and of the literature showed that the condition is far from being uncommon, though the hematuria and colic are not always ascribed to nephritis in reporting the cases. The hematuria occurs in some cases but once, or at any rate at very long intervals, in other cases it may occur frequently at relatively short intervals. In many instances, no immediate cause for the hemorrhage is apparent, but some writers have ascribed it to exposure or to cold, and others have tried to incriminate the strenuous physical life, and especially prolonged marching. The attacks usually come on with great suddenness and may or may not be associated with pain. In some instances the blood disappears as rapidly as it appeared after a few hours, but in other cases the blood remains present, at any rate in microscopic quantity, for several days. More rarely, severe hemorrhage may persist for months or even as long as a year.

The presence of pain with the hemorrhage is not constant, and the reverse is also true. When pain is present it may be dull and constant with exacerbations, or it may simulate by its acuity the most severe attacks of renal colic. In the latter instance, general symptoms, such as dizziness, vomiting, chills, and even fever, may accompany the pain and render the resemblance to renal colic still more striking. Usually the pain is situated in the kidney region on one side, and either side may be affected with equal frequency; rarely the pain is bilateral. Radiation of the pain to the genital organs or along the ureters, such as is commonly seen in renal colic, is not infrequently observed. At times the pain is not referred to the kidney region at all, but is situated in the lower zones of the abdomen or in the region of the bladder.

Both the attacks of pain and the severe hematuria occur in male nephritics much more frequently than in females. This is probably due to the greater exposure of the male sex to cold and the effects of physical overexertion. The occurrence of hematuria and colic with nephritis most commonly between the ages of 30 and 50 is presumably due to the fact that the disease is most frequent between these ages.

The cause of the colic and the bleeding has led to a good deal of discussion. The colic, in some instances, is doubtless due to the lodgment of clots in the ureter, for in some cases these have been passed after an attack. As the colic can occur without hemorrhage, this, however, can not always be the cause. Israel thinks that both colic and hematuria are due to an acute paroxysmal congestion, and Askanazy supports this view. Others have held that the process is in the nature of an acute angioneurotic edema, and still others that crystals in the urine, if numerous enough, can cause the symptoms even in the absence of definite stone. Whatever the cause, the incidence of the condition should be recognized, as it is one likely to lead to mistakes in diagnosis.

1. Zeitft. f. klin. Med., 1900, vol. xviii, p. 432.

VACCINATION AGAINST PLAGUE.

It is rather curious that in the fight against infectious diseases in the human being vaccination in the true sense has been used but little, aside from its use as a preventive of smallpox. In the sense meant by Jenner and Pasteur, vaccination refers to inoculation with a living organism of attenuated virulence, and it seems desirable in the interests of lucidity that the term should be so restricted and should not be employed to designate forms of protective inoculation in which killed organisms or their extracts are employed.

We have frequently pointed out in these columns the difference between diseases due to bacteria which excrete their toxins and those due to bacteria in which the toxins are intimately associated with the body of the bacterial cell. Most human infectious diseases are caused by bacteria of the second group, and, as it is in animal diseases of this group that true vaccination has been most successful, it would seem likely that the same would be true of human infections of this type. Aside from the difficulty often experienced in getting human beings to submit to preventive inoculations with attenuated viruses, the physician himself, no doubt, feels some hesitation in employing this method, on account of the fact that it is difficult to be sure that the organism to be inoculated is sufficiently attenuated, and that all risk of causing a fatal attack of the disease can be eliminated.

The history of attempts to vaccinate against plague is not modern, for the plan was tried in the eighteenth century, but with disastrous results. From the experimental standpoint the subject has been attacked by in-

dependent investigators and by the plague commissions of recent years, but until recently the risk of producing a fatal issue was still too great to think of applying the results of the experiments to man. Part of the difficulty in plague has been in finding a method by which the plague bacillus could be successfully attenuated, but this has apparently been accomplished at last both by Kolle and Otto and by Strong.[1] The latter observer, after carefully testing his cultures on animals, made a series of inoculations into prisoners sentenced to death, with no deleterious results. The plague bacilli, suspended in salt solution, were injected into the depths of the deltoid muscle, and caused a slight induration, mild fever lasting for two or three days, and a leucocytosis. Suppuration at the point of injection never occurred. The study of the agglutination reactions and the testing of the serum on the lower animals gave abundant evidence that the vaccinations were effective. So far as animals are concerned, Strong states that vaccination is by far the most effective form of inoculation.

In bringing the matter to the attention of the medical profession, Strong warns against the use of any strain of pest bacillus except one which has been properly attenuated and thoroughly tested on animals. Unless the utmost care be taken, untoward results will surely follow, for it is extremely difficult properly to attenuate the plague bacillus; in fact, the process may take years. The reports of Kolle and Strong are of great interest and hold out the hope that in time we may be able to protect against plague as efficiently as we now do against smallpox, and with no more risk.

EDEMA OF THE LUNGS AS A COMPLICATION OF ETHER NARCOSIS.

To the surgeon who operates frequently, the induction of inhalation narcosis becomes a familiar and consequently a comparatively simple procedure. That it is by no means so will be readily understood from a consideration of the physiologic conditions present, and this fact has been conclusively demonstrated by the happily not frequent fatality attending the practice, even when this was not to have been foreseen by anything short of prescience. Heart failure from the inhalation of chloroform is always kept in mind by the careful operator and anesthetist, while the possibility of respiratory failure during ether narcosis or the development of some form of pneumonia as a sequel should always receive due consideration. Edema of the lungs is a rare complication of ether narcosis, and a most interesting case of this kind is added by Dr. Victor C. Pedersen[2] to the small number that have heretofore been placed on record. The patient was a healthy man, about 30 years old, who was to be operated on for internal and external hemorrhoids. Narcosis was induced by means of nitrous oxid gas followed by ether, about one gallon of the former and four ounces or less of the latter being used. Cyanosis appeared at once and excitement was marked. During the operation, which occupied twenty minutes, the color was satisfactory, and there was no evidence of undue accumulation of mucus in the respiratory passages. Cyanosis reappeared when after the operation the patient was restored to the dorsal decubitus, and soon respiration appeared about to fail. Auscultation disclosed the physical signs of acute edema of the lungs. Atropin, grain 1/25, was administered hypodermically, the foot of the bed was elevated to an angle of about 15 degrees, dry cups were applied extensively to the chest, strychnin sulphate, grain 1/20, followed by whisky, was administered hypodermically, inhalation of oxygen was practiced, and nitroglycerin, grain 1/25, was injected beneath the skin, and finally the foot of the bed was raised to an angle of 30 degrees. Improvement became evident in the course of forty minutes and continued to perfect recovery. The admirable behavior of the heart prior to the development of the edema makes it probable that the latter was primarily and directly due to the irritation of the air vesicles by the ether. In view of this fact, the greatest care should be exercised in the administration of ether by inhalation in order to avert this danger. The common practice of pushing the anesthetic when resistance appears during the stage of excitement should be abandoned in favor of a gradual and steady administration. The report of this case teaches, further, the importance of physical examination of the chest following ether narcosis, as by this means an edema of the lungs may at times be recognized that would otherwise escape observation, and even perhaps progress to a fatal termination.

1. The Philippine Jour. of Science, 1906, vol. i, p. 183.
2. Ann of Surg., January, 1906, p. 35.

THE METABOLIC FACTOR IN THE ETIOLOGY OF THE PAROXYSMAL NEUROSES.

Migraine, asthma and epilepsy, in addition to their periodicity of recurrence and a certain interchangeability, have in common the peculiarity that the paroxysm is not infrequently preceded by phenomena of functional derangement of one sort or other, which disappears with the attack, suggesting the possibility of some disturbance in the body chemistry as the exciting factor. These phenomena, in the opinion of Dr. Francis Hare,[1] are dependent on variations in the intake and output of carbon dioxid. The disorders mentioned also exhibit certain relations to acute articular gout. Accordingly, Hare formulates the hypothesis that all the affections named are due primarily to an accumulation of unoxidized or imperfectly oxidized carbonaceous material in the blood, the paroxysm being a conservative measure adapted to the dispersion of such an accumulation. To this condition he gives the name hyperpyremia, and from a series of observations he develops the generalization that whatever tends to reduce the carbonaceous income or to increase the carbonaceous expenditure of the blood tends to the dispersion of the paroxysm, while whatever tends to increase the carbonaceous income or to decrease the carbonaceous expenditure of the blood tends to initiate, precipitate or intensify the paroxysms of migraine, asthma and epilepsy. Accordingly, the

1. Practitioner, February, 1906, p. 179.

conclusion is reached that hyperpyremia is a common humoral factor, at least in some cases, of the special pathologic variation of vasomotor action on which depend the attacks of migraine, asthma and epilepsy. Paroxysms of these affections can be viewed in the light of conservative, though not necessarily salutary, reactions adapted to dispersion of the hyperpyremia. Hyperpyremia implies relative failure of the physical functions that together comprise the carbonaceous expenditure of the blood.

THE CAUSE OF BERIBERI.

The importance of a knowledge of the etiology of a disease before satisfactory steps can be taken to prevent it has never been more forcibly demonstrated in recent years than in the experiences of the Japanese army with beriberi. It is hardly necessary to speak of the success which the Japanese had in preventing the spread of the infectious diseases of known origin, such as typhoid fever and dysentery, for this is common knowledge, but it is perhaps not widely known that, at a conservative estimate, from 75,000 to 80,000 cases of beriberi occurred in the Japanese army. Dr. Herzog[1] of the Manila laboratory was detailed to investigate beriberi among the Japanese soldiers who had been invalided home, and in his preliminary report describes a coccus which has been isolated from the blood and excretions of patients with this disease by Dr. Kokubo of the Japanese army. Dr. Herzog is now working on the organism, and it is to be hoped that at last the cause of this mysterious and fatal disease is to be run to earth.

THE SURGEON'S LIABILITY FOR UNAUTHORIZED OPERATION.

A Minnesota physician some time ago found it necessary, in his judgment, to perform an operation somewhat different from that which had been first intended when the patient was put under anesthesia. As a result he was sued for damages, and the case has been before the courts now four times, the first trial resulting in a disagreement of the jury; the second, in a verdict of over $14,000 damages (set aside as excessive by the higher court), and the third trial, in a verdict of $3,500 damages. This verdict has now also been set aside. The judge says that had he known the evidence at the time of the third trial as he did afterward the result would have been different. The condition of the patient (with suppuration of the ear) demanded relief, because otherwise her life would have been left in jeopardy, and physicians called as witnesses testified that the procedure used was indicated. Therefore, decided the court, the surgeon would have been subject to criticism if he had not done what he did, and manifestly it is not right that he should be wrong both in doing and in not doing a certain thing. It appears from this that a surgeon who ventures to do what was not anticipated still undergoes a risk, yet in cases where his deviation was necessary or essentially life saving and can be proved to be of that character, it is recognized that he ought not to be mulcted for damages.

1 Philippine Journ. of Science, 1906, vol. 1, p. 169.

THE ARMY MEDICAL BILL.

The Act to increase the efficiency of the Medical Department of the Army was passed by the Senate March 29 and favorably reported by the Military Committee of the House of Representatives April 4. It has therefore reached the same stage as it did in the last Congress, when it failed because it was not permitted to come to a vote in the House. If brought before the House its passage is considered certain, but under the rules of that body this can not occur without a special rule fixing a day for its consideration. This is a matter which is well known to be in the hands of the Speaker. The reason given for his unfavorable action last year—the existence of a deficit in the Treasury—does not obtain this year. In view of the fact that this measure is considered by the War Department and the President absolutely essential to an efficient organization of the Medical Department, and that the medical profession generally is strongly interested in it, it is earnestly to be hoped that Mr. Cannon will not again assume the responsibility of preventing Congressional action on this most necessary and humane measure.

Medical News

CALIFORNIA.

New Hospital.—The new hospital at San Diego, erected by Dr. Joseph C. Hearne, was formally opened March 7.

Medicine Vendor Convicted.—A jury in Sacramento, March 17, found "Dr." George Hirzu guilty of selling medicine in the public streets, contrary to the city law.

Will Not Accept Contract Work.—The Medical Society of San Benito County has adopted a resolution that in future no member shall accept contract work from fraternal orders.

Will Endow Hospital.—Henry Miller, a cattleman of Gilroy, has announced that he will endow a hospital and sanatorium in Gilroy with $10,000, and will also donate ten acres of land for a site and furnish building material from his own quarries.

Donation for Medical Books.—Dr. W. Jarvis Barlow, chairman of the library committee of the College of Medicine of the University of Southern California, Los Angeles, has received a check for $500, to be used for the purchase of books for the library of the medical college.

Smallpox.—Smallpox is reported in the camps of the Yosemite Railroad, east of Merced. The secretary of the State Board of Health states that the disease is well scattered through the state and especially in railway camps.——Dr. Joseph J. Medros, Haywards, is ill with smallpox.

Court of Appeals Decides Against Physician.—The Court of Appeals has decided the case of B. J. Short against Dr. George K. Frink, San Francisco, in which the plaintiff sustained a compound fracture of the right leg and claimed $8,000 damages for alleged malpractice on the part of the defendant, in favor of the plaintiff, affirmed the verdict of the lower court and the award of $8,000 made by it.

To Aid Associated Charities. The following 11 members of the Pasadena branch of the Los Angeles Medical Society have offered to give their services to charitable purposes under the direction of associated charities: Drs. George E. Abbott, Alva McCoy, Fitch C. E. Mattison, Charles L. King, George Deacon, John M. Radebaugh, Arthur T. Newcomb, B. C. Atterbury, Maria Congdon, Mary E. Hagadorn, Albert B. Royal, Caroline McQuiston, Zachariah T. Malaby and Thomas J. Wilson.

Personal.—Dr. James H. Parkinson has been elected president of the Sacramento board of health, vice Dr. Thomas Ross, deceased.——Dr. David A. Beattie and family, Santa Clara, have returned from Europe.——Dr. Elliott H. Wortsey, Oakland, was thrown from a street car, fracturing his patella.——Dr. Joseph W. James has been appointed a member of the Sacramento board of health.——Dr. Harry E. Piper, Santa Cruz, has been elected secretary of the Santa Cruz Medical Society, vice Dr. Charles I. Anderson, resigned.——Dr. Sarah I. Shuey, Oakland, is seriously ill with septicemia.

Societies Meet.—At the regular annual meeting of the San Joaquin Valley Medical Association, held in Bakersfield, the following officers were elected: President, Dr. George H. Aiken, Fresno; vice-presidents, Drs. Fred P. Clark, Stockton; C. P. H. Kjaerbye, Fresno, and Charles T. Rosson, Hanford; secretary and treasurer, Dr. Dwight H. Trowbridge, Fresno; assistant secretary, Dr. John R. Walker, Fresno, and treasurer, Dr. Thomas M. Hayden, Fresno. The society voted that members who accepted less than $5 for an examination for life insurance should be fined $25 for the first offense, and for a second offense should be liable to expulsion from the society. ——On March 12 the Sacramento Society for Medical Improvement gave a banquet for Dr. Gustavus L. Simmons, in honor of the fiftieth anniversary of his graduation in medicine. On behalf of the society Dr. William E. Briggs presented Dr. Simmons with a silver loving-cup. The following officers were elected: President, Dr. Henry E. Wright; secretary and treasurer, Dr. Edwin M. Wilder, and directors, Drs. Gustavus L. Simmons, Henry L. Nichols, Wallace A. Briggs, Henry E. Wright and Edwin M. Wilder, and delegates to the state medical society, Drs. William E. Briggs and James H. Parkinson, and alternates, Drs. James A. McKee and Samuel E. Simmons.

COLORADO.

Pneumonia Epidemic.—An epidemic of pneumonia is prevalent among the mining camps around Ouray. During the last week in March 20 deaths are said to have resulted from the disease.

Will Not Accept Low Fee.—The Teller County Medical Society at its meeting, February 22, adopted resolutions setting forth that no member of the society should examine an applicant for life insurance for a fee of less than $5.

Personal.—Dr. and Mrs. Harry P. Packard will soon leave Denver for Persia, where Dr. Packard will take charge of the Mission Hospital at Teheran.——Dr. A. Mansfield Holmes, Denver, is convalescent after a sharp attack of pneumonia.—— Dr. Edwin S. Dodds, Pueblo, is ill at St. Mary's Hospital with rheumatism. ——Dr. Gerald B. Webb, Colorado Springs, has gone from London to Vienna.

Life Insurance Examination Fees.—At a meeting of the Lake County Medical Association, held in Leadville, March 15, the following resolutions were adopted and signed by every practicing physician in Lake County:

Whereas, In consideration of the time, skill and care necessary for an examination for life insurance, we deem that the fee of five ($5.00) dollars is a fair, reasonable and just charge for such examination; therefore be it

Resolved, That on and after April 1, 1906, each and every member of the Lake County Medical Association shall not make any examination for Old Line Life Insurance Companies for less than the sum of five ($5.00) dollars; and be it further

Resolved, That such Life Insurance Companies as are now paying less than five ($5.00) dollars be notified by the Secretary that on and after April 1, 1906, no regular life insurance examinations will be made by any members of this association for less than five ($5.00) dollars; and be it further

Resolved, That any member who violates this resolution shall be suspended from the association; and be it further

Resolved, That it shall be unlawful for any member of this association to consult with any physician so suspended.

GEORGIA.

State Association Meeting.—The Medical Association of Georgia will convene in Augusta for its annual session, April 18.

Sanatorium Sold.—The Halcyon Sanatorium, Atlanta, has been sold by Dr. Joses B. S. Holmes to W. B. Hamby for $46,000.

Acquitted.—Dr. W. B. Vaughn, physician of Barton County, has been acquitted of involuntary manslaughter in the case of a convict named Virgil Liddelle.

New Rule at Grady Hospital.—The board of trustees of Grady Hospital, Atlanta, has passed a resolution abolishing all money payments to internes of the hospital.

Election.—The Medical Society of Floyd County at its annual meeting held in Rome, elected the following officers: President, Dr. William J. Shaw, Rome; vice-president, Dr. J. C. Huell, and secretary-treasurer, Dr. W. L. Funkhouser.

Personal.—Dr. Everett Daniel, Moultrie, has been elected delegate to the state medical association by the Colquitt County Medical Association.——Dr. George H. Noble, Atlanta, has received from the Louisiana Purchase Exposition a commemorative diploma and medal.

Physician Fined.—Dr. Samuel G. Scoven, Macon, was fined $100, March 10, for contempt of court, the contempt lying in the fact that the physician had signed a certificate that a defendant in the City Court was ill and unable to attend court when in fact he had left the state.

Ask for Pasteur Institute.—A circular has been mailed by Dr. A. G. Fort, Lumpkin, to each member of the general assembly of Georgia and to all members of the Medical Association of Georgia, seeking to interest them in the establishment of a branch of the Pasteur Institute for the treatment of hydrophobia. The circular sets forth that during 1905 five individuals were bitten by mad dogs in Stewart County alone. Dr. Fort hopes that a bill may be passed covering this important matter.

Commencement Exercises.—The graduating exercises of the Medical Department of the University of Georgia, Augusta, were held April 2, when a class of 30 was graduated.——The fifty-first annual commencement exercises of the Atlanta College of Physicians and Surgeons were held April 2, when a class of 56 received diplomas.——The first commencement exercises of the Atlanta School of Medicine were held April 3. A class of 21 was graduated. Dr. George H. Noble read his report and Hon. Hooper Alexander delivered the annual oration.

ILLINOIS.

State Society Meeting Deferred.—The Illinois State Medical Society will meet at Springfield May 22 to 24 and not May 15 to 17, the date originally set for the meeting.

Hospital Staff Resignations.—The trustees of the Illinois Eastern Hospital for the Insane, Kankakee, on April 5 accepted the resignations of Drs. Beebe and Francis Walls.

Personal.—Dr. Theodore A. Johnson, Xenia, was murderously assaulted by Henry Baker, a would-be pensioner, whose petition Dr. Johnson could not endorse.——Dr. Samuel M. Wylie, Paxton, sailed for Lisbon, April 7.

Chicago Delegation for Lisbon.—Among the Chicago physicians who have left for Lisbon to attend the International Medical Congress are Drs. Nicholas Senn, Daniel R. Brower, Lucy Waite, Harriet C. B. Alexander, Fenton B. Turck and J. D. Hammond.

Interne Examinations.—Of the 53 physicians who passed the civil-service examination for appointment as internes in the county hospitals and Cook County Institution, Dunning, 40 will be appointed to positions within the next nine months, the first appointments being made at Cook County Hospital in June.

Chicago.

Fined for Sale of Cocain.—A. Monaco, a Clark Street druggist, has been fined $100 for selling cocain without a physician's prescription.

Matinee for Tuberculosis Dispensary.—The matinée musicale given April 5 for the benefit of the Chicago Tuberculosis Institute yielded almost $2,000 for the institution.

Petition Against Extension of Hospital.—Owners of frontage on Michigan Avenue are circulating a petition protesting against the extension of St. Luke's Hospital to that street.

Opposition to Hospital Ends.—After a strife of three years the village board of Oak Park authorized Dr. John W. Tope and a Roman Catholic sisterhood to erect a $100,000 hospital building in Wisconsin Avenue south of Madison Street.

Faculty Resignations.—The following members of the faculty of the American College of Medicine and Surgery (Medical Department of Valparaiso University), have resigned: Dr. Henry S. Tucker, dean, head professor of gynecology; Dr. Ross C. Whitman, head professor of pathology; Dr. Victor J. Baccus, head professor of surgery; Dr. Henry G. Anthony, head professor of dermatology and genitourinary diseases; Dr. Charles H. Francis, head professor of ophthalmology; Dr. Henry F. Lewis, head professor of obstetrics; Dr. J. Rawson Pennington, professor of rectal diseases; Dr. George E. Baxter, professor of pediatrics; Dr. George J. Tobias, professor of hygiene and preventive medicine; Dr. J. McDonald Scott, assistant professor of surgery; Dr. Mary O. Porter, assistant professor of obstetrics; Dr. Marion B. McDonald, assistant professor of otology; Dr. Clare S. Learned, adjunct professor of therapeutics and materia medica; Dr. Arthur N. Mackey, instructor in dermatology, and Dr. Charles D. Hulbert, instructor in dermatology.

MARYLAND.

Physician Active in Legislature.—Dr. Richard S. Hill's bill appropriating $90,000 for the construction of a great boulevard between Baltimore and Washington has passed the legislature and has received the governor's signature. Dr. Hill is a member of the House of Delegates from Prince George County. The road will be built under the direction of the state commission on highways.

Baltimore.

Smallpox.—During the week ended April 7 three cases of smallpox were reported.

Pneumonia and Pertussis. During March 149 deaths were reported from pneumonia. Whooping cough was prevalent.

Funds for Hospital.—Crusade Commandery, Knights Templar, have turned over $2,718.10 to the Hospital for Consumptives, the proceeds of a recent charity ball.

Delay in Removal of University.—The failure of the legislature to appropriate $50,000 to the Johns Hopkins University will delay indefinitely its removal to the new suburban site.

Personal.—Dr. William H. Welch has been elected an honorary member of the Gesellschaft der Aerzte of Vienna, Austria.——Dr. J. Hall Pleasants is now in Naples and will spend the spring in London.

State Appropriations.—It is said that $160,000 more was appropriated by the legislature to institutions than at its last session. It has been particularly liberal to the hospitals, the University of Maryland Hospital alone receiving $60,000. For the State Tuberculosis Sanitarium, to be founded, $100,000 was appropriated for grounds and buildings and $15,000 a year for maintenance.

Enlargement of Hospital.—The $25,000 appropriated by the legislature to the Endowood Hospital for Consumptives, in the suburbs of Baltimore, will permit the erection of additional buildings, the laying out of the 75 acres of grounds and the establishment of a country sanitarium. The benefits also can be extended to the poor. Private charity is expected to add $50,00 or more to the aid given by the state.

School Inspection.—Dr. Bosley, health commissioner, attributes very beneficial results to the medical inspection of public schools in the diminution of deafness, diphtheria and consumption. Parents all over the city are having their children treated for adenoids and enlarged tonsils as soon as the evil is pointed out to them by the inspectors. Many children were also found suffering from bad nutrition, the result of improper or insufficient food, and the attention of the charitable organizations has been called to these cases, disease thus being forestalled in many instances.

MASSACHUSETTS.

Report on Anti-Vivisection Bill.—In the legislature, March 26, the report of the committee on probate and chancery against the anti-vivsection bill was accepted without debate.

District Society Meeting.—At the meeting of the Middlesex East District Medical Society, held in Boston, March 14, the president appointed the following committee on the prevention and control of tuberculosis: Drs. George F. Daw, Reading; Richard Dutton, Wakefield; Francis E. Park, Stoneham; Ralph K. Stratton, Melrose; William H. Keleher, Woburn, and Harold A. Gale, Winchester.

Hospital Alumni.—The Massachusetts General Hospital Alumni Association was organized in Boston, March 24, 175 ex-internes being present. The following officers were elected: Dr. James C. White, Boston, president; Drs. Homer Gage, Worcester, Mass.; Thomas W. Huntington, San Francisco, and William S. Thayer, Baltimore, vice-presidents; and Dr. Fred A. Washburn, Boston, secretary.

Medical Library Association Organized.—The Springfield Medical Library Association, whose object is to promote the social and scientific interests of its members and to bring about a closer companionship among the medical men of Springfield, at its first regular meeting, March 9, elected Dr. Dudley Carleton, president; Dr. Edward M. Brown, vice-president; Dr. E. M. Cort, secretary and treasurer, and Dr. J. I. Butler, librarian.

District Nurses for Public Schools. Since last December the experiment of having nurses of the District Nursing Association, under the supervision of the Boston board of health, visit the public schools, has been tried with much success by two nurses. Some treatments are given in the school buildings, while other patients are followed to their homes and cared for there. In this Boston is following the lead of New York City, where there have been such school nurses for the last three years.

Personal. Dr. Simon J. Russell, city physician of Springfield, has resigned.——Dr. Charles H. Richardson, Pittsfield, and Dr. Franklin C. Downing, Lanesboro, returned from Europe, March 15.——Dr. Charles S. Holden has been chosen chairman, and Dr. George K. Roberts, secretary, of the Attleboro board of health.——Dr. George W. Galvin, for sixteen years surgeon and chief of the Emergency Hospital, Boston, has resigned that he may devote himself to private practice.

Dr. Alfred H. McCormack, Northampton, sailed for Europe, March 14.——Dr. Paul Thorndike, Boston, has been visiting in Milwaukee.—— Dr. Walter A. Harding has been unanimously elected president of the Everett Medical Society. ——Dr. John B. Hull has been elected physician of the Williamstown board of health.——City Physician George L. Black, Lawrence, has been removed, pending investigation of charges alleging conduct unbecoming a city official and physician.

Hospital Reports. The annual report of the Massachusetts General Hospital for 1905 shows that 5,096 patients were treated in the wards, of whom 2,023 paid for their care in whole or in part. There were 21,874 outpatients treated and 5,459 accidents. The McLean Hospital for the Insane and the Convalescent Home in Waverly are maintained by the same board of trustees. The expense for the General Hospital was $238,457, of which $92,226 was paid by patients, the net deficit being $27,133. This was somewhat reduced by the income of the McLean Hospital, where, with a total expense of $236,703, there was an income of $4,404 additional. The total deficit for the three institutions for 1905 was $23,446, as against $21,109 in 1904 and $64,000 in 1903. Gifts amounting to $415,039 have been received during the year and have allowed the renovation of the Townsend and Bigelow wards and the construction of a new building for women at Waverly, with 36 beds.——At the Cambridge Relief Hospital 1,866 patients were cared for during the year, and 3,400 visits were subsequently made at their homes.

Hospital News.—Waltham Hospital has received a donation of $5,000 from Mrs. Caroline Foster Stickney for the establishment of a free bed to be known as the Joseph Stickney free bed.——The new main building in the New England Sanitarium in the Middlesex Fells, Melrose, was dedicated February 28.——It has been decided to apply the Lemont G. Burnham fund of more than $150,000 to the building of a new wing for the Boston City Hospital, to be known as the Lemont G. Burnham ward. The addition will accommodate 30 patients.——Frank A. and Henry Day, Newton, who recently gave the Day Memorial Home for Nurses to the Framingham Hospital, have agreed to provide the entire equipment of the home.——Only $1,030 remains to be subscribed to make up the $22,000 needed to clear up the debt of the Springfield Hospital. ——Brockton Hospital has received a gift of $500 from George E. Keith to assist in paying the debt on the heating plant.——George Tracy Webster has announced that he will give $1,000 toward the erection of a suitable public hospital for Webster and Dudley in addition to the hospital site previously offered.——By the will of Charles H. Pew $5,000 is bequeathed to the Addison Gilbert Hospital, Gloucester.

Must Label and Give Contents.—The committee on public health of the Massachusetts legislature has reported in favor of the following bill:

Section 1. On every package, bottle or other receptacle holding any proprietary or patent medicine, or any proprietary or patent food preparation, which contains alcohol to an amount in excess of the amount shown to be necessary by the United States Pharmacopeia or the National Formulary as a solvent or preservative of the active constituents of the drugs contained therein, and to prevent deterioration by freezing or fermentation, shall be marked or inscribed a statement of the percentage of alcohol by volume contained therein; and the provisions of Section 19 of Chapter 75, Revised Laws, shall apply to the manner and form in which such statements shall be marked or inscribed.

Sec. 2. Every package, bottle or other receptable holding any proprietary or patent medicine or food preparation shall bear a label containing a statement of the quantity of any opium, morphin, heroin, cocain, alpha or beta eucain, or chloral hydrate contained therein, provided that the package contains more than two grains or opium, or more than one-quarter grain of morphin, or more than one-sixteenth grain of heroin, cocain, alpha or beta eucain, or more than eight grains of chloral hydrate. In one fluid ounce, or, if a solid preparation, in the avoirdupois ounce; and the provisions of Section 19, Chapter 75, Revised Laws, shall apply to the manner and form in which such statements shall be marked or inscribed.

Sec. 3. Whoever manufactures, sells or offers for sale any medicine or food preparation in violation of the provisions of the act shall be punished by a fine of not less than $5, nor more than $100.

Sec. 4. This act shall take effect on the first day of September in the year 1906.

NEW YORK.

Money for Cancer Laboratory.—The State Cancer Laboratory, Buffalo, will receive this year $21,000 from the state, $3,000 of which will be devoted to meet the deficit of last year.

The Mosquito Bill. A bill which seeks to exterminate the mosquito on Staten Island and has been reported favorably in the assembly, authorizes local boards of health to remove swamps which are breeding places for the insects.

Much Scarlet Fever. Since October last there have been 411 cases of scarlet fever in Utica, and 123 were under observation March 28. The board of health claims that this large amount of scarlet fever is due to the failure to maintain quarantine

Thatcher Not Guilty.—Dr. Edward P. Thatcher, Newark, charged with manslaughter in the first degree, in having caused the death of Grace Tyler, a Macedon girl, through the performance of a criminal operation, was found not guilty, March 28.

Medical Club Election.—The Utica Medical Club held its annual meeting March 15, at which the following officers were elected: President, Dr. Lewis B. Armsbry; vice-president, Dr. Andrew Sloan; secretary and treasurer, Dr. W. S. Nelson, and trustees, Drs. William J. Schuyler, Edwin Van D. Gazzami and Morris J. Davies.

Health Officers Organized.—Ontario County health officers met at Canandaigua recently and formed a society for organized effort on lines of health as regards the various villages and towns of the county. Dr. Orlando J. Hallenbeck, Canandaigua, was elected president; Dr. Duncan S. Allen, Seneca, vice-president, and Dr. Daniel A. Eiseline, Shortsville, secretary.

February Vital Statistics.—There were 11,351 deaths during February, or 44 less than the corresponding month of last year. The mortality increased from 382 deaths daily to 400. Infant mortality increased, due to the increase in measles and diphtheria. Consumption and cerebrospinal meningitis increased while pneumonia decreased. The mortality from measles was double that of last year. Pneumonia caused 15 per cent. of the total mortality, and 100 fewer deaths than in last February. The usual influenza epidemic was in progress, but few deaths were attributed to it.

Society Changes Name.—The Practitioners' Medical Society, Rochester, has changed its name to the Blackwell Medical Society, in honor of the first woman medical graduate. The following officers were elected: Honorary president, Dr. Sarah R. Adamson Dolley; president, Dr. Marion Craig Potter; vice-president, Dr. Evelyn Baldwin; secretary, Dr. Emily A. Cady Harris; treasurer, Dr. Helen De Witt Justin, and councilors, Drs. Sarah R. Adamson Dolley, Evelyn P. Ballantine and M. Louise Hurrell. The society has also revised its constitution to make it conform to the requirements of the American Medical Association.

Personal.—Dr. William Mabon, Albany, president of the state lunacy commission, is about to resign and take charge of the Manhattan State Hospital, Ward's Island, New York City. ——Dr. Richard L. Stoddard, Rochester, fell March 8, fracturing his right leg near the ankle.——Dr. Benjamin C. Wakely, Hornellsville, has been appointed coroner of Steuben County, vice Dr. Reuben F. Parkhill, Howard, deceased.——Dr. Carmi C. Thayer, physician of the Clifton Springs Sanatorium for 25 years, has resigned.——Dr. J. Nelson F. Elliott has been made chief medical inspector of schools of Syracuse.——Dr. Arthur W. Elting, Albany, was recently operated on at Johns Hopkins Hospital, Baltimore, for an infected finger.——Dr. Durrand R. Kinloch has been appointed a member of the surgical staff of the Utica General Hospital, vice Dr. M. O. Terry.

New York City.

Bail Forfeited.—Bail of $1,500 given by "Dr." William Crutchy, charged with maintaining an establishment for illegal medical practice, was ordered forfeited March 24, as the defendant failed to appear.

Acquitted.—Dr. Benjamin S. Van Zile, Brooklyn, charged with manslaughter in the first degree, in having, as alleged, caused the death of Mrs. Celia Applebaum by criminal operation, was acquitted March 27.

Under the Knife.—Dr. J. M. Pilcher was operated on for appendicitis in Bellevue Hospital by his father and brother, March 25.——Dr. Moses I. Jackson, formerly borough coroner, was operated on March 27 for suppuration at the base of the brain.

Delegates to Lisbon Conference.—Prof. A. E. MacDonald was appointed to represent the New York University medical faculty at the International Medical Congress, and Dr. Charles W. Allen has been appointed delegate from the American Dermatological Association.

Malignant and Non-Malignant Growths.—On April 18 Dr. William S. Bainbridge wil give a clinical lecture on malignant and non-malignant growths in the outpatients' hall of the New York Skin and Cancer Hospital, at 4:15 p. m. The medical profession is invited to be present.

Smallpox Aboard Ship.—The steamship *Würzburg* of the North German Lloyd Line, which arrived on April 4, was detained at quarantine because of the discovery of a case of smallpox among the cabin passengers. Before the ship was allowed to dock 1,003 vaccinations were made.

Acknowledge Donation.—The trustees of the Sydenham Hospital, at a dinner April 2, presented Isaac Guggenheim a silver loving-cup in recognition of his recent gift of $250,000 to that institution. Mr. Guggenheim has promised to build a new home for the hospital when its patronage warrants the outlay.

Field Hospital Planned.—An important step for the benefit of the medical department of the National Guard of New York is the formation of the field hospital to be attached to headquarters. The hospital will be under command of Dr. William S. Terriberry, Twelfth Infantry, New York City, assisted by Drs. William E. Butler, Brooklyn, Twenty-third Infantry, and Thomas A. Neal, New York City, late Seventh Infantry.

Contagious Diseases.—For the week ended March 31, 1,941 cases of measles were reported, with 62 deaths; 387 cases of tuberculosis, with 198 deaths; 357 cases of diphtheria, with 52 deaths; 220 cases of scarlet fever, with 11 deaths; 28 cases of pertussis, with 4 deaths; 32 cases of cerebrospinal meningitis, with 19 deaths; 20 cases of typhoid fever, with 8 deaths; 166 cases of varicella, and 2 cases of smallpox, a total of 3,153 cases and 354 deaths.

Examination for Internes.—A competitive examination will be held at Lincoln Hospital, East One Hundred and Forty-first Street and Southern Boulevard, April 17 and 18, to fill four positions on the house staff. The written examination on anatomy, surgery, medicine, obstetrics and gynecology will be held April 17 at 2:30 p. m., and the oral and practical examination at the same hour on the following day. Application for permission to take this examination should be made by letter to Dr. Benjamin F. Tilton, secretary of the medical board, 121 East Thirty-eighth Street.

Lower Death Rate.—The report of the board of health for the first quarter of 1906 shows a lower death rate than for any previous corresponding period, though the death rate from measles and diphtheria is higher than ever before. This is accounted for by a remarkable decrease in the number of deaths from scarlet fever and cerebrospinal meningitis. In 1903 there were only about 10,000 cases of measles, scarlet fever, diphtheria and spinal meningitis, with a total death rate from all causes of 19.48 per 1,000. With 30,000 cases of the diseases just mentioned for the period there was a death rate of 19.47 per 1,000.

Hospital Notes.—At the annual meeting of the Metropolitan Hospital and Dispensary, March 1, it was announced that $5,000 had been added to the hospital funds in ten donations of $500 each.——The German Hospital Society of Brooklyn has received a donation of $10,000 from Peter Wyckoff, Williamsburg.——The new St. Francis Hospital on the Bronx was dedicated with formal ceremony by Archbishop Farley, March 1. The hospital has cost more than $800,000, and will have accommodations for about 600 patients.——The new Samaritan Hospital and Dispensary in Brooklyn was formally opened March 7. It has accommodations for 25 patients.

Prevents Tuberculosis Clinic.—A judgment has been granted restraining the health department from establishing a tuberculosis clinic in Henry Street, Brooklyn. The justice who granted this decree declared that the signs placed about the city were not effective in causing the people to obey the anti-spitting ordinance. Several doctors testified that the spitting of the patients going to and coming from the clinic would make the neighborhood unhealthful. Dr. Darlington testified that the streets and sidewalks about the clinic in Manhattan were free from sputum and that he had never seen a consumptive under treatment spit in the streets.

Personal.—Dr. Amelia W. Lines, Brooklyn, fell and dislocated her hip March 8, and is confined to her bed.——Dr. L. Bolton Bangs was the guest of honor at a dinner given by the Rochester Pathological Society, March 9, after which he gave an address on "Prostatectomy."——Dr. Francis J. Quinlan, president of the Catholic Society, has been selected to receive the Laetere medal given each year by the University of Notre Dame, South Bend, Ind., to the Catholic most distinguished in good works.——The home of Dr. Simon Baruch was deluged by water from a broken main, causing damage to the extent of several hundred dollars.——Dr. William M. Polk has been elected president of the Tennessee Society, recently organized in this city.——Dr. Carl Beck was the guest of honor at the dinner of the German Students' Society on March 24. A silver vase was presented to Dr. Beck, who was the originator of this society.

Otisville Tuberculosis Sanatorium.—The purchase of land for the city farm in Orange County has been completed. The altitude of this land is from 850 to 1,400 feet. The board of

estimate has given the health department $150,000 of city bonds for carrying on the work, $20,000 of which has been released for immediate use. With this sum the buildings now standing will be put into proper condition and a number of portable houses containing three rooms, each 10x10 feet, will be installed for immediate use. During the coming summer the number of consumptives received will be limited to 100, but during the warm weather the construction of substantial buildings will be pushed so that in a short time the work can be carried along on a much larger scale.

OHIO.

Epidemic Diseases.—Diphtheria is epidemic in Millersburg, the public schools have been closed and public meetings interdicted.——Typhoid fever is reported to be epidemic in Barnerton.

Not Guilty. Dr. A. C. White, Toledo, charged with practicing medicine without having registered, and prosecuted by the state medical board, was found "not guilty" by a jury in the police court, March 28.

Hospital Association Formed.—The Union Hospital Association of New Philadelphia and Canal Dover was formed at the latter place, March 21. A modern hospital will be built which will accommodate 15 patients.

Sentenced to be Hanged.—Dr. Oliver C. Haugh, accused of the murder of his father, mother and brother at their home, near Chambersburg, Nov. 4. 1905, was found guilty of murder in the first degree and sentenced to be hanged.

Close Cheap Lodging Houses.—The Cincinnati board of health, on the recommendation of the city health officer, has passed a resolution ordering the lodging houses on the river front to discontinue the five-cent rooms, which are reported to be unsanitary in the highest degree.

Loses Damage Suit.—In the suit of Gaylord Leiey, Mansfield, against Dr. W. Perry Bennett, Crestline, for $10,000 damages for alleged malpractice, which was filed more than a year ago, and under which after the death of Dr. Bennett his wife as administratrix was made defendant, the jury returned a verdict, March 13, for the defendant, vindicating the action of Dr. Bennett.

Contract Practice.—The regular meeting of the Cincinnati Academy of Medicine, March 26, was, by special arrangement, devoted to the discussion of contract practice. The members were almost a unit in condemning this system in medicine and resolutions were adopted which will practically exclude all physicians who are engaged in contract work from becoming or remaining members of the academy. The fiscal year of the academy was closed a week ago with probably the most satisfactory showing in its history. Fully half a hundred members were added to the roll and many papers showing laborious and painstaking research work, were read.

Commend and Condemn.—The following resolutions were passed at a recent meeting of the Cincinnati Academy of Medicine:

Resolved, That the Cincinnati Academy of Medicine commend our Senator Espy and others for work done in behalf of the medical profession of the State of Ohio on the Christian Science Amendment recently lost in our state senate. Be it further

Resolved, That the Cincinnati Academy of Medicine hereby declares Senators Howe, Schmidt and Williams of Cuyahoga County; Lauman, of Scioto County; Ross, of Washington County; Duvall, of Jefferson County; Hafner, Harper and Hunt, of Hamilton County; Pollock, of Stark County; and Mayor Tom L. Johnson, of Cleveland, who urged the passage of the Christian Science Amendment, as persons unworthy of confidence in matters concerning public health. And be it further

Resolved, That a copy of these resolutions be published in the medical journals of the state.

State Medical Association.—The annual meeting of the Ohio State Medical Association will be held at Canton, May 9, 10 and 11. The pediatric, dermatologic and ophthalmologic sections of the society hold their meetings on May 8 in the same place, and the Ohio State Board of Pension Examiners meets on May 10. The meeting halls, committee rooms and exhibit halls will be under one roof in the new municipal auditorium, recently erected by the citizens of Canton at a cost of $180,000, with an auditorium seating nearly 5,000 people. Canton is easily reached, as three trunk lines run through the city and three interurban trolley systems connect with various parts of the state. The oration on medicine will be delivered by Dr. John C. Hemmeter, Baltimore, on "Intestinal Autointoxication," and the oration on surgery will be given by Dr. Harvey C. Gaylord, Buffalo, N. Y., on "Further Research on Cancer." The committee of arrangements is making strenuous efforts for the entertainment of its guests that this may be not only a memorable meeting in a scientific way, but also from a social standpoint.

Smoke Abatement.—Under the able and energetic presidency of Dr. C. A. L. Reed, the Smoke Abatement League of Hamilton County has been formally launched. The plans of the committee are far-reaching. The league has been incorporated, and will be sustained by voluntary contribution, of which there is ample promise. It intends to secure, as far as possible, the voluntary co-operation of the proprietors of offensive stacks in abating the smoke nuisance; to secure the passage of laws, state and municipal, which, when enforced, will protect members of the league and the city at large against the damage now experienced from smoke; to receive confidential complaints about smoke from members; place the same in the hands of inspectors employed by the league; and whenever a case is made out, secure the abatement by amicable means, or, in the event of failure, secure the prosecution of offenders either by the city authorities or by the attorneys of the league; and to conduct scientific investigation concerning the actual prevalence of smoke; its influence on the property and health of the people; and the actual merits of the various means for the prevention of smoke.

Personal.—Dr. Harry J. March, Canton, will leave for Europe the latter part of this month.——Dr. Hiram B. Ormsby, Cleveland, slipped and fell, March 2, spraining his ankle.——Dr. James E. Torrence, Hamilton, was nearly asphyxiated by coal gas from a defective furnace, March 26.——Dr. Eugene B. Harrison, Napoleon, was operated on, March 26, in Toledo, for prostatic enlargement and vesical calculus.——Dr. John E. Stemler has resigned as receiving physician of the City Hospital, Cincinnati, to take effect May 1.——Dr. John C. Larkin, Hillsboro, has returned after postgraduate work in Chicago. ——Dr. Mary E. Tracy, Cincinnati, has been elected a district physician.——Dr. S. Munson Hart, Marietta, is seriously ill with pneumonia.——Dr. A. Per Lee Pease, Massillon, sailed for England, March 24.——Dr. Leon B. Santee, Marlboro, has been elected delegate from the Stark County Medical Society to the state medical society, and Dr. William C. Steele, New Berlin, alternate.——Dr. Furnam E. Perry, Jefferson, has been made president of the Ashtabula County Medical Society on account of the resignation of Dr. Addison W. Hopkins, and Dr. Fred D. Snyder, Ashtabula, has been elected vice-president. ——Barberton Medical Association has been organized with Dr. William A. Mansfield, president, and Dr. Harry S. Davidson, secretary and treasurer.

PENNSYLVANIA.

Philadelphia.

Advisory Board of Anatomists Meet.—The annual meeting of the advisory board of anatomists of the Wistar Institute of Anatomy and Biology will be held on April 16 and 17 at the institute.

Reception to Dr. Sykes.—On March 31 a farewell reception was tendered Dr. Henry Sykes, who for 15 years was superintendent of the Episcopal Hospital and was appointed to the position of medical superintendent of Blockley, April 1. Dr. Sykes was presented with a beautiful gold watch and chain by Dr. Thomas R. Neilson on behalf of the physicians, nurses and employés of the Episcopal Hospital.

Bubonic Plague.—It is reported by special telegram on April 9 that four cases of bubonic plague occurred among the crew of the British steamship *Burnsfield*, from Bombay. The patients were detained at Reedy Island quarantine station and the cases have been pronounced bubonic plague after investigation by officers of the United States Public Health and Marine-Hospital Service and an expert from the bacteriologic laboratory in Washington.

Divide Chair of Anatomy.—The chair of anatomy in Jefferson Medical College, made vacant by the death of Dr. William S. Forbes, has been divided. Dr. Edward Anthony Spitzka, New York City, a son of Dr. Edward C. Spitzka, a fellow of the College of Physicians and Surgeons in the City of New York, who has devoted much study to the anatomy of the brain, has been appointed professor of general anatomy, and Dr. John McClellan, a grandson of the founder of Jefferson Medical College, has been appointed professor of applied anatomy. Dr. McClellan established the Pennsylvania School of Anatomy in Philadelphia Hospital 26 years ago, and for many years has been professor of anatomy in the Academy of Fine Arts.

Health Report.—The total number of deaths reported for the week aggregated 625, the same as that reported for the previous week. The principal causes of death were: Typhoid fever, 31; measles, 7; cancer, 21; whooping cough, 6; diphtheria, 10; consumption, 96; paralysis, 19; heart disease, 58; acute respiratory disease 120; enteritis, 18; Bright's disease,

42; appendicitis, 3; accidents, 22, and marasmus, 6. There were 320 cases of contagious disease reported, with 43 deaths, as compared with 365 cases and 45 deaths for the previous week. Typhoid fever is still prevalent, there being reported 230 cases, with 31 deaths, as compared with 225 cases and 33 deaths in the preceding week. Measles is still prevalent throughout the city and in epidemic form. The number of new cases reported for the week aggregated 519, as compared with 406 reported last week.

SOUTH DAKOTA.

Will Establish Hospital.—Mrs. H. G. Peterson proposes to establish a hospital and sanitarium in Canton, and will agree to put in $3,000, provided the citizens of Canton will raise $1,000 additional.

Personal.—Dr. Anna Baker, Deadwood, has located in Denver. ——Dr. A. J. Buffalos, Alexandria, has moved to Mitchell. On March 23 Dr. Buffalos was so unfortunate as to slip on an icy pavement in Mitchell, injuring his hip and elbow.

Insanity Discussed.—At the annual meeting of the Southern South Dakota Medical Society, held at the State Hospital for the Insane, Yankton, March 27, the superintendents of the state hospitals at St. Peter, Minn., and Cherokee, Iowa, were present, and delivered addresses on the care of the insane.

Society Meetings.—At the annual meeting of the Black Hills Medical Association, held in Deadwood, the following officers were elected: Dr. C. W. Hargens, Hot Springs, president; Dr. G. Hayward Coburn, Deadwood, vice-president; Dr. Felix E. Ashcroft, Deadwood, secretary; Dr. Frank S. Howe, Deadwood, treasurer; Drs. G. Hayward Coburn, and Lyman F. Babcock, Deadwood, and Herman S. Judd, Lead, censors, and Dr. John W. Freeman, Lead, delegate to the state medical association. ——At the annual meeting of the Aberdeen District Medical Society the following officers were elected: Dr. John R. Thompson, Northville, president; Dr. Charles E. McCauley, Aberdeen, vice-president; Dr. E. Jay Clemons, Aberdeen, secretary, and Elmer O. Miller, Aberdeen, treasurer.

VERMONT.

New Hospital.—Dr. Edward R. Lynch has purchased a house in Brattleboro which will be opened about April 15 as a private hospital, and will accommodate about 15 patients.

Opposed Contract Service.—All the physicians of Brattleboro have signed an agreement not to perform any medical or surgical services for the town or village of Brattleboro, or for any town or village adjacent thereto, or for any corporation or association, public or private, for a less price than the regular rates charged private individuals.

Alumni Meet.—The Connecticut Valley Alumni Association of the Medical Department of the University of Vermont held its second annual meeting in Springfield, Mass., March 22. The following officers were elected: President, Dr. Walter A. Smith; vice-president, Dr. Charles J. Downey, and secretary and treasurer, Dr. Vincent J. Irwin, all of Springfield.

Elect Sanatorium Officers.—The directors of the Vermont Sanatorium met at Proctor, February 20, and decided to have plans drawn for the new sanatorium to be erected at Pittsford, and elected the following officers: President, F. C. Partridge, Proctor; vice-president, F. C. Butterfield, Derby Line; treasurer, Miss Emily B. Proctor, Proctor; secretary, Dr. William N. Bryant, Ludlow, and executive committee, Dr. Charles S. Caverly, Rutland, and Messrs. D. D. Burditt, Pittsford; Olin Merrill, Enosburgh Falls, and Redfield Proctor, Jr., Proctor.

GENERAL.

Typhus Fever in Mexico.—It is reported that the typhus fever situation in Mexico has greatly improved and will soon be completely under control.

United States Naval Medical School Graduating Exercises. —The graduating exercises of this institution were held March 31. Secretary Bonaparte of the Navy presented the diplomas to the members of the graduating class.

Laryngologists to Meet.—The twelfth annual meeting of the American Laryngological, Rhinological and Otological Society will be held under the presidency of Dr. James E. Logan, Kansas City, Mo., June 11-13, 1906. A number of prizes of $100 each for essays are offered to be competed for by members of the society. Further particulars may be obtained from Dr. Wendell C. Phillips, secretary, 40 West Forty-seventh Street, New York City.

Hospital Internes Wanted.—Two medical internes are wanted for the Government Hospital for the Insane, Washington, D. C., and for similar positions when vacancies occur, and an examination will be held by the United States Civil Service Commission at the various usual cities throughout the United States, June 6 and 7, 1906. This examination is open to all citizens aged 20 or over who are graduates of reputable medical colleges. Further particulars may be had from the commission at Washington or from the secretary of the board at any regular civil service examination point.

Caution About an Agent.—A Mr. S. Josephs, who was for some months in the employ of the American Medical Association in the capacity of a solicitor of subscriptions for THE JOURNAL and the "American Medical Directory," was dismissed from our employ, but he continues to solicit orders and to make collections in spite of not having any up-to-date letter of authorization. We have called attention to the fact that physicians should not pay money to any one claiming to represent the Association unless he presents an official letter of authority covering the time of making the solicitation.

National Quarantine Bill Passed.—The national quarantine bill was passed by the House April 3. The bill places the control of all quarantine stations, grounds and anchorages under the Secretary of the Treasury, and directs that he shall select suitable places for them and establish the same at such points on or near the seacoast of the United States and on the Mexican border, in order to prevent the introduction of yellow fever into the United States. The bill further gives the secretary the right to establish a quarantine station at the Dry Tortugas Islands and at such other points at or near seacoasts—not to exceed four in the aggregate—as he deems necessary.

CANADA.

Health of Toronto. Toronto was never so free from contagion as in March. There were but four patients in the smallpox hospital. Of diphtheria there were only 52 cases; scarlet fever, 26; typhoid fever, 10. Ninety infants died in Toronto in March out of a total of 380 deaths.

Hospital News.—In Winnipeg General Hospital 348 patients were treated during the week ending March 31; 98 were treated in the outdoor department.——Efforts are being made in Winnipeg to collect $50,000 to establish a tuberculosis sanatorium. About $1,500 has been collected, and it is proposed to ask the different municipalities in Manitoba for $25,000. The balance will then be raised by private subscription.——During March 259 patients were admitted to the wards of Montreal General Hospital, and 238 were discharged. There were 19 deaths. The outdoor consultations numbered 4,318.——Mr. David Russell has donated $1,000 to the Home for Incurables, St. John, N. B.——The British Columbia government has included in its estimates this year an item of $5,000 for the establishment of a tuberculosis sanatorium for that province.——The Toronto Western Hospital has erected a new building containing 14 wards for private patients.

The "Patent-Medicine" Question Before the Ontario Legislature.—Mr. A. C. Pratt, one of the members of the Ontario legislature, has a bill before that body which seeks to regulate the manufacture and sale of "patent" and proprietary medicines. At present it does not appear that it will pass its second reading, as when it came up for that act the premier reminded the sponsor thereof that it was out of order; that any such measure must emanate from a government source and not from a private member. The bill seeks to have marked as poisons all preparations containing more than 6 per cent. of alcohol, or more than one-twentieth of 1 per cent. of morphin, heroin, cocain, or any quantity, however small, of a long list of drugs as arsenic, strychnin, prussic acid, chloral, etc. With an unanimity bordering on collusion the public press states that there is no demand for any such regulating legislation, considering it more in the light of "confiscating" legislation. The introduction of the subject into practical politics, however, has borne some fruit, as an acknowledgment is made by the press that there is no doubt that there are advertisements in the pages of newspapers which ought to be suppressed; and some papers call for a federal act to provide for frequent analysis from time to time of all "patent medicines," so that the people may know from an official and responsible source what these contain.

Toronto University and Medical Education.—A few months ago the government of Ontario appointed a royal commission to consider the best method of governing and administering the affairs of the University of Toronto. The chairman of this commission was Mr. J. W. Flavelle, who is also chairman of the board of trustees of the Toronto General Hospital. The chancellor of the university, Chief Justice Sir William Meredith and Prof. Goldwin Smith also acted on this commission.

Their report has just been handed to the government; and so far as it refers to medical matters it is of some interest. The commissioners recommend that the faculty of medicine be put on the same relation to the university as all the other faculties. It is proposed also that the president of the university be ex-officio a member of the faculty of medicine, so that as all appointments in all departments are recommended hereafter to be made on his recommendation, he will be in a better position to confer with those of the medical faculty best qualified to advise him. The subject of the medical education of women was also dealt with in the report, but that matter had already been considered and settled by the faculty of medicine and the senate of the university. It is understood that the Ontario Medical College for Women will shortly amalgamate with the medical faculty of the Toronto University; but, at any rate now, the aforesaid medical faculty is prepared to register women students and to make whatever arrangements are deemed necessary for their instruction. It may be mentioned in this connection also that it is recommended that a faculty of veterinary science be created in connection with the university.

FOREIGN.

Reduction in Number of Physicians Applying in Germany for License to Practice.—Only 725 licenses (Approbationen) were granted in the fiscal year 1904-5 in the German empire. This is a falling off of 31 per cent. from the 1,057 registered in 1903-4.

Koranyi Prize.—On the occasion of his fiftieth professional anniversary, Prof. A. v. Koranyi of Budapest founded a prize, the income of nearly $2,000. It is to be awarded in May for the first time. The subject for competition is improved methods of treating tuberculosis.

The International Medical Congress of 1909.—It is reported that the Hungarian government authorized its delegates to the impending International Medical Congress, at Lisbon, to invite the next congress to convene at Budapest. The government has already appropriated $25,000 for the purpose, and the city has voted an equal sum.

Geneva Conference.—Early in 1903 the federal council invited the various governments to send delegates to co-operate in the revision of the Geneva convention adopted in 1864. It is now out of date. The outbreak of the Russo-Japanese War put an end to the project of revision for the time being. It has again been revived, and the date of June 11 appointed for the gathering of delegates from the various nations to confer in regard to the humanitarian aspect of war.

Apotheosis of the Cystoscope.—The recent death of Max Nitze, the inventor of the cystoscope, suggested an exposition of the cystoscope and all subjects connected therewith, as a worthy memorial to him. The exhibit was held at Berlin in the new Empress Friedrich House, where the exposition was opened with memorial addresses. The *British Medical Journal* in its last issue devotes much space to an article with colored plates, based on data learned with the cystoscope.

Memorial to Nothnagel.—A statue of the late Professor Nothnagel of Vienna is to be erected in the arcades of the university, and a fund is to be endowed for an annual souvenir address by some scientist of international fame on the anniversary of his birth or death, to be delivered in the clinic where Nothnagel worked for so many years. Those wishing to contribute to the fund are requested to send to Dr. N. v. Jagic, assistant at the first medical clinic, Allgemeines Hospital, Vienna IX, 3, Austria.

Koch on Life in the Tropics. Before returning to Africa last month Robert Koch delivered an address on the medical aspect of colonization of German East Africa. He regards malaria as the greatest danger for the would-be colonist, although certain regions are free from it. He is convinced that, with quinin, it can be successfuly warded off. Relapsing fever is the next danger, but this can be avoided by keeping away from the shelters on the caravan routes and from the houses of the natives. Typhoid, diphtheria, smallpox, leprosy, ankylostomiasis and sunstroke are all rare. Dysentery plays but a subordinate rôle, and the prospects of keeping sleeping sickness away are good. There is no tuberculosis. The climatic conditions as the ground rises inland are like those of southern Europe. The sanitary measures hitherto undertaken have proved successful and others will follow in time.

Abuse and Homage for Professor Neisser.—Professor Neisser of Breslau, discoverer of the gonococcus, and a leader in syphilology, president of the Society for Prophylaxis of Venereal Disease, medical privy councilor, etc., recently came to Stettin to deliver by request an address on "Marriage and Venereal Disease." He is of Jewish descent, and acquired some notoriety a few years ago on account of alleged inoculation of a patient with syphilis. When he appeared to deliver his address a crowd began to hoot and denounce him, so that he was obliged to retire. The medical profession of the town called a special meeting, where resolutions were adopted couched in the most complimentary terms, deploring the occurrence. Neisser has not been home very long from his year of research in Java on inoculation of monkeys with syphilis. The complimentary testimonial from the Stettin physicians was signed by more than ninety names.

Damages for Slander of a Physician.—The wife of a Berlin merchant was recently fined 600 marks, about $150, for defaming a physician. He had been called to her child, who was suffering from a middle ear affection, with whooping cough prevalent in the neighborhood. The mother summoned soon after an ear specialist and a leading pediatrist in consultation, and they ordered a few further measures to supplement those commenced by the attending physician. The mother afterward went around telling her friends that the consultants were disgusted at the treatment the child had been receiving and remarked that it was incredible how a physician could have made such a mistaken diagnosis and given such orders. The physician brought suit for slander and proved that the consultants had said nothing of the kind, and that his treatment had been according to the rules of the art in every respect. The judge censured the defendant as guilty of serious defamation without any basis, and imposed the highest penalty in his power.

International Association of the Medical Press.—The *Berliner klin. Wochft.* for March 26 gives the details of the approaching congress of the International Association of the Medical Press. It convenes at Lisbon two days before the International Medical Congress opens its doors. This is the second congress of the association, and for the first time a year-book will be distributed among the members. It contains the names and date of founding, with other particulars, in respect to all the medical journals that belong to the association. The subjects appointed for discussion are "Protection of Literary Property in the Medical Press"; the "Medical and Pharmaceutical Gratuitous Journal"; the organization of a permanent central bureau for the international congresses, and the right of the members of the International Association of the Medical Press to be accepted as members of the international medical congresses without further payment of dues. The present president of the association is Professor Cortezo of Madrid, one of the editors of the *Siglo Medico*. The general secretary of the association is Dr. Blondel of Paris, who is at the head of the Bureau of Scientific Information at the Sorbonne, 103 boulevard Haussmann, Paris.

Correspondence

A Better Treatment of Pneumonia Wanted—The "Galbraith Quinin-Iron Method."

OMAHA, NEB., April 3, 1906.

To the Editor:—Recently, after having a chill and feeling badly I wondered, should my case develop into a pneumonia, whether my physician would give me the best chance to live by employing the modern treatment indicated in your recent editorial. It has been disappointing not to have learned more about the "Galbraith quinin-iron treatment" of pneumonia from those in a position to try and better their statistics. The death rate from acute lobar pneumonia is high, and hospital statistics during many years show no great improvement in its treatment. Every one acquainted with Dr. Galbraith knows him as an experienced and exceedingly practical "all-around" man; his diagnosis in a case or series of cases of pneumonia can be as absolutely relied on as that of any physician, wherever located. It is this knowledge of the man that leads me to have faith in what he writes about quinin and iron in the treatment of pneumonia, and the belief that by this treatment better results may be obtained.

The symptomatic treatment of pneumonia, mostly recommended by text-book authorities and hospital physicians, whose mortality statistics in this disease average between 20 and 40 per cent., needs a substitute. What is wanted is the lowering of the death rate, and if a method of treatment will bring about this much-desired end, let those in a position to give the Galbraith treatment a test in a series of cases do so.

It is immaterial if years ago a writer in Ziemssen's Encyclopedia did recommend quinin in enormous doses in the treatment of pneumonia. What if Drs. A. or B. have after some fashion tried it? When I was a student quinin in moderate doses was a treatment of pneumonia, the lancet was in disrepute; drugs were little relied on as specifics.

Alonzo Clark told us that "if the good Lord would forgive him he would never again pack the chest of a pneumonia patient with ice," he having lost eight consecutive cases in Bellevue Hospital by this practice. Several years after graduation I observed the practice in Vienna of applying cold cloths to the chest and giving a little red wine internally. For more than 20 years since that time I have noted that some physicians use ice locally; others, blisters, the flaxseed poultice, the Clark oil-silk jacket, etc. Internally have been administered alcohol, the coal-tar products, strychnin, digitalis, salicylate of soda and creosotal. All have kept the mortality at about the time-honored standard of from 10 to 40 per cent., in accordance with the age of the patient, his natural resistance and the character of the prevalent severity of the pneumonia.

Galbraith tells the indications for the size of the initial and subsequent doses of quinin, and insists likewise on the systematic administration of the tincture of chlorid of iron in conjunction with the quinin.

I hope the profession will give Galbraith's treatment a fair trial and report results. J. E. Summers, Jr.

Text-Books in Korean.

Philadelphia, April 2, 1906.

To the Editor:—Into how many separate languages "Gray's Anatomy" has been translated perhaps only its publishers can tell us. Another tongue has just been added to the list, owing to the painstaking labors of Dr. O. R. Avison of Seoul, Korea, formerly of the teaching force of the Toronto Medical College. The volume he so produced he has made available to ambitious young Koreans by causing a certain number of copies to be mimeographed. He has done the same with a number of other elementary text-books; but the result is, of course, far inferior to printing and the supply adequate for only a very limited demand.

The young men for whose especial use this work is being done are under instruction in a number of hospitals in different cities in Korea. Left to themselves they would have been still following the barbarous methods in vogue among practitioners of the native school, compounding prescriptions of a dozen or two ingredients, unsavory and incompatible, prohibiting nourishment, while administering drastic potions, searing regions tender with inflammation, plunging the hot needle into brain or abdomen an unknown depth, and aggravating diseased joint conditions until fetid suppuration destroys the limb. The substitution of aseptic surgical methods and of a rational therapeusis for such procedures is the beneficent work of mission hospitals; and the training of a generation of enlightened physicians is one of the inseparable accompaniments. Problems are many in connection with such an educational need, among them that of text-books.

The outlook before a young graduate in medicine in Korea renders more than usually delicate the question of the measures that may wisely be adopted in his education. The scale of fees reasonably to be counted on from most of his patients is not such as to warrant a luxurious style of life. Yet sleeping and sitting on the floor, a diet of rice, pickled cabbage, red pepper sauce and dried fish, and dressing in the flowing garb of the Korean, accord little, on the other hand, with surgical or even with personal cleanliness. To train a young man abroad is practically to train him to such a disgust with his own people that he becomes denationalized; to train him among them calls for the creation of much new material.

The members of the committee who are interesting themselves in this problem stand ready to receive and to forward contributions toward a fund for the publication of medical text-books in Korean. It seems certainly a fair proposition to ask the profession in America to provide the books from which these aspirants across the water may learn the correct principles of the great art of healing.

H. Augustus Wilson, M.D., 1611 Spruce Street, Philadelphia.
W. W. Keen, M.D., 1729 Chestnut Street, Philadelphia.
Robert W. Lovett, M.D., 234 Marlborough Street, Boston.
H. P. Loomis, M.D., 58 East Thirty-fourth Street, New York.

Palatable Castor Oil.

Chicago, March 15, 1906.

To the Editor:—Under a trade-mark name, a pleasant and palatable preparation of castor oil is being distributed among physicians. A small vial containing a sample of a sweetened, tasteless, palatable and non-acrid (I am not aware that castor oil possesses acrid properties) castor oil is sent to the practitioner, and this, in a few weeks, is followed by a circular calling attention to the sample and expatiating on the merits of this elegant and improved pharmaceutical preparation. According to this circular, this preparation is composed of nearly pure castor oil, consisting of 99.99 per cent. of absolute castor oil, the remaining .01 per cent. being aromatic corrigents and sweetening adjuvants. Even sepsis appears to be a factor in ordinary castor oil, as this special preparation is rendered "aseptic." Castor oil is and always will be *par excellence*, the laxative of choice of the laity. The physician is often called on to prescribe castor oil, and patients invariably ask him to have it made as nearly tasteless as possible. I have for years prescribed a sweet, pleasant and palatable form of castor oil, one which answers all the requirements of an elegant pharmaceutical preparation. It consists of nearly pure castor oil, being about 99.98 per cent. castor oil, the remaining .02 per cent consisting of a sweetening principle and a carminative adjuvant. The formula is as follows:

R.	Saccharini	gr. ii	12
	Olei menthæ piperitæ	gtt. v	30
	Alcoholis q. s. M. fiat sol. et adde:		
	Olei ricini	℥viii	240

Sig.: Dose same as castor oil.

John Ritter, M.D., Ph.G.

"Ambulatory" Smallpox.

Somerville, Mass., March 16, 1906.

To the Editor:—I recently had a case of smallpox and the history of its inception may be of interest to some readers of The Journal.

The case presents no features of especial clinical significance, but the wide range of the victim's travels while in the active stages of the disease, and the possibility of transmission in many localities lead me to report what is mainly the patient's story of the early days of his illness.

The patient is a young man of 20, a member of a musical organization which left Boston, February 4, for a trip through the southern states. He was not in good physical condition when he left, as he had had a busy season and was thoroughly tired out. On February 21, at Meridian, Miss., he had an attack of chills, nausea and headache. The next day he felt very feverish and had severe backache. The symptoms became more intense during the following days, though he continued to take part in the nightly concerts given by the club at Selma, Ala., Maplesville, Columbus and Tuscaloosa. On February 25 the company went to Delaware Ohio. The following morning, February 26, he noticed a rash on his forehead and wrists and went to a physician of the town. This was the first time he had sought medical advice, as he thought he had eaten something which had "poisoned" him. The doctor gave him some pills and a lotion and told him that his self-conceived diagnosis was doubtless correct and that he would be all right in a day or two. That night he fainted on the stage and was carried to his hotel.

The rash continued to spread, and on February 27, at Galion, Ohio, he says that he "was a sight," and that "the eruption looked like little blisters." He played at Warren, Ohio, on February 28, and on March 1 at Franklin, Pa. At the latter place he consulted a second physician, by whom he states he was examined for an hour or more, and who told him that the eruption resembled that of smallpox. A variety of lotions,

dusting powder and ointments were prescribed, and he was assured that the eruption would "go away in a few days." March 2, at Erie, Pa., the patient describes himself as hardly able to stand and as being unable to sleep or eat. On March 3 he played with the company at Silver Creek, N. Y., when he "excited considerable comment by his appearance, both on the stage and afterward when he met the audience socially."

The club arrived in Buffalo on March 4, and the young man paid a visit to Niagara Falls in the afternoon. He states that other occupants of the coach in which he made the trip showed a rather pardonable reluctance to sit next to him. In the evening the proprietor of the hotel at Buffalo came to him with the objection that other guests were complaining of his appearance and asked him to consult the "house doctor." The latter was called and promptly said: "Young man, you would better get home as soon as possible." The patient left Buffalo at 10 o'clock that night and arrived in Somerville on the afternoon of March 5.

The family physician was called and at once made a positive diagnosis of smallpox, and the patient was removed to the hospital twelve days after the initial symptoms were noted, and with pustules at the height of their development.

The pustulation was discrete but very closely distributed over face and limbs. It was more widely scattered on the trunk.

The case has progressed to practical recovery without incident of clinical interest. The patient claims to have been vaccinated in childhood, but no evidence of successful inoculation is to be noted.

C. CLARKE TOWLE.

A New Radium Danger.

NEW YORK, April 7, 1906.

To the Editor:—I notice an editorial reference in to-day's issue to an explosion of a radium tube in Germany. The liability to this accident was pointed out by me nearly two years ago in the *Medical Record*, June 20, 1904, as follows: "The second cause for the perforation of a glass tube is the increase of electric potential within the tube. Just as soon as this becomes sufficiently high the electricity sparks through. . . . To guard against this accident I would propose what appears to me a very simple and effective remedy, namely, sealing a small piece of platinum wire into the glass tube. It need only project a very short distance into the tube, and externally may be flush with the glass."

Radium in an aluminum tume is, of course, not liable to this accident, but to another quite as serious. If an alumninum tube is inserted into a growth, the bodily fluids will corrode it, and to my knowledge a number of tubes have been injured in this way, the corrosive going entirely through the aluminum and permitting the fluids to mix with and to injure the radium. I have protected my own aluminum tube by having it thinly coated with vulcanized rubber; this was done for me by a dental friend. On testing the tube before and after it was found that its effectiveness was impaired about 20 per cent., but this is better than taking the chance of entirely ruining the specimen. It is needless to say that the rubber employed should not contain any metallic oxids, as their presence would still further interfere with the egress of the rays.

Some of the pure radium bromid is now furnished in little cells with a mica face. This should not be applied directly to a moist surface. I have protected mine by covering the face of the cell with a collodion varnish and further wrapped the cell in a rubber dam, such as dentists use.

H. G. PIFFARD.

Mercury Sound for Dilating Esophagus.—Adam of Hamburg uses a very flexible, non fenestrated sound, filled with mercury, for dilating a stricture of the esophagus. The weight of the sound carries it down and it automatically works its way past strictures that arrest all other sounds, even those of smaller caliber. In one cancer case he has been able to keep the passage open for seven months by introducing this sound every second day. It is easy to control the position of the sound by radioscopy.—*Munch. med Wochft.*

Association News

THE BOSTON SESSION.

Some Details of the Arrangements for the Annual Session Next June.

The Committee of Arrangements is actively engaged in perfecting the arrangements for the fifty-seventh annual session of the American Medical Association to be held in Boston June 5-8. Their announcement of the hotels with prices appeared in THE JOURNAL last week. The headquarters of the various sections were named.

GUIDE BOOK.

A very practical feature of the arrangements is an elaborate guide book, which will enable the visiting physician to reach any point of interest and to understand all the historical scenes in Boston and vicinity. A good map is to be included, and special attention will be given to medical and surgical points of interest.

THE RECEPTIONS.

On one evening there will be the usual reception to the President of the Association, which is the chief social event of the week. At Harvard University's new medical school buildings there are to be afternoon teas from 4 to 7 o'clock on two or three afternoons, with music in the quadrangle and on the terraces. This will be principally for the ladies who are visiting, with the possibility of the physicians dropping in at the close of their afternoon programs. Special concerts and theater parties are being planned and a reception by the City of Boston in the Public Library.

CLINICS.

The advantages of Boston as a medical and surgical center are not to be neglected. Clinics will be held at a number of hospitals, and arrangements will be made whereby visitors may make the rounds of the hospitals or visit certain ones in the most convenient way. Some clinics are to be held in connection with some of the work of the section programs. All hospitals will provide clinical exhibits of some sort, and members who wish a change from the section programs will be able to find clinical work on any day.

Among the halls which are to be used for the section meeting places are the Y. M. C. A. Hall, Huntington Hall, the New Old South Church, Horticultural Hall, Chickering Hall, Jordan Hall and the buildings of Tufts and Harvard medical schools. The headquarters is to be at Mechanics Hall, where will be the registration and the scientific exhibit and the commercial exhibit. The House of Delegates is to meet in the Medical Library of Harvard Medical School.

EXCURSIONS.

A rate of one fare plus $1 for the round trip is to be in effect over a large part of the United States, and tickets will be sold from June 1 to 6, good to return leaving Boston up to June 11, with an extension possible to June 30. Passengers from Pacific Coast points may have return limit extended to August 31.

Among the excursions to be enjoyed in the vicinity of Boston are such historical places as Plymouth, Lexington and Concord and to points on the seashore. After the session visits may be made to the lakes of Maine and New Hampshire, the mountains of Vermont and New York, the St. Lawrence River, the Thousand Islands, the Great Lakes, Niagara Falls, etc.

MISSOURI VALLEY SPECIAL.—Arrangements have been perfected for a superb special train to Boston over the Grand

Trunk, via Niagara Falls, Toronto, Montreal, Thousand Islands, with a daylight ride down the St. Lawrence River, returning by rail. This train will run special through from Chicago, and will be made up of Pullman palace sleepers, dining-cars, buffet-library and observation cars. For reservations and itinerary address Dr. Charles Wood Fassett, St. Joseph, Mo.

LAKE SHORE SPECIAL.—The Lake Shore Railway will run a special train, a counterpart of the "Twentieth Century Limited," consisting of observation compartment car, sleeping-cars, library-car, dining-cars, on fast schedule, leaving Chicago at 10:30 a. m., Sunday, June 3, arriving at Boston, Monday, June 4, at 2 p. m. Stopover of ten days at Niagara Falls may be secured for side trips to Toronto, Thousand Islands and St. Lawrence River if desired. Write W. J. Lynch, Passenger Traffic Manager, Chicago, for reservations or any additional information.

GUESTS OF HONOR.

Prof. A. Duehrssen of Berlin writes that he will take part in the symposium on the "Duty of the Profession to Womankind," which is arranged in the Section on Hygiene and Sanitary Science. Professor Duehrssen will present a paper on the "Guarantee of Safety in the Marriage Contract." His fame as one of the leading gynecologists of the world is well known, and his contributions to gynecologic literature are numerous and varied. He has been preaching the advantages of vaginal Cesarean section since 1896. His private gynecologic clinic at Berlin was opened in 1892, but for years before and since he has been assistant obstetrician and instructor of midwives at the Charité. He is now in his forty-fifth year.

Max Joseph of Berlin is at the head of what has been called "the best private skin clinic in the world." In 1897 he founded the *Dermatologische Centralblatt*, and has always been its editor. In his early life he worked as assistant in the Berlin Institute of Physiology, then at the zoological station near Naples, and then made a special study of leprosy in Norway for his work on "Visceral Lepra." His manual on cutaneous and veneral diseases has passed through several editions, as also his atlas of the histopathology of the skin. He will be another of the guests of the Section on Hygiene and Sanitary Science.

NEW MEMBERS.

List of new members of the American Medical Association for the month of March, 1906:

ALABAMA.

Acton, W. H., Alabama City.
Britt, W. S., Eufaula.
Carlisle, S. O., Dothan.
Cocke, W. T., Hargrove.
Dickinson, N. P., Lafayette.
Dean, T. J., Union Springs.
Dryer, T. E., Huntsville.
Franklin, C. M., Union Springs.
Grady, Z. T., Lafayette.
Hargrove, R. H., Sycamore.
Harris, D. B., Munford.
Hawkins, J. P., Ragland.
Harris, E. C., Ragland.
Hixon, F. P., Perote.
Huey, G. W., Hartford.
Jackson, C. B., Dora.
McClendon, Joe, Dadeville.
McEachern, C. P., Banks.
Moody, E. F., Dothan.
Morris, W. E., Georgiana.
Nolen, A. J., New Site.
Prather, W. B., Seale.
Paschal, John, Hatchechubbee.
Ralls, A. W., Gadsden.
Rand, Edgar, Huntsville.
Reynolds, Gibson, Montgomery.
Stewart, B. C., Opp.
Terry, J. E., Red Level.
Turnipseed, D. C., Union Springs.
Underwood, N. T., Russellville.
Watson, J. C., Georgiana.
Williamson, G. W., Hartford.

ARIZONA.

Brannen, D. J., Flagstaff.
Ralph, R. T., Poland.
Shine, F. E., Bisbee.
Wiley, C. B., Camp Verde.

ARKANSAS.

Clemmer, J. L., Springtown.
Cowden, S. H., Morrilton.
Cunning, I. H., Knobel.
Dibrell, J. L., Little Rock.
Hughes, G. H., Gravette.
Luck, B. D., Pine Bluff.
Moore, A. L., Fayetteville.
Rice, C. A., Gentry.
Robinson, C. E., Clarksville.
Thompson, A. G., Pine Bluff.
Winkler, E. H., De Witt.

CALIFORNIA.

Abbott, E. K., Monterey.
Clark, Jonas, Gilroy.
Carter, P. B., Guadalupe.
Cluness, W. R., Jr., San Francisco.
De Lappe, F. R., Modesto.
Garcelon, Harris, Los Angeles.
Griffith, T. R., Riverside.
Huff, L. J., Los Angeles.
McAulay, Martin, Newman.
Mosher, C. D., Palo Alto.
Parish, H. L., Callstoga.
Stapler, D. A., San Francisco.

COLORADO.

Edwards, E. G., La Junta.
Follansbee, W. F., Paoria.
Hughes, J. G., Greeley.
Leavitt, B. C., Denver.
MacGregor, J. M., Denver.
Magruder, A. C., Colorado Springs.

CONNECTICUT.

Bevan, C. A., West Haven.
Graves, F. G., Waterbury.
Henkie, E. A., New London.
Plumstead, M. W., East Haddam.
Stoll, H. F., Hartford.
Wason, D. B., Bridgeport.

DELAWARE.

Ellis, W. W., Delaware City.
Frame, J. K., Millsboro.
France, J. L., Wilmington.
Springer, F. L., Newport.

DISTRICT OF COLUMBIA.

Reeve, J. N., Washington.
Wilson, A. A., Washington.
Wood, G. W., Washington.

FLORIDA.

Rawlings, J. E., Daytona.

GEORGIA.

Almond, Chas. B., Winder.
Ayers, Clarence L., Carnesville.
Brown, L. R., Sharon.
Campbell, J. L., Atlanta.
Coleman, E. T., Graymont.
Collier, T. J., Atlanta.
Deadwyler, O. L., Carlton.
Daughty, Wm. H., Jr., Augusta.
Derry, H. P., Macon.
Erwin, G. C., Young Harris.
Goodwyn, H. J. Roopville.
Kemp, W. M., Marietta.
Lively, M. M., Statesboro.
Mickle, C. M., Texas.
Milla, G. W., Calhoun.
Reynolds, H. V., Marietta.
Rushing, W. E., Daffin.
Shaw, W. J., Rome.
Sims, W. C., Richland.
Turner, G. H., Rico.

ILLINOIS.

Allen, H. S., New Boston.
Allin, F. W., Chicago.
Bacon, J. H., Peoria.
Beard, L. A., Polo.
Berger, G. F., Chicago.
Buford, C. G., Chicago.
Buss, F. J., Chicago.
Cook, E. A., Upper Alton.
Conlon, A. A., Chicago.
Cretors, F. G., Paris.
Champion, Joseph Van Meter, Mansfield.
Daum, E. F., Chicago.
Duncan, F. M., Marshall.
Eisendrath, J. L., Chicago.
Finch, J. H., Champaign.
Galloway, George Chicago.
Gibson, O. N., Eldorado.
Graham, Ralph, Biggsville.
Greene, E. B., Chicago.
Griffith, J. C., Bushnell.
Groth, W. F., Chicago.
Haller, Joseph, Lanark.
Hoover, M. O., Chicago.
Konzelman, A., Chicago.
Kramp, A. F., Chicago.
Lane, Francis, Chicago.
Little, H. M., East St. Louis.
Ludwig, H. M., Chicago.
McCormick, F. C., Normal.
Moore, M. T., Chicago.
Motter, T. L., Chicago.
Noakes, T. V., La Prairie.
Olsen, Marie A., Chicago.
Palmer, T. J., Maywood.
Peck, W. H., Chicago.
Read, C. F., Geneva.
Reitman, B. L., Chicago.
Rischar, Eduard, Chicago.
Roberts, R. B., Augusta.
Sloey, James, Lebanon.
Slegn, Valborg, Chicago.
Smith, M. H., Colona Station.
Sogsworth, John, Wilmette.
Stewart, A. E., Chicago.
Train, John A., Chicago.
Trueblood, R. R., Lawrenceville.
Vanatta, E. M., Dunning.
Wright, Emily, Rock Island.
Yantis, D. E., Faosland.

INDIANA.

Bland, Curtis, Greensburg.
Boyd, C. E., West Baden.
Boyd, C. L., Vincennes.
Brent, I. N., Jamestown.
Casper, John, Jasper.
Crowder, J. R., Sullivan.
Current, O. E., Farmland.
Dancer, Chas. W., Stroh.
Gross, W. O., Ft. Wayne.
Hobbs, H. C., Salem.
Hoover, J. G., Bronville.
Hunt, Tightman, Plainfield.
James, N. A., St. Meinrad.
Kelsey, Clarence, Evansville.
Kelso, U. G., Dubois.
Kendall, C. W., Pine Village.
Kern, C. B., Lafayette.
Knapp, Victor, Ferdinand.
MacDonald, J. A., Indianapolis.
Mercer, D. J., Poe.
Miller, B. E., Albion.
Mullikin, H. M., Terre Haute.
Norris, S. G., Anderson.
Osgood, H. G., Gosport.
Porter, J. B., Elkhart.
Shobe, M. A., Ligonier.
Smith, J. F., Brazil.
Teaford, S. F., Paoli.
Teal, G. A., Kendallville.
Wade, F. C., Lima.

IOWA.

Baron, H. S., Pella.
Bassett, L. A., Boone.
Chaffee, O. L., Waverly.
Choate, Cora W., Marshalltown.
Crosby, I. F., Stuart.
Dunlavy, H. F., Bedford.
Elmer, A. W., Davenport.
Farrens, E. T., Clarinda.
Fellows, A. R., Vinton.
Fuqua, W. M., Pella.
Glynn, C. E., Davenport.
Harrison, J. W., Guthrie Center.
Houlihan, T. J., Ida Grove.
Knox, J. M., Cedar Rapids.
Marston, C. L., Mason City.
Matthey, Carl, Davenport.
Maxwell, J. R., Keokuk.
McCarthy, W., Des Moines.
Merrill, N., Marshalltown.
Philpott, A. F., Ft. Madison.
Rodgers, L. A., Oskaloosa.
Smith, F. J., Milford.
Stotler, W. F., Shenandoah.
Viessen, H. H., Pella.
Vollmer, Karl, Davenport.
Walliker, W. M., Clinton.

KANSAS.

Caton, Chas., Concordia.
Cave, J. W., Wichita.
Colladay, S. M., Hutchinson.
Crawford, J. R., Salina.
Ekblad, J. W., Scandia.
Gulick, A. C., Goodland.
Guy, S. J., Winfield.
Haggman, C. V., Scandia.
Holcomb, C. M., Winfield.
Hollingsworth, T. J., So. Haven.
Jacobus, L. A., Winfield.
Judd, C. E., Topeka.
Litsinger, G. H., Riley.
May, F. B., Hunnewell.
McLemore, B. A., Ft. Scott.
McShea, Royal, Chapman.
Moyer, D. J., Junction City.
Perry, M. L., Parsons.
Pinkston, J. A., Independence.
Porter, M. C., Clay Center.
Ralls, C. T., Winfield.
Rea, J. A., Wellington.
Reynolds, S. E., Clay Center.
Richards, G. W., Kansas City.
Scales, H. L., Mt. Hope.
Shelly, S. T., Mulvane.
Sidlinger, S. H., Hutchinson.
Snyder, H. T., Winfield.
Williams, E. M., So. Haven.
Winterbotham, J. H., Salina.
Witmer, P. B., Abilene.

KENTUCKY.

Boothe, R. C., Praise.
Breidenthal, G. B., Louisville.
Burnside, Wm., Barbourville.
Curry, D. P., Wheatley.
Farabough, J. A., Clinton.
Grant, J. M., Petersburg.
Grimes, L. A., Concord.
Martin, G. E., Myers.
Mason, J. B., London.
Meador, J. W., Custer.
McMorries, E. B., Clinton.
Murdock, John, Auenstoke.
Nettelroth, Alexander, Louisville.
Nuttall, J. P., Jr., New Castle.
Scott, J. W., Lexington.
Thomas, G. C., Oakton.
Wadlington, J. B., Princeton.
Wallace, C. K., Frankfort.
Williams, W. H., Franklin.

LOUISIANA.

Armstrong, W. G., New Orleans.
Capdau, J. E., New Orleans.
Crawford, T. B., New Orleans.
Hatch, F. S., New Orleans.
Hume, Joseph, New Orleans.
Marcour, R. O., New Orleans.
McAnn, D. J., Atkins.
Newman, W. T., Independence.
Perrillat, L., New Orleans.
Scott, S. W., Shaw.
Souchon, Marion, New Orleans.
Watson, F. H., New Orleans.
Wunderlich, Wm., New Orleans.

MARYLAND.

Buckner, C. T., Baltimore.
Caspari, Wm., Baltimore.
Gross, Harry, Baltimore.
Hall, Thomas B., Mt. Winans.
Palmer, R. V., Palmers.
Rosenthal, L. J., Baltimore.
Wilson, L. N., Baltimore.

MASSACHUSETTS.

Ahearne, C. A., Lynn.
Allen, Freeman, Boston.
Arkin, Louis, Roxbury.
Atwater, J. B., Westfield.
Averell, C. W., North Reading.
Baldwin, H. T., Chestnut Hill.
Bancroft, G. A., Natick.
Barre, J. A., Fall River.
Barrett, M. F., Brockton.
Beebe, T. C., Jr., Boston.
Boutelle, H. C., Danvers.
Brousseau, W. G., Cambridge.
Burke, W. H., Cambridge.
Burnett, F. H., Brockton.
Colee, F. F., Holyoke.
Chandler, N. F., Medford.
Coon, G. B., East Walpole.
Curran, S. F., Dorchester.
Fair, J. F., E. Cambridge.
Fernald, G. G., Waverley.
Ferrin, W. W., Haverhill.
Field, J. B., Lowell.
Floyd, Cleaveland, Boston.
French, J. M., Milford.
Goddu, L. A. O., Beverly.
Harkins, J. F., Worcester.
Hayes W. L., Cambridge.
Healy, T. R., Newburyport.
Higgins, J. H., Marstons Mills.
Hill, G. H., Worcester.
Headley, A. H., Northampton.
Howell, W. W., Boston.
Ingalls, G. H., Jamaica Plain.
Kenney, W. C., Tewksbury.
Lanoie, J. E., Fall River.
Larrabee, H. M., Tewksbury.
Leahy, T. J., Cambridge.
Leary, W. C., Springfield.
Lemaire, W. W., Lynn.
Leonard, H. F., Boston.
MacQuaid, J. S., Worcester.
Mahoney, F. X., Boston.
Meek, Edith R., Boston.
Myles, L. T., Cambridge.
Nielson, E. B., Boston.
Nye, H. R., Leominster.
Painter, C. F., Boston.
Parker, E. L., Worcester.
Pickard, I. L., Concord Junction.
Rolfe, W. A., Boston.
Sargent, G. B., Lawrence.
Simmens, C. C., Boston.
Simmons, Hannah C., Worcester.
Smith, H. H., Boston.
Stedman, George, Boston.
Stowe, F. E., Medford.
Storey, T. A., Boston.
Streeter, J. F., Springfield.
Stodder, C. W., Marshfield Hills.
Sullivan, J. L., Boston.
Tobey, G. L., Jr., Boston.
Von Groll, M. C., Boston.
Walton, W. J., Dorchester.
Webber, A. P., New Bedford.
West, E. G., Boston.
White, C. J., Boston.
Worthington, A. M., Dedham.

MICHIGAN.

Baker, A. J., Grand Rapids.
Browne, J. E., Howell.
Doherty, V. C., Grand Marais.
Drake, G. H., Pontiac.
Elliott, Edwin, Chesaning.
Ellison, Gayfree, Muskegon.
Emmert, H. C., Detroit.
Gorenflo, A. H., Detroit.
Huber, E. G., Plymouth.
Huizinga, J. G., Grand Rapids
Lyon, L. W., Detroit.
McGough, A. L., Detroit.
Milligan, E. T., Detroit.
O'Donovan, D., Detroit.
Pratt, G. O., Detroit
Peinberg, J. G., McBain.
Risley, E. H., Battle Creek
Seaborn, R. A., Detroit.
Slocum, Geo., Ann Arbor.
Swift, E. R., Coleman
Utter, L. J., Detroit
Vander Veen, Arend, Grand Haven.
Van der Velpin, A., Detroit.

MINNESOTA.

Alexander, F. H., Barnesville.
Ayres, G. T., Ely
Bigelow, C. F., Dodge Center.
Edwards, J. M., Mankato.
Ferree, G. P., Paynesville.
Gibbon, L. L., Lowry
Hacking, F. H., Granite Falls
Helmark, J. H., Fertile
Lewis, C. F., Austin

Lowe, Thomas, Pipestone.
Manson, F. M., Worthington.
Mayo, W. W., Rochester.
Newhart, Horace, Minneapolis.
Parker, O. W., Ely.
Putney, G. E., Paynesville.
Wang, A. M., Minneapolis.

MISSISSIPPI.

Armstrong, J. C., Water Valley.
Banks, E. J., Abbeville.
Baykin, W. H., State Line.
Birchett, J. A., Vicksburg.
Bragg, E. R., Biloxi.
Everett, A. G., Friars Point.
Edwards, L., Morton.
Jiggitts, J. R., Canton.
Lamkin, L. H., Natchez.
McBryde, W. W., Brooksville.
McLaurin, A. G., Brandon.
Pevey, W. H., Forest.
Ratliff, R. F., Lucedale.
Sayle, B. B., Coffeeville.
Trotter, A. G., Winona.
Tucker, H. S., Ellisville.
Young, A. A., Oxford.

MISSOURI.

Amelss, F. C., St. Louis.
Barnes, G. W., Springfield.
Becker, W. H., St. Louis.
Brown, O. H., St. Louis.
Byler, W. F., Koeltztown.
Curdy, R. J., Kansas City.
Eades, M. H., New Hampton.
Farnsworth, D. B., Springfield.
Fewel, R. B., Montrose.
Fulton, C. E., Springfield.
Hall, O. B., Warrensburg.
Hirschi, W. T., St. Louis.
Holt, E. E., St. Louis.
Hornback, E. T., Hannibal.
Knabb, Enoch, Springfield.
Lamson, R. C., Neosho.
Loewenstein, H. M., St. Louis.
Long, F. L., DeSoto.
Mann, F. P., St. Louis.
Martin, W. T., Albany.
McComb, J. A., Lebanon.
Meredith, A. L., Wooldridge.
Menees, G. W., Clinton.
Myer, J. S., St. Louis.
Perkins, J. M., Lebanon.
Pinckard, J. A., Lebanon.
Pritchett, P. L., Lebanon.
Stone, A. B., Lamar.
Todd, D. C., St. Louis.
Terry, N. F., Springfield.
Wills, R. L., Neosho.
Wilson, E. H. G., St. Louis.
White, W. L., Chillicothe.

MONTANA.

Boyle, C. B., Bozeman.
Wallin, C. C., White Sulphur Springs.

NEBRASKA.

Walker, J. G., Mt. Clare.

NEVADA.

Sullivan, J. J., Virginia City.

NEW HAMPSHIRE.

Fiske, G. V., Northwood Ridge.
French, L. M., Manchester.
Graves, R. J., Concord.
Hanson, C. W., Northwood Ridge.

NEW JERSEY.

Allers, Henry, Harrison.
Bleick, W. D., Newark.
Conover, E. E., Hasbrouck Heights.
Farr, J. C., Jr., Hoboken
Gamson, E., Bayonne.
Hanan, J. T., Montclair.
Mitchell, Winthrop, East Orange.
Sickenberger, E. F., Carlstadt.
Tuers, G. E., Paterson.
Van Riper, A. W., Passaic.
Waite, G. N., Newark
Ward, Gertrude, Bloomfield.

NEW MEXICO.

Cunningham, J. M., Las Vegas.
Hall, W. H., Hagerman
Kinsinger, J. W., Roswell.

NEW YORK.

Alderton, H. A., Brooklyn
Austin, O. L., Tuckahoe
Benedict, A. L., Buffalo.
Bogart, J. B., Brooklyn.
Burnham, M. P., Ray Brook.
Butler, G. R., Brooklyn.
Cilley, A. H., New York
Cochran, H. L., Brooklyn
Collins, J. J., Brooklyn.
Connelly, Daniel, Kingston
Danner, H. L., Syracuse.
Ely, W. S., Rochester
Ewers, W. V., Rochester
Fisher, E. D., New York
Fleming, J. W., Brooklyn.
Gardner, Miriam, Clifton Springs.
Grant, J. H., Buffalo.
Hendrickson, S., Brooklyn.
Herman, C. F., Brooklyn.
Humpstone, O. P., Brooklyn.
Hutchinson, W. M., Brooklyn.
Jacobi, Abraham, New York.
Jennings, J. E., Brooklyn.
Jennings, C. S. R., Elmira.
Jewett, C. S., Buffalo.
Kiepe, E. J., Buffalo.
Knight, F. H., Brooklyn.
Lamadrid, J. J., Brooklyn.
Lee, J. A., Brooklyn.
Little, G. F., Brooklyn.
Longmore, J. A., Brooklyn.
Loop, R. G., Elmira.
Love, C. R., Brooklyn.
Matson, Nathaniel, Brooklyn.
McCorkle, J. A., Brooklyn.
Mercer, Alfred, Syracuse.
Messinger, M. P., Oakfield.
Nichols, F. H., Jamestown.
Ohly, J. H., Brooklyn.
Otis, F. B., Brooklyn.
Park, Roswell, Buffalo.
Phillips, W. C., New York.
Price, G. M., Syracuse.
Read, H. N., Brooklyn.
Royce, R. S., Brooklyn.
Sherwood, W. A., Brooklyn.
Stedman, T. L., New York.
Taylor, J. R., Brooklyn.
Thompson, R. R., Kingston.
Truslow, Walter, Brooklyn.
Van Cott, J. M., Brooklyn.
Vickers, F. D., Canajoharie.
Vickers, H. W., Canajoharie.
Wey, H. D., Elmira.
Wight, J. S., Brooklyn.
Zellhoefer, Chas., Brooklyn.

NORTH CAROLINA.

Babnson, H. T., Winston-Salem.
Drew, G. F., Crary.
Fassett, B. W., Courtney.
Fish, H. G., Wheatland.
Maercklein, E. H., Forman.
Morris, A. St. C., Fargo.
Moore, W. B., Smith.
Smith, J. B., Pilot Mountain.
Rankin, J. A., Jamestown.

OHIO.

Beehout, J. W., Dexter City.
Beery, J. E., Columbus.
Carlton, J. S., Columbus.
Crinnion, T. M., E. Toledo.
Davis, D. D., Omega.
Dunham, J. D., Columbus.
Edwards, J. F., Portsmouth.
Evans, L. E., W. Jefferson.
Fitch, M. D., Columbus.
Geissinger, H. W., Grove City.
Goodsell, E. J., Norwalk.
Graham, F., Lisbon.
Heidler, G. K., Cleveland.
Helms, F. G., Uhrichsville.
Henry, J. L., Athens.
Henry, Z. L., Amesville.
Hixon, G. W., Cambridge.
Hoover, W. M., Grove City.
Howard, J. M., Amesville.
Hughes, W. J., Moscow.
Johnston, H. J., Haskins.
Korner, A. H., Woodsfield.
Lee, H. T., Athens.
Matson, G. H., Columbus.
McCann, T. H., Scioto.
McCommon, W. A., E. Palestine.
Meitus, Jos., Cincinnati.
Mosler, D. D., Brice.
Murphy, J. A., Columbus.
Murphy, J. W., Eagle Mill.
Noble, Angus, Wellsville.
Owens, J. R., Wayland.
Parker, W. H., Wellston.
Price, Joseph, Columbus.
Richards, Nancy D., New Philadelphia.
Roberts, A. C., Morrow.
Roberts, D. M., New Richmond.
Rogers, G. W., Columbus.
Sipher, J. A., Norwalk.
Smith, R. B., Columbus.
Steele, J. H., Guysville.
Stevens, A. G., Black Fork.
Street, Harry, Litchfield.
Tarbell, R. C., Columbus.
Taylor, W. J., East Liverpool.
Templeton, A. M., Zanesville.
Tidd, E. T., Columbus.
Upson, H. S., Cleveland.
Walker, W. J., Farmer

OKLAHOMA.

Abel, W. N. T., Oklahoma City.
Beauchamp, F. D., Mangum.
Bilby, G. N., Alva
Boyd, D. H., Anadarko
Bradford, W. C., Shawnee
Campbell, G. C., Anadarko.
Davis, F. F., Oklahoma City
Dodson, W. O., Mangum
Douglas, G. K., Shawnee.
Grayson, A. T., Shawnee.
Hazen, A. L., Newkirk.
Johnston, G. P., Lexington.
Kerley, W. W., Anadarko.
Linney, R. Z., Hopeton.
Lively, S. A., Wakita.
Lowther, R. D., Norman.
Mayberry, S. N., Enid.
McKenzie, W. H., Enid.
Melvin, J. L., Guthrie.
Orvis, E. J., Tonkawa.
Petty, C. S., Guthrie.
Phillips, G. H., Pawnee.
Stiles, N., Medford.
Weber, A. A., Perry.
Workman, J. M., Woodward.
Workman, R. A., Woodward.

OREGON

Ison, V. S., Baker City.
Slater, F. E., Salem.

PENNSYLVANIA

Ash, A. F., Duke Centre.
Bell, J. J., Erie.
Conner, Annie L., Philadelphia.
Cope, P. C., Braddock.
Davis, J. F., Oil City.
Doolittle, E. B., Hazleton.
Gray, G. B., Morris.
Hinchman, W. A., McKeesport.
Hawke, W. W., Philadelphia.
Reagan, A. D., Easton.
Rastatter, P. F., Erie.
Reed, J. H., Sharon.
Schmelter, J. W., Erie.
Sheridan, L. A., Wilkesbarre.
Stahlman, T. M., Pittsburg.
Weaver, A. P., Philadelphia.
Weibel, E. G., Erie.
Yeaney, G. B., Clearfield.

RHODE ISLAND.

Boucher, R. P., Providence.
Bradshaw, A. B., Providence.
Brown, H. R., Providence.
Christie, C. S., River Point.
Green, H. R., Providence.
Griffin, C. H., Providence.
Richards, B. F., Pawtucket.
Wheaton, J. L., Jr., Pawtucket.

SOUTH CAROLINA.

Allgood, J. E., Liberty.
Baker, A. E., Charleston.
Bolt, J. L., Pickens.
Bratton, R. A., Yorksville.
Frampton, James, Mt. Pleasant.
Goodlett, B. F., Travelers' Rest.
Hay, J. T., Jr., Baykin.
Napier, C. D., Blenheim.
Rogers, J. G., Page's Mill.
Walker, M. J., Yorkville.
Wickliffe, J. W., West Union.
Williams, J. F., Roebuck.

SOUTH DAKOTA.

Peabody, P. D., Webster.

TENNESSEE.

Bains, R. C., Wooldridge.
Branch, B. L., Collierville.
Campbell, J. F., Morristown.
Craig, J. R., Dyersburg.
Doyle, H. A., McMinnville.
Ellis, J. J., Knoxville.
Farrington, P. McG., Memphis.
Frierson, W. G., Shelbyville.
Gillespie, J. R., Dayton.
Jones, R. L., Nashville.
Lackey, J. H., Ripley.
Little, R. M., Dresden.
Loring, B. F., McMinnville
Williams, G. V., Chattanooga.
Woolner, A. B., Chattanooga

TEXAS.

Adkins, J. J., Refugio.
Ammons, H. R., Turnersville.
Baker, M. D., Waco.
Black, H. C., Waco.
Brown, J. B., McGregor.
Caldwell, J. A., McKinney
Cantrell, Will, Wolfe City
Callaway, G. McD., Anson
Clark, H. T., Fanchon.
Cochrane, A. S., Mineola
Covert, J. D., Fort Worth
Craddock, S. W., Latch.
Dildy, J. E., Lampasas.
Du Val, J. W., Sulphur Springs.
Dye, T. C., Ratcliff
Edwards, T. R., Cleburne
English, E. W., Slayden.
Foster, C. C., Cornhill.
Grizzard, L. A., Abilene
Gohlman, W. H., Houston
Halsell, J. T., Laredo.
Harben, R. P., Richardson
Herff, Ad., San Antonio
Herff, J. B., San Antonio
Herring, J. C., Cyclone
Higgins, D. M., Gainesville
Johnson, C. R., Gainesville

Jones, J. T., Jonesboro.
Jones, O. L., Fort Worth.
Kelton, L. E., Corsicana.
Kight, J. R., Eola.
Kirkpatrick, S. B., Waco.
Lackey, W. C., Fort Worth.
Larendon, G. W., Houston.
Lee, R. E., Honey Grove.
Mayes, J. A., Denison.
McDuff, J. M., Atlanta.
McLean, J. H., Fort Worth.
McLeod, R. H., Palestine.
McReynolds, G. S., Temple.
Mizell, Sewell, Kaufman.
Olive, Wm., Houston.
Overton, M. C., Lubbock.
Park, J. W., Kaufman.
Price, Don, Centerville.
Roberts, S. A., San Diego.
Robinson, J. E., Browwood.
Robison, D. K., Itasca.
Ross, D. C., Keene.
Rucker, W. E., McKinney.
Sibley, A. J., Creedmoor.
Smith, Edgar, Mendoza.
Smith, D. M., Gustine.
Smith, F. M., Blue Ridge.
Sweatt, O. P., Waxacachie.
Townsen, J. B., Lampasas.
Terry, J. S., Ennis.
Thomas, L. B., Comanche.
Westbrook, W. J., Sipe Springs.
Whitaker, A., Bigfoot.
Wilson, B. F., Marquez.
Woodson, J. M., Temple.
Worley, H. C., Sherman.
Young, F. E., San Antonio.

UTAH.

Hosmer, J. E., Provo.
Ray, C. N., Mount Pleasant.
Scott, H. S., Salt Lake City.

VERMONT.

Bonney, C. H., Ludlow.
Locke, C. W., Springfield.
Nichols, E. M., Barton.
Ross, C. B., West Rutland.
Wheeler, J. M., Burlington.

VIRGINIA.

Atkinson, M., Richmond.
Gover, R. W., Gore.
Hargrave, E. T., Norfolk.
Rogers, W. R., Bristol.
Shoemaker, L. W., Piney's Siding.
Wilson, N. G., South Norfolk.

WASHINGTON.

Downs, G. A., Spokane.
Harris, J. E., Seattle.
Mattice, M. B., Sedro-Woolley.
Stapp, M. R., Aberdeen.
Westphal, Hermann, Ft. Sincoe.

WEST VIRGINIA.

Arbuckle, J. A., Elkins.
Arbuckle, J. D., Cass.
Brown, W. A., Hambleton.
Cooper, F. S., Glatto.
Covert, O. F., Moundsville.
Le Sage, I. R., Huntington.
Leon, Moses, Mannington.
Perry, R. G., Jarvisville.
Ritter, W. E., Clay.
Smith, C. T., Tunnelton.
Trippett, J. F., Statler Run
Wetzel, J. H., Ravenswood
Wilson, E. A., Salem.

WISCONSIN.

Amsel, Joseph, Milwaukee.
Frost, C. H., Plainfield.
Iverson, M., Stoughton.
Perry, Dane, Prentice.
Post, C. C., Barron.
Sapper, O. L., Gresham.
Schmit, Louis, Milwaukee.
Seldon, W. B., Thorpe.
Torney, T. W., Madison.
Wahl, H. S., Strafford.

Marriages

ARTHUR D. BANGHAM, M.D., to Miss Ruth Ludlow, both of Albion, Mich., March 24.

FRANCIS M. ROSEBERRY, M.D., to Miss Marie Harnasch, both of Keokuk, Iowa, March 28.

NICHOLAS D. RICHARDSON, M.D., to Miss Elise Gregory of San Francisco, Cal., March 25.

ROBERT MILLIGAN COLEMAN, M.D., to Miss Elsie May Stoll, both of Lexington, Ky., April 4.

EDMUND M. STECKEL, M.D., to Miss Emma Druckenmiller, both of Allentown, Pa., March 27.

WALTER W. OVERFIELD, M.D., Forreston, Ill., to Miss Grace Knepper of Rockford, Ill., March 20.

MARVIN L. SMOOT, M.D., Spencer, N. C., to Miss Margaret Louise Giddens of Goldsboro, N. C., April 5.

ALVAH M. DAM, M.D., Brookline, Mass., to Mrs. Hannah A. Talbot of Stoughton, Mass., at Brookline, March 26.

HENRY LARNED KEITH SHAW, M.D., Albany, N. Y., to Miss Susanne Sturtevant Burrell of Little Falls, N. Y., March 29.

Deaths

Charles A. Snodgrass, M.D. Medical Department of Washington University, St. Louis, 1903; health commissioner of that city since last November; a member of the American Medical Association and of the Mississippi Valley Medical Association, died April 6 from croupous pneumonia, at the City Hospital, St. Louis, after an illness of eight days, aged 38. Dr. Snodgrass received his preliminary education at the State University of Missouri and Chicago University. He was beginning a series of important reforms in the health department and devoted his entire time to the office. He realized that the importance of his office demanded full labor and gave it unflinchingly. He was an earnest student and a methodical worker, and the medical profession and the community lose a valued member in his untimely death.

William Edgar Wirt, M.D. University of Wooster, Medical Department, Cleveland, 1888, of Cleveland, Ohio; ex-president of the Cleveland Medical Society; professor of orthopedic surgery, Cleveland College of Physicians and Surgeons; orthopedic surgeon to Cleveland General and City hospitals; fellow of the American Academy of Medicine; a member of the Ohio State Medical Society and American Orthopedic Association, and chairman of the clinical and pathologic section of the Academy of Medicine of Cleveland; lieutenant of naval reserves during the Spanish-American War, died at Miami, Fla., March 19, from nephritis, after a long illness.

James W. Smith, M.D. Bellevue Hospital Medical College, New York City, 1882; for 15 years a member of the board of education of Paterson, N. J., and for 17 years a member of the board of managers of the State Asylum for the Insane, Morris Plains, and vice-president at the time of his death; chief surgeon of St. Joseph's Hospital, Paterson; assistant health officer of the city, died at his home in Paterson, March 29, from pleuro-pneumonia, after an illness of five days, aged 48.

William J. Mahon, M.D. Bellevue Hospital Medical College, New York City, 1897, of New York City; a member of the New York County Medical Society and of the Celtic Medical Society of New York; lecturer at the New York Polyclinic and surgeon to the Metropolitan Nose and Throat Hospital, died March 27 at the home of his parents in Hartford, Conn., from rheumatism of the heart, after an illness of seven weeks, aged 32.

Solomon C. Martin, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1866; professor of dermatology in Barnes Medical College, St. Louis, for 14 years; a Confederate veteran; editor of the *Medical Era* and associate editor of the *American Journal of Dermatology and Genito-urinary Diseases*, died at his home in St. Louis, March 27, from pneumonia, after an illness of three weeks, aged 68.

Homer J. Short, M.D. Medical College of Georgia, Augusta, 1888; for fifteen years a practitioner of Hot Springs, Ark.; twice a member of the school board and for two years its president, and a member of the city council for two terms, died at his old home, Buena Vista, Ga., March 22, from mental disease, after an illness of more than a year.

Asa Emery Johnson, M.D. University of the City of New York, 1850; a pioneer physician of Minnesota; founder and first president of the Minnesota Academy of Natural Sciences, Minneapolis; county physician of Hennepin County in 1858; for more than half a century a resident of Minneapolis, died at his home in that city, January 27, aged 80.

George G. Wise, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866; a member of the American Medical Association; attending physician to St. Luke's Episcopal Mission, died at his home in Philadelphia, March 28, from heart disease, after an illness of seven weeks.

Jeremiah A. Cronin, M.D. Bellevue Hospital Medical College, New York City, 1896; formerly house physician of Carney Hospital, South Boston; for several years assistant surgeon of the Ninth Infantry, M. V. M., died at the home of his parents in South Boston, April 2, after a lingering illness, aged 32.

Charles S. Leonard, M.D. Cleveland Medical College, 1856, formerly of Ravenna, Ohio, and for many years a member and secretary of the Portage County (Ohio) Medical Association, died at his home in St. Louis, Mich., March 26, after an invalidism of nine years, from cerebral hemorrhage, aged 79.

Anton P. Nixdorf, M.D. St. Louis Medical College, 1856; a surgeon during the Civil War; one of the oldest practitioners of Missouri; postmaster of Pleasant Farm, Mo., for many years, died at his home in that place, January 27, after an illness of one week, aged 74.

Obadiah L. Saylor, M.D. Jefferson Medical College, Philadelphia, 1853; once coroner of Schuylkill County, Pa.; a retired presiding elder of the Evangelical Church, died from dropsy at his home in Bethlehem, Pa., April 4, after an illness of two years, aged 72.

Roscius Y. Downs, M.D. College of Physicians and Surgeons in the City of New York, 1886; health officer of Derby, Conn., died at his home in Ansonia, Conn., April 1, from septicemia due to an operation wound, after an illness of only twenty-four hours, aged 48.

Kent D. Waite, M.D. Cleveland University of Medicine and Surgery, 1888, formerly professor of surgery and lecturer in anatomy at his alma mater, died at the Cleveland State Hospital from general paresis, March 29, after an illness of two years, aged 42.

Charles H. Blaney, M.D. Medical Department, University of Southern California, Los Angeles, 1904; assistant superintendent of Los Angeles County Hospital, died in that institution, March 30, from diabetes, after an illness of more than a year, aged 31.

Michael P. O'Neill, M.D. Medico-Chirurgical College, Philadelphia, 1900; a member of the American Medical Association; formerly resident physician at St. Agnes' Hospital, Philadelphia, died at his home in Philadelphia, April 3, from typhoid fever, aged 29.

Job P. Boozer, M.D. Medical College of the State of South Carolina, Charleston, 1854, of Clinton, S. C., for many years president of the Laurens County Medical Association, died suddenly, at the home of his daughter in Laurens, April 3, aged 73.

Fletcher T. Seymour, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866, a beloved practitioner of Haywood County, Tenn., died at his home in Eurekaton, March 29, after a lingering illness, aged 70.

Alonzo J. Weathered, M.D. Vanderbilt University, Medical Department, Nashville, 1882, formerly an alderman of Waco, Texas, died suddenly from angina pectoris, at his office in Waco, March 28, aged 54.

Daniel A. Dakin, M.D. Rush Medical College, Chicago, 1870, a member and once president of the Wayne County Medical Society, died suddenly at his home in Detroit, April 2, from heart disease, aged 69.

Wales G. Fike, M.D. Medical College of the State of South Carolina, Charleston, 1899, of Union, S. C., died at Spartanburg, S. C., March 30, from heart disease, after an illness of ten weeks, aged 34.

Ludy M. Henderson, M.D. Medical College of Georgia, Augusta, 1867, a Confederate veteran, died at his home in Waterloo, S. C., March 24, after an illness of several months, aged 72.

James Morris Crabb, M.D. Rush Medical College, Chicago, 1904, recently of Ashton, S.D., died Nov. 23, 1905, in the Presbyterian Hospital, Chicago, from sacro-iliac tuberculosis, aged 37.

Edwin G. Hawkes, M.D. Jefferson Medical College, Philadelphia, 1892, a member of the American Medical Association, died at his home in Philadelphia, April 5, aged 40.

Daniel G. R. Le Quesne, M.D. Medical Department of Adelbert College of Western Reserve University, Cleveland, 1883, died at the Cleveland State Hospital, April 1.

Edmond T. Baker, M.D. Medical College of Virginia, Richmond, 1888, of Richmond, Va., died at the home of his father, Curl's Neck Farm, March 29, aged 38.

James M. Black, M.D. Kentucky School of Medicine, Louisville, 1888, died at his home in Knoxville, Tenn., April 5, from pneumonia, after a short illness.

M. D. Shelton, M.D. University of Nashville, Medical Department, 1869, died at his home in Midway, Ala., March 26, after a short illness.

Alonzo G. Brush, M.D. University of Wooster, Medical Department, Cleveland, 1881, died at his home in Fairfax, Vt., March 26, aged 87.

Harry B. Orr, M.D. Jefferson Medical College, Philadelphia, 1883, died at his home in Pittsburg, Pa., after a short illness, March 29, aged 49.

Adolph W. Berle, M.D. New York University, New York City, 1885, died at his home in New York City, March 26, aged 45.

Deaths Abroad.

H. V. Hoelder, M.D. died at Stuttgart, March 11, aged 86. He occupied a prominent position in medical circles and was a pioneer in anthropologic research. His collection of skulls is renowned. It now becomes the property of the Stuttgart museum of natural history.

P. Stolper, M.D., professor of legal medicine at Göttingen, succumbed to a stroke of apoplexy, March 13, while delivering a medical address. He was a frequent contributor to medical literature, discussing surgery for accidents, points in medical jurisprudence, etc.

Phisalix, M.D., assistant to the chair of comparative pathology at the museum of natural history at Paris, France, died March 21, aged 50. His biologic researches have carried his name far.

The Physician.—Charles H. Lewis says that physics is the synonym of natural philosophy, and that, by the derivation of his name the physician is a natural philosopher, or scientist; but by the title of doctor he is also a teacher, and in his dual capacity the administering of remedies falls far short of measuring the field of his activities. His advice and counsel are often the most needed and most useful part of his service, and it is his duty to dispense knowledge as well as medicine.—*Journal Michigan State Medical Society.*

Miscellany

The German Circulars Warning Against Venereal Disease.

A special committee appointed by the German Society for Combating Venereal Diseases has prepared two circulars, one for men and the other for women and girls, each written in simple style. The work of the society has been previously described in these columns and its public meetings reported, as on page 1294, vol. xliv, 1905. The official title is the "Deutsche Gesellschaft zur Bekämpfung der Geschlechtskrankheiten." It is a national organization for sanitary prophylaxis, with local branches in more than twenty-two of the larger cities of Germany. The annual membership fee is about 75 cents (3 marks), and all classes of society are represented in it. The central office is in Berlin W. 9, Potsdamerstrasse 20. The society has already accomplished several notable reforms, among them the abolition of the discrimination against venereal diseases by the semi-official societies which insure against sickness. It has also secured more accommodations for venereal patients in the hospitals. The society issues a bulletin, the *Mitteilungen*, which is sent free to all the members. Independently of the society, the president, vice-president and secretary, Neisser, Lesser and Blaschko, issue a larger journal, the *Zeitschrift f. Bekämpfung der Geschlechtskrankheiten*, just entering its fifth volume. (Subscription is about $2—8 marks—a volume.) The managing board of the society consists of 49 persons, principally physicians, with lawyers, the mayors of Mannheim and Frankfurt, and some insurance and high government officials.

The circular addressed to men has been distributed by the hundreds of thousands throughout the universities, the workshops and other industrial establishments wherever German is spoken. The society has only recently issued a warning circular for women and girls which is now being distributed broadcast throughout the factories, etc. Copies of the circulars can be obtained free of charge from the central office. It will be noted that the circulars do not touch the moral side of the subject. The society replies to criticisms on this point that this aspect of prophylaxis is left to other hands.

We give literal translations of both circulars, not because they are models or worthy of imitation in style of presentation, but because they represent something actually done in the European campaign of venereal prophylaxis and because the agitation in this country is gaining such impetus.

THE GERMAN SOCIETY FOR COMBATING SEXUAL DISEASES.

CIRCULAR FOR MEN.

1. Abstinence in sexual intercourse, according to the unanimous verdict of physicians, is as a rule not injurious to health, notwithstanding a widespread notion to the contrary.

A temperate life and physical exercise in the open air (walking, gymnastics, swimming, rowing, skating, etc.,) can prevent the sexual desire from getting the upper hand.

2. The so-called venereal or sexual diseases are very prevalent among all classes of the population. The most important are gonorrhea and syphilis.

Gonorrhea begins a few days after the opportunity for contagion, with a discharge from the man's or woman's private parts, often with but also sometimes without pain, smarting or itching. It may not attract attention at all, especially in a woman, and it lends in many cases to various and sometimes very serious after-troubles. It may be still present and contagious long after the patient believes himself or herself to be entirely cured. They may then unknowingly give the disease to others. Very frequently in this way women become infected after marriage—many serious female diseases, the childlessness of many married couples, are the results of gonorrhea. The poison of the disease is liable to get into the eyes of the babe during birth, and if not properly treated, to make it blind.

Syphilis begins with a little break in the skin, a small lump or a sore, generally not until several weeks after the contagion, and leads in its further course to eruptions on the skin, sore throat etc. After these have all passed away, in the course of the next three or four years, sometimes even considerably later, the most various manifestations of the disease are liable to appear in any or every organ. Under appropriate treatment, as a rule, their course is mild and benign, but in many cases, especially when the treatment of the disease is neglected, extremely serious affections may result, with a train of distressing consequences. The disease is contagious for years, and may be transmitted to the offspring, even when the person affected seems to be apparently free from it.

3. The main source—direct or indirect—of the venereal diseases is intercourse with prostitutes, that is, with girls who give themselves up to several men for money. These girls usually take gonorrhea or syphilis or both very early, and then give them to others. Even medical inspection of prostitutes is not a certain protection—the young prostitutes in particular are especially dangerous. But also women who do not make themselves prostitutes, if they have the slightest habit of irregular sexual intercourse, are exposed to the danger of contagion, and are therefore liable to give the

disease to others. They may even be affected without any suspicion of it, and without any one's being able to detect any signs of disease on them.

4. Every sexual intercourse outside of married life may bring danger. This danger may be materially reduced by cleanliness, disinfecting washings, and by the use of special protecting measures, but they never entirely remove the danger.

5. An extraordinarily large number of venereal contagions occur under the influence of liquor; many are made worse by liquor drinking. In this way also liquor drinking causes much harm.

6. Syphilis can be taken also without sexual intercourse; contagion can occur from kissing. Also articles such as eating and drinking utensils, pipes and shaving brushes, used by strangers, should be avoided as much as possible, as they are liable to transmit the disease. A wet-nurse should never be engaged without a medical examination, and a child that has not been examined by a physician should never be given the breast.

7. Every wound or sore, inflammation or discharge on the private parts may be extremely contagious. Whoever has anything of the kind should, of course, refrain from sexual intercourse under all conditions and apply to a registered physician (not a quack) for a medical examination. By prompt recognition and appropriate medical treatment severe sufferings later may frequently be warded off. Nearly every case is completely curable, although not for years in some instances.

8. The man with gonorrhea or syphilis can not himself tell whether he is really cured or not. He must have himself examined by a physician again and again in the course of months, often years, so that the physician can follow the course of the disease and resume treatment again as it is needed.

No one should allow himself to be influenced by the advertisements of quacks and irregulars against the use of mercury in the treatment of syphilis. This treatment, according to the universal verdict of doctors, is necessary, extraordinarily effective, and harmless in the hands of a well-instructed physician. He who does not apply to a physician or who breaks off treatment or does not return for examination later has only himself to blame when he is again overtaken with manifestations of the disease, although sometimes not until many years later. By such neglect be not only injures himself, but frequently also other persons.

Before or after the apparent subsidence of a venereal disease, before a man has been declared by a physician to have got over the contagious stage, if he gives the disease to another person or exposes the latter to the danger of contagion he is liable to be sued in the civil and criminal courts and held for severe damages. The criminality is just as serious when the other party is a prostitute.

Any one who has had gonorrhea or syphilis must beware especially of marrying, or, if he is already married, of resuming sexual relations until express permission has been obtained from his doctor. Above all, persons with a venereal disease must take especial care of the cleanliness of their bodies. The syphilitic especially must always bear in mind that, even without actual contact, he is liable to give the disease to others by carelessness and infect innocent women and children.

9. Any one who has ever had a venereal disease must inform the physicians to whom he applies later of this fact. It may prove essentially important for the recognition and treatment of troubles later.

CIRCULAR FOR WOMEN AND GIRLS.

This circular is addressed particularly to girls who become wage-earners early and have no suitable persons to give them advice.

Among the most serious dangers which threaten these girls is the danger of sexual relations outside of marriage, to which they are often led by apparently harmless pleasures, such as dancing.

Intercourse with young men, in whose heedless and often absolutely dishonest promises the inexperienced girls put altogether too much trust, being led astray by advice of wanton female friends, and indulgence in intoxicating drinks—these are the allurements to which thousands of girls fall victims.

For girls sexual relations before marriage have a two fold danger—the danger of getting in a family way, and the danger of sexual diseases.

The girl who is in a family way is hindered in her work. She frequently loses her position. She falls into disgrace and poverty. The poverty grows worse when a child comes into the world. The girl then frequently falls lower and lower until she becomes a common street-walker and thief.

Although the father is bound by law to support his child born out of marriage until it is 16, yet he often manages to sneak out of this duty or is too poor to attend to it.

Besides all her other burdens the expense of supporting the child then falls on the young mother, whose weakened health generally makes her unable to work much.

Men who seek sexual relations outside of wedlock generally have intercourse with several girls, especially also with prostitutes. The consequence of this is that nearly all of these men suffer or have suffered from some sexual disease. Any one who has a sexual disease can give it to others, even when he is apparently entirely healthy, and in many cases even when he considers himself entirely cured.

On account of the widespread prevalence of sexual diseases among men, every girl who has sexual intercourse even once with a man exposes herself to the danger of contagion. Girls who change their lovers often take some sexual disease almost invariably.

The two principal sexual diseases are syphilis and gonorrhea. The latter does far greater harm to the body of the woman than to that of the man. Gonorrhea works its way upward in the female into the interior of the body and causes in some of the lower internal organs severe inflammation and suppuration. Gonorrhea frequently makes the woman a chronic invalid, permanently unable to work. The poison of the disease is liable also to get into the eyes of the baby as it is born and make it blind.

Syphilis is a disease that lasts for years, which poisons the whole body and not seldom leads to the severest disfigurements and after-troubles. Stillborn children are a frequent consequence of syphilis.

Even when the person affected has no longer any manifestations of the disease it is liable to be transmitted to the offspring and induce in them serious forms of the disease.

Hence the following advice should be taken to heart:

1. Always be on your guard, so that a single hour under the influence of liquor may not rob you of your honor, your health, your money-making capacity and your life's happiness.

Close your ears to the persuasions of go-between women. These women profit by your ruin.

Be moderate in your indulgence in beer and other intoxicating liquors, or better still, avoid them altogether, especially when in company with men, and above all, at a dance.

2. If you have once yielded yourself to a man you must always be on the lookout for the injurious consequences that are liable to follow.

Examine your body for a long time afterward with the greatest care.

If signs of being in a family way develop, then go and state your case to some benevolent-minded woman. In all the larger cities there are societies which come to the aid of a girl in this condition, and mediate between her and her parents, as also with her seducer.

Smarting and itching in the private parts, especially a discharge not noticed before, suggest gonorrhea has been taken. Any sore or lump or ulceration on the private parts, any eruption or sore throat, suggests infection with syphilis.

On finding these signs, which often do not appear until after three or four weeks, go at once to some doctor (and always to a registered physician), a man or a woman doctor (never to a nature healer or quack). If these diseases are treated correctly from the first their course is generally mild. Then and then only, as a rule, can a complete cure be effected.

It is not enough, of course, merely to go and see the doctor. His directions, especially his instructions in regard to the most careful cleanliness, must be strictly followed in all points.

3. If you have taken a sexual disease then you must heed the following advice:

Until the doctor declares that you are entirely cured all further sexual relations are strictly forbidden. If you act contrary to this rule you lose all claim to sympathy, your behavior is criminal, and you are liable to severe penalties.

You must not get married until the physician has given his consent. Otherwise your husband may take the disease from you, and your children may be diseased.

Every girl should also try to make sure that her future husband does not suffer from a venereal disease.

At every later sickness, at every pregnancy, at every sickness of your child, you must tell the attending physician of your former sexual disease, in your own or your child's interests. The physician is bound by law to the most absolute secrecy; you can confide in him without reserve. Your telling of your former sexual disease will in many cases show him the way to treat the new trouble and the pregnancy.

4. If you have had sexual intercourse and yet have not got in a family way nor taken a sexual disease do not let yourself be lulled into security. The warnings of this notice are still binding.

5. Contagion with syphilis may occur without sexual relations. For instance, a healthy wet nurse may take the disease from a syphilitic child, a healthy child from a syphilitic wet-nurse. Consequently before taking such a position both wet-nurse and child should be examined by a physician.

Syphilis may also be transmitted by a kiss and by the common use of eating and drinking utensils; gonorrhea by handkerchiefs, bandages, bed-linen, sponges, syringes and the like.

Consequently, be on your guard here also. Practice always the most painstaking cleanliness.

Heed well the advice which this circular gives you. Your happiness and your health lie in your own hand.

Nursing Tuberculous Patients.—Dr. Walter A. Griffin, in an article on this subject in the *Journal of the Outdoor Life*, calls attention to the fact that the nursing of tuberculosis patients is different in many ways from the nursing in other diseases. In any disease, he says, the patient has to be governed by the attendant, and the greatest tact is required. In tuberculosis the task is especially hard since in many cases the patient feels stronger than he really is, and if left to himself would frequently overtask his strength. From the nurse's standpoint there are three general classes of tuberculous patients, (1) those in the last stages, who are about to be relieved of their suffering; (2) those who, either at first or after having been under treatment, are taken acutely ill, but who have a fair show of recovery, and (3) ambulant (walking) cases. In the first class of patients attendance does not differ in great degree from that of any terminal illness. There is need of alleviating pain, quieting nervous fears, helping and consoling as only a good nurse can. It is not necessary to force the patient to be out in cold weather, to stuff him with food, or to chill him with cold baths unless he himself wishes it, as occasionally happens. For example, patients at times grow so used to fresh air that they will not be denied it, being made more uncomfortable if housed up. If the patient has begun on the treatment, it will at times awaken his suspicions if any laxity is shown. The sputa must be collected and destroyed with the greatest care when the patient is in this stage, and this duty usually falls to the nurse. The only rule to be insisted on is that the sputum must not become dried before it is destroyed by heat. In patients of the second class there is the comforting thought that recovery is not impossible; that the patient will without doubt get about again, and possibly be cured. It will probably be necessary to preach this gospel of hope many times to both patients and friends. Frequently the patient sees the bright side sooner than the rest, especially in these days when none speak of failure in the treatment of consump-

tion. But it is just as important that the courage of the rest of the family be sustained, so that they may reflect their hope to the patient, for there is nothing so discouraging as apprehension on the part of those near and dear. When a patient has so far recovered that he can be up and about, that is, when he becomes an ambulant case, the duties of the nurse are not so arduous. Unfortunately, at this time the patient frequently thinks that he can now dispense with a nurse altogether, and this is a mistake, since there are always times when a little watchful care will obviate the necessity of a return to bed.

A Plea for the Neurasthenic.—In an article on this subject in the *Montreal Medical Journal*, Dr. D. A. Shirres says that it is difficult and sometimes impossible to distinguish between neurasthenia and hysteria, as both conditions are due to cerebral exhaustion. In the typical neurasthenic, the marked insomnia, inability to concentrate the attention, defective memory, restlessness, fretfulness, irritability of temper, hypersensitiveness, discomforts about the head and neck, exaggeration of the reflexes, feeble pulse of low tension, and the constancy of the above symptoms, the length of time which the disease lasts as well as of the slow progress toward recovery, are diagnostic, as compared to hysteria, where there are marked psychical disturbance, and motor and sensory paralyses, the symptomatology being extremely variable in its nature and constancy. Dr. Shirres states that even physicians do not fully appreciate the magnitude of the disorder present in these cases. While gross diseases of the nervous system compel attention, he says the effects of ill health, suffering and incapacity produced by functional diseases are even more serious and far-reaching. In enumerating the symptoms of neurasthenia and differentiating it from hysteria *per se*, he states that the neurasthenic is likely to have hysterical symptoms. He declares that such a patient when obviously suffering from exhaustion should not be scolded or scoffed at, as the suffering is real. A physician should take time to listen patiently to all that the patient may wish to tell and should avoid the appearance of being in a hurry, as it is necessary that the patient should have implicit faith in his medical adviser. Treatment, he says, may be largely by suggestion, though it may be necessary to give tonics. Valerian and asafetida, he says, are useful, but bromids must be carefully used as they are liable to increase rather than to diminish the exhaustion present. Symptoms must be treated as they arise, for example, counter-irritation in local spasms, ice-bags, cold douches, etc., to relieve headache. Most remedies, he states, lose their efficacy after a time and new methods must be tried in order to exert the necessary psychic influence over the patient.

Relation of the Thyroid to Ichthyosis.—Moore and Warfield, in the *Journal of the Missouri State Medical Association*, report an interesting case of so-called fetal ichthyosis. The mother, an average-sized woman, with red hair and a freckled skin, entered the Bethesda Maternity Hospital in St. Louis, Aug. 10, 1905. She gave a history of a pregnancy with labor at the seventh month six years previously. At that time she was attended by a negro midwife, who would not allow her to see the child, which was dead, but buried it at once. During the night of August 9 (at seven months), the membranes ruptured and the following day she entered the hospital after a journey of 40 miles, during which the liquor amnii escaped freely. Pains began at 8 o'clock on that evening and the child was born at 7 p. m. the next day. The placenta came away spontaneously a few minutes later. It was intact and normal in appearance, and rather friable. Nothing abnormal was noted about the membranes or cord. The child, a male, cried vigorously at birth and presented a repulsive sight. It looked as though it had outgrown its skin and had burst through it. The entire surface of the body was covered by irregularly shaped plates of thickened epidermis, from 2 to 4 mm. thick, of an ivory color, separated by furrows of a dark red or purplish hue. The greatest thickening occurred about the head, producing marked ectropion of the upper eyelid and holding the mouth permanently open. The nose was rudimentary and there was little attempt at the formation of ears. The mucous membrane of the mouth and throat appeared normal; the glans penis was uncovered though the skin of the penis and that about the rectum was thickened. The hands and feet were distorted, the skin being drawn tightly over the bones; the fingers and toes were rudimentary. The child lived four days and during that time was fed by a dropper, suction being impossible. The skin was cold and clammy throughout, and the temperature was subnormal. All bodily functions were properly performed till death. At autopsy, eighteen hours after death, the portions of the skin which had been white were found to be dull-brownish in color, and the skin was as tough as leather. All the organs were congested. The thyroid and thymus were both small, and the other viscera showed no marked macroscopic changes. The microscopic changes in the thyroid were rather remarkable. These consisted in an enormous increase in the connective tissue of the gland, and an almost complete lack of colloid material and alveolar formation. Wherever it was apparent that alveoli probably existed, there were columnar cells lining the alveolus, and the center of the alveolus was occupied by granular material, degenerated cells, both cells with deeply staining nuclei, and those larger, with vesicular oval nuclei. At no place did it resemble the normal gland. There was marked atrophy of the thymus gland, with calcification of Hassall's corpuscles. The chief change in the skin was the enormous thickening in the horny layer. The authors state that this case supplies a deficiency in the literature in that there was a complete microscopic examination of the fetal adnexa, and they call attention to the fact that in only two of the recorded cases is the thyroid gland specially mentioned. They conclude by advising a careful study of the thyroid in cases of this disease which come to autopsy.

Climatic Conditions of Salt Lake City.—The committee of the Salt Lake County Medical Society, appointed for the purpose, has made a most interesting report on the climatic conditions of this region. The report starts with a review of the discovery and the colonization of the district, referring first to Father Silvester Veles Escalante, who, with eight of his companions, encamped at the mouth of the Provo, July 4, 1776. The report states that the great Salt Lake has much to do with the atmospheric conditions of that part of Utah, and that its influence extends for a radius of over 50 miles. Bathing in salt water is considered to have beneficial influences on a number of diseases, especially rheumatism. The range of temperature for that region is about 100 degrees. Changes in temperature are rarely abrupt. There is an average of 270 clear days in the year. The relative degree of humidity for a period of three years, from 1901 to 1903, inclusive, showed an average for Salt Lake City of 49.3. The uniform dryness of the atmosphere is one of its distinguishing features. During the summer months the humidity or moisture increases in the southern part of the state, but in Salt Lake City the relative degree of humidity is seldom more than two grains to the cubic foot. Hay-fever sufferers, asthmatics and sufferers from bronchitis are benefited and often cured by a stay in this climate. This is probably due, in part at least, the report states, to the lack of sudden changes in temperature. It takes several days for a change of 40 degrees to take place. There is no dew; the nights are as dry as the days. There is no rainy season, but periodically throughout the summer there are refreshing showers. Utah is said to be richly supplied with mineral springs which rival those of Europe in their therapeutic properties. The report concludes with an enumeration of the advantages of Salt Lake City as regards schools, hospitals, water supply, clubs, hotels, churches, etc.

Obsolete Wisdom.—An editorial in the *Medical Review of Reviews* says: "A very successful practitioner of our acquaintance was in the habit of assuring his office students that 'if they never gave anything which would harm their patients they would succeed in practice,' and therein was conveyed a fundamental truth which will never be out of date." The first

duty of the physician, therefore, according to the editor, is to do nothing at all, as thereby he will assuredly not give anything that will do harm. What a despicable lot of doctors there must be in that vicinity if this be the "fundamental" truth to be inculcated! Does the doctor tell his patients that? Are they willing to pay him for "services" on that basis? If so, they are more easily pleased than any we ever attended. The above is a type of the detracting, nasty slurs that are being hurled at us by quacks and others interested in lowering the regular profession in the eyes of the public. It is really too bad to hear it from one of ourselves. Speak for yourself, brother, if you want to talk that way, but don't make any claim to speak for the rest of the profession. For the vast majority of American physicians it is a libel. Moreover, if the man quoted practiced on that basis, we doubt if he could have been so "very successful" as the editor affirms. How could he be, if nonentity and pretense were the basis of his work?—*Clinical Medicine.*

Book Notices

The Food Factor in Disease. Being an Investigation Into the Humoral Causation, Meaning, Mechanism, and Rational Treatment, Preventive and Curative of the Paroxysmal Neuroses, etc., and Other Degeneration. By F. Hare, M.D., vols. 1 and 2. Cloth. Pp. 497 and 535. Price, $10.00. New York: Longmans, Green & Co., 1905.

The author seems to have convinced himself, apparently by purely deductive reasoning, that in certain conditions carbonaceous material can accumulate in the blood and give rise to pathologic phenomena. This condition he terms "hyperpyremia," and he seems to consider it an essential, though not necessarily the sole factor in many disorders, and seeks to establish his theories by clinical facts. He also suggests that the paroxysmal neuroses depend on hyperpyremia and consitute acarbonizing processes. He lays great stress on the regulation of diet and on fresh air, sleep, and judicious exercise. In each individual case he determines by experiment the minimum carbonaceous intake compatible with carbon equilibrium. He quotes freely and at length from many authorities. He considers the three methods of dietetic treatment: restriction of food generally, without regard to its nature; restriction of proteid, and restriction of carbonaceous foods, and gives his reasons for preferring the last. In ordering a diet for a patient Hare states that he never gives verbal instructions such as, a little, etc., as they are too indefinite. He writes his instructions in full—a custom to be commended. Bread and fats, he says, should be as carefully weighed as drugs. Migraine and asthma, which are generally believed to be due to an excess of purin bodies, and which, therefore, are usually treated by a purin-free diet, Hare thinks, may be more effectively treated by restricting the amount of carbohydrates and fats and allowing the patient meat, fish and fowl. His theories are likely to have many opponents, though they are worthy of consideration.

A Text-Book on Prescription-Writing and Pharmacy, with Practice in Prescription-writing, Laboratory Exercises in Pharmacy and a Reference List of the Official Drugs, Especially Designed for Medical Students. By B. Fantus, M.D., Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons, Chicago. Second Edition. Thoroughly Revised and Adapted to the Eighth (1905) Edition of the U. S. Pharmacopeia. Cloth. Pp. 404. Price, $3.00 net. Chicago: Chicago Medical Book Co., 1906.

Part I is devoted to the writing of prescriptions and contains chapters on form and language of prescriptions, determination, quantities in prescriptions, the proper composition of prescriptions of various kinds, and prescription ethics. The author realizes that graduates in medicine are often sadly deficient in the art of prescription writing and because unable to originate prescriptions to meet the needs of their practice too readily fall into the traps set for them by the proprietary medicine merchant. This book should do much toward making graduates in medicine independent of ready-made proprietary mixtures. Part II is devoted to the pharmaceutical preparations of the various remedies, classified in the conventional way. Part III contains a brief description of the official drugs and their preparations. It is a relief to find that all chemical symbols and formulas have been omitted from the text and one can but regret that the same considerations which led the author to omit chemical symbols did not also decide the omission of such definitions as: "Eugenol—an unsaturated aromatic phenol, etc." and "Santonin—the anhydrid of santonic acid, etc." It is also to be regretted that this book, otherwise replete with well-selected, concise information, should give room to the botanic description of drugs. One can readily imagine the effect on the average student of medicine of the following: Lobelia: "Leaves alternate, pale green, pubescent; stem coarsely angled, hairy, terminating in long racemes of pale-blue flowers; capsules inflated, containing numerous minute seeds; odor slight, irritating; taste strongly acrid."

Clinical Obstetrics. By R. Jardine, Glasgow. Ninety-nine Illustrations and a Colored Plate. Second Edition. Cloth. Pp. 609. Price, $4.75. New York: Rebman Co. 1905.

Jardine calls attention to the fact that most practitioners gain their experience and knowledge of obstetrics after graduation, and states that it is for these men that his book is intended. Nine chapters are devoted to consideration of the complications of pregnancy, and one to the management of normal labor. Hemorrhages occurring in various stages of pregnancy and labor are considered at length. Complications of labor and the puerperium are discussed and obstetric operations are treated of exhaustively. The concluding chapters deal with accidents to the child during delivery, abnormalities and diseases of the new-born infant, and infant feeding. Jardine emphasizes the importance of breast nursing to the child and states that when it is impossible for a mother to nurse her child a good wet nurse is the best substitute. He gives directions for preparing the various artificial foods and for modifying cow's milk. An appendix contains statistics of thirty years' work in the Glasgow Maternity Hospital.

Lectures on Clinical Psychiatry. By E. Kraepelin. Authorized Translation from the Second German Edition. Revised and Edited by T. Johnstone, M.D. Second Edition. Cloth. Pp. 352. Price, $3.50. New York: William Wood & Co.

American physicians will find this translation of Kraepelin's clinical lectures a very instructive work on the types and the diagnosis of mental disease. As the editor says, they are thoroughly practical and their value is enhanced by the fact that there is no psychiatric teacher at the present day whose ideas figure more largely in the literature than those of Professor Kraepelin. It will be found of value, both to the alienist and to the general practitioner, on whose judgment most frequently depends the earliest recognition and treatment of insanity when it occurs. Dr. Johnstone has appended to the lectures a classification of mental disorders in accordance with Kraepelin's latest views. The translation appears to be excellent and the avoidance of new technical terms so far as possible is a praiseworthy feature.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Assisted by H. R. M. Landis, M.D., vol. I, March, 1906. Paper. Pp. 304. Price, $6.00 per annum. Philadelphia: Lea Brothers & Co., 1906.

The subjects considered in this volume are: 1. The Surgery of the Head, Neck and Thorax, by Charles H. Frazier, M.D. 2. Infectious Diseases, including Acute Rheumatism, Croupous Pneumonia and Influenza, by Robert B. Preble, M.D. 3. The Diseases of Children, by Floyd M. Crandall, M.D. 4. Rhinology and Laryngology, by D. Braden Kyle, M.D., and 5. Otology, by B. Alexander Randall, M.D. The general get-up of the book, the paper, print and indexing are of an enduring quality and make its use not only profitable but pleasurable. Physicians are so well acquainted with Progressive Medicine that it is unnecessary to do more than indicate in a general way the contents of each volume.

Prevention and Cure of Tuberculosis. A Collection of Articles of a Popular Character on the Subject of Tuberculosis. By S. A. Knopf, J. H. Huddleston, D. A. Willey and Others. Compiled by J. R. Long. Cloth. Pp. 246. Price, $1.25. Denver: H. M. Brinker. 1905.

This is a reprint in book form of articles that have appeared in various medical journals on tuberculosis, by such men as Drs. S. A. Knopf, J. H. Huddleston, Day Allen Willey, Henry P. Loomis, Henry B. Dunham, Robert W. Craig, William N. Beggs, George E. Abbott, Guy Hinsdale, Chase P. Ambler,

Joseph Eichberg, and others. The compiler evidently had in mind supplying a book for the layman, but we are afraid that some of the matter is presented in a way that will not appeal directly to the public. The compiler, however, has made a selection of some splendid articles and, presenting them in a compact form, as is here done, will be an aid in propagating the knowledge that the public ought to have in regard to this dreaded disease.

SURGICAL NURSING and the Principles of Surgery for Nurses. By R. Howard, M.B., M.S., F.R.C.S. Cloth. Pp. 318. Price 6s. London: E. Arnold, 1905.

The basis of this book is a series of lectures on surgical nursing given to the probationers at the London Hospital. The author states that modern nursing has passed beyond the stage of passive obedience and that a nurse must now understand the principles on which a surgeon is working. The general arrangement of the subject matter is good and the language is clear and concise. The book is well illustrated. An appendix contains formulæ for enemata of various kinds, mouth washes, eye washes and dusting powders. There are also directions for preparing nourishment for "nasal feeding," for pancreatizing and peptonizing milk, and for test meals.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

CONTRACT PRACTICE.

FAYETTEVILLE, ARK., April 3, 1906.

To the Editor:—In THE JOURNAL, March 31, you very pertinently, as I think, reply to Mr. Stone, president of the Baltimore Casualty Company in reference to fees for examiners, partly as follows: "And no self-respecting physician ought to sell his services to such a corporation at wholesale, and have them retailed to the people of his own community at prices which have enabled these companies to amass a fortune, and, until recently to defy public opinion." All very true, but what of those medical gentlemen who along the lines of our railroads hold subordinate positions as "railroad surgeons," having signed an obligation to work for these corporations for less fees than they would serve the mechanics and laborers, among whom they reside. It is true that they are given a piece of cardboard, a pass. The subordinate "railroad surgeon" signs a fee bill supplied by the corporation, so contemptibly low as to shame the self-respect of most medical men who are not readily inflated by the title of "railroad surgeon." (What I say is true unless there has been a recent change, but I have heard of no complaint from these employés, and suppose they sign now as heretofore.)

W. B. WELCH, M.D.

TREPONEMA PALLIDUM.

NASHVILLE, TENN., March 31, 1906.

To the Editor:—What is the meaning and pronunciation of the term *Treponema pallidum*, as advocated by Schaudinn instead of the term *Spirochæta pallida*?

ANSWER.—In June, 1905, Vuillemin took *Spirochæta pallida* as a type of a new genus *Spironema*, using the specific name *Spironema pallidum*. As the name *Spironema* is preoccupied in zoology, having been used by Meek in 1864 for a genus of mollusks, the present correct name of the parasite under the international code is *Treponema pallidum*. The term is pronounced tree-po-nee-mah pahl-eedum. Its meaning is a pale, turning thread.

TOY PISTOLS AND OTHER SIMILAR DEVICES

A member of a machinery manufacturing firm of Claiborne, N. H., who has been instrumental in having an ordinance passed prohibiting the sale or use of toy pistols, fire crackers, exceeding 6 inches in length, canes, bombs and other contrivances using dangerous explosives, writes: "Inasmuch as I have taken this prominent stand in the matter, very likely inquiries will be made of me as to what explosives are considered dangerous, and what the limiting features are of the toy pistols and other similar devices for the use of dangerous explosives, and I would greatly appreciate any information you can give me along these lines. I assume you will be willing to give me this information as soon as you can conveniently do so, owing to your interest in this matter."

ANSWER.—The term "toy pistol" has an indefinite meaning that has led to confusion, and also to unnecessary legislation. There are two types of this implement. One is made for the shooting of small flat paper caps, and in all the records obtained by THE JOURNAL concerning tetanus there have been no instances of the disease due to infection of wounds caused by these caps. Occasionally injury to the eye is produced by particles from the exploding caps, but they seldom cause serious injury. The "toy pistol" that causes tetanus is the cheap contrivance made for the purpose of exploding blank cartridges, generally of .22-caliber. Many of the tetanus wounds are also produced by cheap .22-caliber revolvers, and occasionally by blank cartridges discharged in larger-sized revolvers. As to the other forms of Fourth of July explosives it may be said that there is none that has not at some time or other caused serious injury. We have records of tetanus following burns from rockets, and even from the explosion of large set pieces in the hands of professionals. However, few serious injuries have been produced by any of the display fireworks used at night, or from the small-sized firecrackers, although all of these have caused much property loss from fires. The small paper torpedoes are also practically harmless. If we can get rid of the blank cartridge, the giant cracker, and the toy cannon, the mental and physical suffering of the Fourth will be practically abolished.

State Boards of Registration

COMING EXAMINATIONS.

MISSOURI State Board of Health University Medical College, Kansas City, April 16-18. Secretary, J. A. B. Adcock, Warrensburg.

ILLINOIS STATE BOARD OF HEALTH, Northwestern University Building, Chicago, April 18-20. Secretary, J. A. Egan, Springfield.

Connecticut March Report.—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, March 13-14, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of applicants examined was 15, of whom 11 passed and 4 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Maryland Med. Coll.	(1905)	75.3
Tufts College Medical School	(1903)	80.4
Harvard University	(1903)	81.3
Queen's University, Canada	(1904)	77.2
University of Buffalo	(1895)	85.4
College of P. and S., New York	(1903)	85.3
Yale University	(1905)	80.1
Tulane University	(1905)	82.1
College of P. and S., Baltimore	(1904)	82.3
University of Maryland	(1903)	80.4
College of P. and S., Boston	(1903)	84.8
FAILED.		
University of the South	(1905)	69.1
College of P. and S., Chicago	(1905)	69.1
Georgetown University	(1904) 72.8; (1905)	73.4

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending April 7, 1906.

Lambert, Samuel E., asst.-surgeon, at expiration of his present leave of absence will proceed to and take station at Fort Wright, Wash.

Duncan, Louis C., asst.-surgeon, on arrival at San Francisco, will proceed to and take station at Fort Missoula, Mont.

Richard, Charles, surgeon, is detailed to represent the Medical Department of the Army at the 15th International Congress of Medicine, to be held at Lisbon, Portugal, April 19 to 25.

Egan, Peter R., surgeon, retired from active service, April 2.

Marrow, Chas. E., asst.-surgeon, granted ten days' leave of absence.

Barney, Charles N., asst.-surgeon, advanced from grade of first lieutenant to that of captain, with rank from January 12.

Appel, D. L., deputy surgeon-general, on arrival at San Francisco, will assume charge of medical supply depot in that city, relieving Lieutenant-Colonel Louis Brechemin, deputy surgeon-general.

Brechemin, Louis, deputy surgeon-general, on being relieved from charge of medical supply depot, San Francisco, will proceed to New York City, and assume charge of medical supply depot in that city, relieving Lieutenant-Colonel William B. Davis, deputy surgeon-general.

Davis, William B., deputy surgeon-general, on being relieved from charge of medical supply depot, New York City, will proceed to Chicago, and report in person to the commanding general, Department of the Lakes, for duty as chief surgeon of that department.

Reagles, James, contract surgeon, ordered from Fort Keogh, Mont., to Fort Snelling, Minn., for temporary duty.

Chase, Alpha M., contract surgeon, ordered from Fort Reno, Okla., to Fort Clark, Texas, for temporary duty.

Mason, George L., dental surgeon, left Key West Barracks, Fla., and arrived at Fort Morgan, Ala., for duty.

Casaday, George H., dental surgeon, returned to duty at Army General Hospital, Presidio of San Francisco, from leave of absence.

Stone, Frank P., dental surgeon, left Army General Hospital, Presidio of San Francisco, on leave of absence.

Ware, William H., dental surgeon, left Fort Logan, Colo., for Fort Wingate, N. M.; and ordered to visit in succession Fort Apache, Ariz.; Whipple Barracks, Ariz.; and Fort Huachuca, Ariz.

Navy Changes.

No changes in the Medical Corps of the Navy for the week ending April 7, 1906:

Public Health and Marine-Hospital Service.

List of changes and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending April 4, 1906:

White, J. H., surgeon, granted leave of absence for two days under Paragraph 189 of the Regulations.

Rosenau, M. J., P. A surgeon, detailed to represent the service at session of the American Medical Association at Boston, Mass., June 5-8, 1906.

Fricks, L. D., P. A. surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Fort Stanton, N. M., reporting to the medical officer in command for duty and assignment to quarters.

Stansfield, H. A., P. A. surgeon, granted two days' leave of absence under Paragraph 191 of the Regulations.

McClintic, T. B., P. A. surgeon, relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to San Francisco Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

Goldberger, Joseph, P. A. surgeon, granted extension of leave of absence for two days from May 2, 1906.

Olsen, E. T., asst. surgeon, relieved from duty at New York and directed to proceed to Chicago, reporting to the medical officer in command for duty and assignment to quarters.

Adams, F. B., acting asst.-surgeon, granted leave of absence for fifteen days, from April 6.

Frissell, C. M., acting asst.-surgeon, granted leave of absence for ten days, from March 22, 1906.

Luckey, J. W., acting assistant surgeon, granted leave of absence for thirty days, from March 30, 1906.

McKinley, W. R., acting asst.-surgeon, granted leave of absence for thirty days, from March 23, 1906.

Van Ness, G. I., pharmacist, directed to proceed to Baltimore, for temporary duty, on completion of which to rejoin his station in Washington, D. C.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended April 6, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, March 17-24, 6 cases.
Florida: Jacksonville, March 24-31, 2 cases.
Indiana: Indianapolis, March 18-April 1, 6 cases.
Kansas: General, Feb. 1-28, 233 cases; Leavenworth, March 1-31, 5 cases.
Louisiana: New Orleans, March 24-31, 9 cases.
Maryland: Baltimore, March 24-31, 1 case.
Massachusetts: Boston, March 24-31, 3 cases.
Michigan: Ann Arbor, March 24-31, 1 case.
Missouri: St. Louis, March 24-31, 5 cases.
Nebraska: Omaha, March 17-24, 1 case.
New York: New York, March 24-31, 2 cases.
North Dakota: Grand Forks County, Feb. 1-28, 1 case; McHenry County, 1 case.
Ohio: Cincinnati, March 23-30, 3 cases.
South Carolina: Greenville, March 17-24, 2 cases.
Tennessee: Memphis, March 24-31, 8 cases.
Washington: Spokane, March 17-24, 1 case, imported.
West Virginia: Wheeling, March 24-31, 2 cases.
Wisconsin: Appleton, March 24-31, 3 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, Feb. 10-24, 2 cases, 1 death.

SMALLPOX—FOREIGN.

Africa: Cape Town, Feb. 17-24, 19 cases.
Brazil: Pernambuco, Feb. 14-28, 23 deaths.
Canada: Toronto, March 17-24, 2 cases.
Cape Verde Islands: March 29, present.
Chile: Iquique, Feb. 17-24, 6 cases, 2 deaths.
China: Shanghai, Feb. 17-24, 2 deaths.
France: Paris, March 10-17, 13 cases.
Gibraltar: March 11-18, 10 cases.
Great Britain: Bristol, March 17-24, 1 case.
Greece: Athens, March 8-15, 1 death.
Honduras: Puerto Cortez, March 17-24, present; San Pedro, March 17-24, present.
India: Bombay, Feb. 13-March 6, 24 deaths; Calcutta, Feb. 17-24, 173 cases, 173 deaths; Madras, Feb. 24-March 2, 50 deaths; Rangoon, Feb. 17-24, 77 deaths.
Italy: General, March 10-17, 9 cases.
Japan: Formosa, Feb. 1-28, 12 cases; Yamaguchi Ken, March 6, 27 cases, 4 deaths.
Russia: Moscow, March 3-10, 7 cases, 3 deaths; Odessa, March 3-17, 24 cases, 2 deaths; St. Petersburg, Feb. 24-March 10, 4 cases.
Spain: Barcelona, March 10-20, 7 deaths; Seville, Feb. 1-28, 12 deaths.
Turkey: Constantinople, Feb. 25-March 11, 2 deaths.

YELLOW FEVER—FOREIGN.

Mexico: Merida, March 11-17, 1 case, 1 death; Tehuantepec, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Feb. 10-24, 11 cases, 10 deaths; Provinces, Feb. 10-24, 371 cases, 293 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Feb. 17-24, 65 deaths; Rangoon, 2 deaths.

PLAGUE—FOREIGN.

Australia: Freemantle, Jan. 6-Feb. 19, 5 cases, 2 deaths; Perth, Jan. 6-12, 3 cases.
India: General, Feb. 17-24, 9,717 cases, 8,312 deaths; Bombay, Feb. 13-March 6, 484 deaths; Calcutta, Feb. 17-24, 31 deaths; Madras, Feb. 24-March 2, 5 deaths; Rangoon, Feb. 17-24, 19 deaths.
Japan: Formosa, Feb. 1-28, 94 cases, 69 deaths.
Mauritius: Jan. 25-Feb. 8, 3 cases, 1 death.

Medical Organization

THE GREAT WORK BEING DONE IN TEXAS.

J. N. McCormack, M.D.
Chairman of the Committee on Organization of the American Medical Association.
BOWLING GREEN, KY.

The leaders of the profession of Texas were among the first to catch the real spirit of modern organization. Loyal, and tenacious of their opinions, many of the older members were reluctant to join in the movement at first, but, once convinced of its merits and possibilities, they have vied with the young men and each other in promoting it. I was present at the reorganization at San Antonio in 1903, and then and in subsequent visits these men have constantly reminded me of the Japanese in their activity, resourcefulness and aggressive determination.

They have had more than the usual difficulties to encounter, and have made some serious mistakes, as will appear presently, but have overcome the former and corrected the latter with such commendable temper, courage and wisdom as constantly to challenge admiration; and the good results of all this were and are to be seen at every stage of the proceedings.

Starting out with few county societies and a total state membership of 435, in one year's time 160 counties had been organized, and the membership had grown to 2,390, and is expected to reach over 3,000 before the next annual meeting, which is to be held during the present month. I can testify from personal observation that the increase in professional interest and enthusiasm is even greater than the above figures would indicate, and is still growing.

At the outset the difficulties confronting the active, earnest, self-sacrificing councilors often seemed insurmountable, but they had the genuine reform spirit and usually were able to turn these into actual advantages. For instance, there were a number of large, influential district societies to which many physicians were naturally wedded, and which at one time promised to be an endless source of contention, but, with the exercise of tact and good temper on all sides, nearly all of these were promptly woven into the new plan and made an element of real strength. The same good judgment was followed with many other of the obstacles which have given so much trouble elsewhere.

In the same spirit, their arrangements for my itinerary were more prompt and comprehensive than those heretofore made in any other state. As soon as I could give them the date of my first appointment and the length of time at their disposal, a meeting of the council was called, and, with the assistance of an experienced passenger agent, the trip was carefully planned, covering every section of the state to the best advantage in the least possible time. This was so well done that I publish the itinerary in full as a model for others who may be charged with a similar duty. See page 1134.

The widest possible publicity was given to the appointments, through the *Texas State Journal of Medicine* and the secular press, and personal letters were sent to all medical men by their respective councilors and county secretaries, explaining the purposes and importance of the meetings, and urging attendance. Later it was decided, on my advice, to extend the invitation to the laity, and this was done with most satisfactory results in many sections, although not with the full benefit which would have been possible if its desirability could have been foreseen earlier.

In magnificent distances, as in many other respects, Texas is truly an empire, but the councilors attended and actively participated in every meeting in their respective districts, and frequently in others, and the president and secretary of the Texas State Association, and chairman of the council, came to meeting after meeting, often involving hundreds of miles of travel and three or four days in time. It is largely to this enthusiastic, self-sacrificing devotion to duty on the part of those honored with office which has infused the desire for better things into every element of the profession, and which promises so much for the future of this great state.

The meeting at San Antonio may be taken as fairly typical, although the attendance of the laity was not such a distinctive feature as it was made subsequently. Unfortunately, in the excess of a characteristic hospitality, much time was consumed in an elaborate banquet which was needed for the intensely practical discussion which followed. In addition to the entire regular profession, there were present several physicians of other schools, members of the judiciary, the prosecuting attorney, legislators and many other representative laymen. This historic, health-resort city has been overrun with charlatans for years, some of them practicing under assumed names, or under authority of certificates issued to others, as is so common with this class everywhere, but so strongly had they seemed entrenched that, even after the profession had become effectively organized for other purposes, it had feared to attempt to dislodge them. After my opening talk this was taken up as one of the subjects for discussion. The provisions of existing statutes, and the possibility and methods of securing additional legislation, were frankly gone into, and it soon developed, as I had found to be the case everywhere, that the laymen took quite as active and intelligent interest in all of these matters as the medical men. They expressed surprise at the conditions unfolded to them, and that the laws had not been enforced or strengthened, and promised a most cordial co-operation in any proper efforts having these ends in view. It was the same with the "patent medicine" and other similar evils, and with securing and executing laws for the protection of the people against pestilence, and especially against consumption, typhoid fever, diphtheria, cholera infantum, dysentery and other everyday household plagues. These laymen had either ignored these matters entirely or had underestimated their practical importance, and only the plain, common-sense instructions which fearless, progressive physicians alone can give was needed to enlist their active interest.

The attendance and participation of laymen in the regular discussion marked a new feature in the growth and scope of my work and is entitled to more than a passing mention. I had often addressed distinctively popular audiences, and representative laymen had been present at some of the meetings as far back as the trip in Pennsylvania, but these had been incidental occurrences rather than part of a fixed plan. The advisability of making it a permanent feature of the work, the beginning of a campaign of education, as it were, had long been in my mind and the subject of discussion with my colleagues. After the San Antonio meeting the public was cordially embraced in every invitation. Lawyers, ministers, teachers, legislators, farmers, business men, city and county officials, and especially the women, were urged to attend and to participate in the discussions, and with most satisfactory results. It has been found easy to demonstrate to any intelligent layman that his physician, and the profession as a whole, has no interest which he does not share, and that the daily safety and well-being of his family is inseparable from the continued prosperity and competency of his physician, and of the profession of his county, state and country as a whole.

It was easy to interest the leaders of this profession almost everywhere in any practical proposition looking to the advancement of their own and the public interests. Weekly meetings were begun very generally, and regular postgraduate courses were established shortly after my visits at Waco, Austin, Tyler, Fort Worth and Amarillo and other places; that at Waco meeting three nights in each week and giving a full course in anatomy with demonstrations on the cadaver, combined with some practical subject or a clinic for each evening. In several counties conferences with the laity have been continued as the result of my visit, and, in some, joint meetings have been arranged with the farmers' organizations for the purpose of working out some systematic plan of compensation for medical services for the tenant class and other similar matters.

The harmony which had come to the profession in nearly every county in two or three years, as a result of the frequent meetings, and the promise of co-operation in advancing its varied interests, was most gratifying, and even exceeded my expectations. Almost the only discordant note heard was at Dallas, where a strong and excellent profession, with great possibilities open to it, was divided by a school fight, on the plane usually found, and not relieved by the high personal and professional character and abilities of those leading in it. So far as I could judge, there was no interest involved not entirely personal and selfish, and yet the antagonism was as outspoken and implacable as if some great principle was involved. Such conditions ought not to be tolerated in any medical center, and, knowing from my large experience the irreparable harm which school feuds have brought to us in the past, I frankly advised the profession of Texas not to send students to the schools in Dallas until those engaged in molding the character of young doctors could at least set an example in peace and harmony in their own community.

FROM	TO	VIA.	DATE.	LEAVE.	ARRIVE	DATE OF ARRIVAL	MILEAGE
El Paso	San Antonio	G. H. & S. A.	Oct. 31	8:00 p. m.	8:00 p. m.	Nov. 1	623 Miles.
San Antonio	Austin	L. & G. N.	Nov. 3	8:00 a. m.	11:00 a. m.	Nov. 3	79 "
		H. & T. C.	Nov. 3	10:10 p. m.	6:10 a. m.	Nov. 4	166 "
Austin	Beaumont	T. & N. O.	Nov. 4	6:30 a. m.	9:05 a. m.	Nov. 4	84 "
		T. & N. O.	Nov. 5	7:25 a. m.	10:15 a. m.	Nov. 5	84 "
Beaumont	Galveston	G. H. & N.	Nov. 5	10:30 a. m.	12:10 p. m.	Nov. 5	57 "
		November 5, Sunday, in Galveston.					
Galveston	Houston	G. H. & N.	Nov. 7	10:30 a. m.	12:10 p. m.	Nov. 7	57 "
Houston	Waco	H. & T. C.	Nov. 8	10:30 a. m.	5:25 p. m.	Nov. 8	185 "
Waco	Cleburne	M. K. & T.	Nov. 9	4:50 a. m.	8:05 a. m.	Nov. 9	100 "
Cleburne	Fort Worth	G. C. & S. F.	Nov. 9	7:20 p. m.	8:30 p. m.	Nov. 9	30 "
		T. & P.	Nov. 11	9:00 a. m.	12:45 p. m.	Nov. 11	31 "
Fort Worth	Mineral Wells	W. M. W. & N. W.	Nov. 11				20 "
		November 12, Sunday in Mineral Wells.					
Mineral Wells	Dallas	W. M. W. & N. W.	Nov. 13	7:35 a. m.	11:35 a. m.	Nov. 13	63 "
		T. & P.	Nov. 13				26 "
Dallas	Greenville	M. K. & T.	Nov. 14	11:20 a. m.	1:15 p. m.	Nov. 14	54 "
Greenville	Tyler	M. K. & T.	Nov. 15	7:00 a. m.		Nov. 15	51 "
		L. & G. N.	Nov. 15	2:45 p. m.	3:30 p. m.	Nov. 15	26 "
Tyler	Pittsburg	St. L. S. W.	Nov. 16	12:55 p. m.	3:17 p. m.	Nov. 16	52 "
Pittsburg	Texarkana	St. L. S. W.	Nov. 17	4:16 a. m.	7:00 a. m.	Nov. 17	76 "
Texarkana	Paris	T. & P.	Nov. 18	6:20 a. m.	9:48 a. m.	Nov. 18	91 "
		November 19th, Sunday, in Paris.					
Paris	Bonham	T. & P.	Nov. 20	7:39 a. m.	9:20 a. m.	Nov. 20	37 "
Bonham	Sherman	T. & P.	Nov. 20	9:00 p. m.	10:04 p. m.	Nov. 20	26 "
Sherman	Denison	H. & T. C.	Nov. 21	10:35 p. m.	10:53 p. m.	Nov. 21	10 "
Denison	Galnesville	M. K. & T.	Nov. 22	4:35 p. m.	6:20 p. m.	Nov. 22	41 "
		M. K. & T.	Nov. 23	6:20 p. m.		Nov. 23	89 "
Galnesville	Amarillo	Ft. W. & D. C.	Nov. 23	12:45 p. m.	8:45 p. m.	Nov. 24	220 "

Under the general conditions portrayed in the foregoing, and seemingly so favorable on the surface, there is ample ground for serious thought, and for grave apprehension for the future, on the part of every thoughtful member of the profession in Texas. Both the medical and health laws are far from satisfactory, and, so far, it has been impossible to unite even the leaders of the profession on the character of the changes to be made. At the last session of the general assembly the members of the committee having the proposed legislation in charge were hopelessly divided in their own counsels, and, without a recognized leader, their raw medical troops, over 2,500 strong, were led against the small, compact army of quackery, which knew what it wanted, and how to go after it, with a better result than might have been expected a drawn battle. Senators and representatives should have the unselfish principles underlying health and medical legislation explained to them in the county societies and by their family and home physicians while they are candidates and in a receptive mood. Nearly every vote can be controlled by education, moral suasion, and home influence in advance, while only harm can result from bluster and threats later, when the current has set in the wrong direction.

Our friends in Texas have accomplished so much in a short time within their own ranks, they are so strong in numbers, they have such a domain, with widely separated men of equal standing and importance, that further defeats may be necessary before they can get together in these matters and unite on a leader for legislative work in whom they can place implicit confidence. They must agree among themselves, and one man, in touch with, and having the full confidence and cooperation of, the profession in each county, and not a committee, must have charge of the real work. Even if it requires years of waiting it would probably be better for them not to enter the legislative lists again voluntarily until this can be done. They have the advantage of a strong and ably edited state journal for frequent inter-communication; they have an accomplished and devoted secretary and executive officer, and a great and practically united profession, and with the discipline which frequent meetings and co-operative work will bring to them, they can and ought to be an example for other states in the field of organized medicine.

Society Proceedings

COMING MEETINGS.

American Medical Association, Boston, June 5-8.

Medical Assn. of State of Alabama, Birmingham, April 17.
Medical Society of State of California, San Francisco, April 17-19.
Florida Medical Association, Gainesville, April 18.
Medical Association of Georgia, Augusta, April 18.
Mississippi State Medical Association, Jackson, April 18.
South Carolina Medical Association, Columbia, April 18.
State Medical Association of Texas, Fort Worth, April 24-26.
Arizona Medical Association, Phoenix, April 24-25.
Medical and Chirurg. Faculty of Maryland, Baltimore, April 24-26.
Nebraska State Medical Association, Lincoln, May 1-3.
New Mexico Medical Association, Albuquerque, May 2.
American Therapeutic Society, New York City, May 3-5.
Oklahoma Medical Association, Oklahoma City, May 8.
Indian Territory Medical Association, Oklahoma City, May 8.
Utah State Medical Association, Salt Lake City, May 8-9.
Nevada State Medical Society, Reno, May 8-9.
Louisiana State Medical Society, New Orleans, May 8-10.
Arkansas Medical Society, Hot Springs, May 8-10.
Montana State Medical Association, Butte, May 9-10.
Kansas Medical Society, Topeka, May 9-11.
American Climatological Assn., Atlantic City, N. J., May 12-14.

CHICAGO SURGICAL AND CHICAGO MEDICAL SOCIETIES.

Joint Meeting held Feb. 28, 1906.

The Vice-president of the Chicago Surgical Society, Dr. D. W. Graham, in the Chair.

Postoperative Intestinal Obstruction.

Dr. J. M. T. Finney, Baltimore, Md., detailed 26 cases, and after referring at length to the literature of other cases, drew the following conclusions: 1. Broca's classification into early and late varieties simplifies the diagnosis. In the former class, which so frequently is associated with peritonitis, the differential diagnosis as to variety is always difficult and often impossible. In the latter, which is composed almost exclusively of the mechanical forms, it is usually easy. 2. Adhesions are the chief factor to be reckoned with in an attempt to prevent the occurrence of postoperative ileus, and efforts directed toward this end are likely to be productive of the best results. 3. That drainage exercises a marked influence in the production of adhesions can not be denied. 4. As to treatment, prompt operation is indicated in every case after palliative measures have been given a fair trial and have failed. The character of the operation depends on the nature of the obstruction and the condition of the patient. 5. The prognosis is unfavorably influenced by the presence of infection. In its absence it is excellent.

Dynamic Ileus.

Dr. John B. Murphy, Chicago, defined ileus as a train of symptoms consisting of four essential elements: pain in the abdomen, nausea and vomiting, meteorismus and coprostasis. Using this as a guide, he subdivided ileus into adynamic ileus, dynamic ileus and mechanic ileus. Under adynamic ileus he includes all of the conditions that are due to the absence of power of propulsion. Under dynamic ileus he includes the two conditions where the obstruction is due to an excess of power, and excessive contraction of the muscular wall. Under mechanic ileus he includes all the mechanical conditions, whether of the strangulation or obturation variety, which impede the advancement of the contents of the intestinal canal in a mechanical way. The cases which puzzle the general practitioner and surgeon are those included under adynamic ileus. One of the first causes of this form of ileus is strangulation of the omentum. Strangulation of the omentum produces a reflex paralysis of peristalsis. The colic which occurs with hepatic calculus is difficult to differentiate from mechanical obstruction, because there is pain, nausea and vomiting, absence of peristalsis, with distension of the bowel coming on as the result of the paralytic condition; also coprostasis if the pain is severe.

One of the very difficult conditions to diagnose differentially is the impaction of stone in the cystic duct. There is another class of cases in which the manifestations of ileus are pronounced from the ligation of pedicles, and he thinks since the practice of ligating pedicles *en masse* has ceased, there is much less vomiting after operations and fewer cases of paralytic ileus now than formerly. Gastric tetany is another condition that is mistaken for intestinal obstruction. Peritoneal trauma is a cause of paralytic ileus. The embolic type of paralytic ileus is due to two causes—interference with the nerve supply and ischemia. Temperature is never a primary symptom in mechanic ileus, not even in intussusception in children. He thought at one time that leucocytosis was going to be of enormous value in the differential diagnosis. He believed that the infective type would show a high leucocyte count, while the mechanical type would show a low leucocyte count. But he has been greatly disappointed. He has seen a 36,000 leucocyte count (differential) in mechanic ileus. He has likewise seen a 7,000 leucocyte count in a case of septic peritonitis, so that he has ceased to place any particular value on the differential diagnosis as to the number of leucocytes.

Strangulation Ileus.

Dr. Arthur Dean Bevan, Chicago, said that strangulation ileus is best studied from the standpoint of a strangulated hernia. It is a form of ileus which comes on as a strangulated hernia does, with sudden onset, shock, pain, obstruction of the bowel, vomiting, with, later, tympany, and, if unrelieved, peritonitis takes place followed by death. It is at the beginning free from temperature. The diagnosis can be made early if the surgeon has a clear mental picture of what strangulation ileus means. A long appendix or adhesions to a tube may cause obstruction. A most common cause is probably volvulus. He recently saw a case of volvulus of the entire transverse colon which caused obstruction. The forms of ileus which are described as due to strangulation in the retroperitoneal fossæ are quite infrequent. They do occur, however, and must be kept in mind. The proper treatment of a case of strangulation ileus is immediate operation. Patients with mechanical ileus die because an early diagnosis is not made, because early operation is not done, but in whom early diagnosis and early operation would have saved life.

Obturation Ileus.

Dr. William E. Schroeder mentioned the classification of Schlange, who considers obturation ileus as including compression from without, strictures, both benign and malignant tumors in the lumen of the intestine, intussusception, and the usual obturation forms, namely, from gallstones, enteroliths, foreign bodies and fecal masses. The nature of the obstruction consists in the simple closure of the lumen of the intestine, either primarily from within, or through compression from without. He discussed the symptoms of the acute forms of obturation ileus; also the diagnosis.

In obturation ileus enterotomy is of especial value in relieving the intestine of its poisonous contents and because of the simplicity of the operation. A radical operation may follow at some future time when the patient is in better condition. In strangulation ileus it is necessary to relieve the

strangulated intestine and save it from gangrene, or to resect the gangrenous portion. Cases of ileus come into the hands of surgeons far too late. Many general practitioners wait for fecal vomiting before they transfer their cases to the surgeon.

Abuse of Cathartics in Obstruction of Bowel.

DR. M. L. HARRIS, Chicago, recently saw a patient suffering from a strangulated inguinal hernia with an enormous abdomen and vomiting every few minutes, who was still trying to get his physic down between vomits; and another with acute appendicitis where the attendant wondered why no result followed the cathartics, in which an operation disclosed a very large opening in the cecum left by the sloughing off of the appendix and through which the intestinal contents chased by the cathartics had escaped into the abdominal cavity. Other cases illustrating all the varieties of intestinal obstruction were mentioned. He said that cathartics should never be given to a patient suffering with an acute abdominal trouble until a diagnosis has been made, or if not an accurate diagnosis, at least until all of the conditions which may produce obstruction have been positively excluded, and it should be remembered that these patients are never sick because the bowels do not move, but the bowels do not move because they are sick.

DR. FERNAND HENROTIN, Chicago, said there are many cases in which catharsis is given when the diagnosis is not clear, where the symptoms are not typical, so as to render the making of an accurate diagnosis more easy, and in such the administration of a cathartic is permissible. He spoke of the value of enterostomy in ileus, and of not stopping to do a radical operation in the advanced cases.

DR. FINNEY said the plea of Dr. Harris to lessen the number of cathartics given to these suffering patients is very timely. Surgeons are agreed that cathartics have a limited place, but their administration should not be overdone.

SASKATCHEWAN MEDICAL ASSOCIATION.

Regular Meeting, held at Saskatoon, March 14-15, 1906.

The constitution and by-laws prepared by the executive committee were read and adopted. A draft of the new medical act was presented and unanimously endorsed.

Officers Elected.

The following were elected for the ensuing year: Honorary president, M. M. Seymour, Regina; president, J. W. Kemp, Indian Head; vice-presidents, T. C. Spence, Prince Albert, and H. Eaglesham, Weyburn; secretary-treasurer, G. A. Charlton, Regina; executive committee, A. B. Stewart, Rosthern; A. W. Allingham, Broadview; C. M. Henry, Yorkton.

Tuberculosis Treatment Needed by Indians.

Resolutions were passed memorializing the provincial government as to the necessity of enacting a public health act at the coming session of the legislature, and also asking measures for the prevention of tuberculosis within the province, as follows:

Resolved, That the secretary of this association be instructed to memorialize the Dominion government as to the necessity of taking immediate and definite action with regard to the treatment and prevention of tuberculosis among the Indians on reserves and in the industrial and other schools in this province by the establishment of sanitaria in the vicinity of Indian reserves. Attention is directed to the amount of tuberculosis existing among the Indian children attending schools, and the necessity of removing infected children to sanitaria where they may be treated separately, and no longer be a source of transmitting the disease to others; and also that cases of tuberculosis occurring among adults and others not in the schools may be properly isolated and treated.

Papers were read by Dr. M. M. Seymour, Regina; Dr. W. Henderson, South Qu'Appele, and Dr. G. A. Charton, Regina, and will be published, with a full report of the transactions in the *Saskatchewan Medical Journal*, which is to be issued. A banquet was tendered the members of the association by the local medical society.

The next meeting will be held at Prince Albert as soon as possible after the close of the coming British Medical Association meeting at Toronto in August.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Scabies.

The following outline of treatment is recommended by Renault in *Jour. des Pract.* in the treatment of scabies. The skin should be thoroughly cleansed with a soft soap and the following ointment applied:

℞.	Sulphuris sublim.	℥i	30
	Potassii carbonatis	ʒiii	12
	Adipis	ʒss	15

M. Ft. unguentum. Sig.: Apply locally and allow it to remain in place for twenty-four hours.

As a milder ointment the following is recommended:

℞.	Glycerini	℥i	30
	Sulphuris sublim.	ʒss	15
	Potassii carbonatis	ʒiiss	10
	Pulv. tragacanthæ	gr. iv	25
	Olei lavendulæ	m. v	30

M. Sig.: Apply locally.

If pruritus persists after the application of one of the foregoing ointments, the following combination is recommended:

R.	Acidi carbolici	gr. xv	1
	Glycerini	ʒiii	120

M. Sig.: Apply locally.

Senna.

The principal constituent of senna is cathartic acid, which causes it to rank as an active cathartic. It is said that the use of senna to correct constipation does not tend to produce constipation, as is the case with a great many cathartics. It is one of the most common laxatives administered to pregnant women, in the form of a confection or compound licorice powder, and these preparations are of value in the treatment of constipation of young children. According to Beasley, it sometimes causes griping and occasionally nausea, but it is free from any astringent effects.

The following combination is recommended by him as a draught to be taken the first thing in the morning after having taken a mercurial pill the previous night:

℞.	Misturæ sennæ co.	ʒiss	45
	Tincturæ card. co.	ʒss	2

M. Ft. mistura. Sig.: To be taken on rising in the morning.

In cases of constipation accompanied by hemorrhoids the following combination is advised:

℞.	Confect. sennæ Confect. sulphuris, āā	℥i	30

M. Sig.: One to two teaspoonfuls at bedtime. Or:

℞.	Confect. sennæ Confect. sulphuris Confect. piperis, āā	℥i	30

M. Sig.: One teaspoonful at bedtime.

In cases of chronic constipation the following combination is of value:

℞.	Sodi sulph. Potassii bitartratis Syrupi zingiberis, āā Infusi q. s. ad	℥i ℥i	4 30

M. Sig.: To be taken at one dose on rising in the morning. Or:

℞.	Tinct. sennæ co. Ext. cascaræ liq., āā Sodii sulph. Elix aromatici q. s. ad	m. xv gr. xv ʒss	1 1 15

M. Sig.: This amount to be taken in a little water twice daily.

The following is a very good combination:

℞.	Potassii bitartratis Pulv. glycyrrhizæ co.	ʒii ℥i	8 30

M. Sig.: One teaspoonful at bedtime when necessary to correct constipation.

For children the following may be used:

℞ Syrupi sennæ
Syrupi rhei
Glycerini, āā ..... ℥i 4

M. Sig.: One to two teaspoonfuls at night when necessary.

In very young children and infants the following is of value:

℞ Syr. sennæ..... ℥i 30
Mannæ ..... ℥iv 15
Syr. aurantii q. s. ad..... ℥iii 90

M. Sig.: One teaspoonful at bedtime to correct constipation, or oftener if necessary.

Neurasthenia.

Concerning the morbid anatomy of neurasthenia, Rankin, in *British Med. Journal*, states that some authorities attribute it to vasomotor inadequacy resulting from low blood pressure, the portal circulation becomes congested and the heart is imperfectly filled. Others mention its frequent association with Graves' disease, osteoarthritis and other diseases accompanied by low blood pressure.

Bouchard regards it as the result of abnormal fermentations in the stomach, with the consequent formation of toxins, which, when absorbed, impair the function of different organs, especially the nervous centers. Glenard believes that this condition is due to a visceroptosis.

The important symptoms are fatigue on slight exertion; impaired digestion, such as anorexia, eructations, restlessness, irritability, constipation; change of temperament, such as fickleness, restlessness; headaches, occipital or vertical, increased by stooping; unrefreshing sleep; sensory disturbances, such as neuralgic pains, muscular tremors, active deep reflexes; vasomotor phenomena, flushings, sweatings, palpitations, vertigo; photophobia, emaciation and various intellectual phenomena.

The first indication for treatment, therefore, is rest, both mental and physical. The patient should be separated from relatives, friends and business relations. The Weir Mitchell system is of great value in many cases, but this rigorous method of treatment should not be employed, according to Rankin, in all cases. In other words, this habit of treatment is very unfortunate and disappointing in many instances. The Weir Mitchell treatment is of value in those cases bordering on hysteria in which marked emaciation has taken place. The form of rest, then, should depend on the patient's individuality and his financial resources. A modified rest cure is more applicable in some cases by placing the patient in comfortable rooms under the care of a judicious nurse, and prohibiting all communication with relatives or business associates. The food must be regulated to suit the capacity of the digestive apparatus and should be generous. Milk and fats should be given as plentifully as possible. Regularity in meals, sleep and hours for resting should be observed. Absolute rest in bed should be the rule during the first ten days of the treatment, gradually replaced by walking in the afternoon. The patient may be allowed to read magazines, newspapers and other light literature, and may spend a part of his time in some artistic hobby. The point of weariness should never be reached.

Massage night and morning should be employed to improve the muscular system. Faradism is of value, particularly as a suggestive remedy.

Digestive disturbances often arise from unhygienic conditions of the mouth, consequently the teeth should be carefully inspected. An antiseptic mouth wash consisting of the following is recommended:

℞ Potassii chloratis
Acidi carbolici, āā..... gr. xl 2 | 65
Aquæ ..... ℥viii 240

M. To be used as a mouth wash.

Care should be given to the digestive tract. Antiseptics are recommended given combined with acids or alkalies, according to the indications in the individual case. To acid mixtures he advises adding carbolic acid in doses of two or three grains (.12-.20), and to alkaline mixtures sulpho-carbolate of soda in doses of from ten to fifteen grains (.65-1.00).

The bowels must be regulated so as to secure one good movement daily, and for this purpose he recommends the compound rhubarb powder of the United States Pharmacopeia, which is composed of the following:

℞ Pulv. rhei..... ℥vi 25
Magnesii oxidi..... ℥xvi 65
Zingiberis ..... ℥iiss 10

M. Sig.: One-half teaspoonful at bedtime.

On first waking in the morning, when the stomach is empty, from six to ten ounces of hot water should be sipped slowly; to this may be added a teaspoonful of Carlsbad salt if the rhubarb powder is not sufficiently effective. About once a week one grain (.06) of calomel may be added to the rhubarb. The diet must be carefully directed and at first should consist of milk foods, thin soups, fish, fowl and game; as the digestion improves the amount of food may be increased. The following outline of diet must be strictly adhered to: Red meat once a day only; cocoa with boiled milk; a moderate amount of sugar; no uncooked vegetables or fruit; stale or toasted bread; an abundance of fats and a minimum of two pints of milk in the twenty-four hours.

Cod-liver oil may be added to the diet as the patient improves. This is best taken in a single dose at night, on retiring, beginning with a few drops and doubling the dose each night until a maximum of a tablespoonful is reached. It is most easily taken in orange wine.

When insomnia is a stubborn factor, as may be the case in the early stages of the treatment, the author recommends the administration of small doses of some mild hypnotic at bedtime. In extreme cases it may be necessary to give morphin for one or two nights, but this should only be done when other means of inducing sleep have failed. Rankin properly emphasizes the importance of extreme care in the use of morphin so as not to create a habit. The patient should never know what drugs are being used.

If anemia is present it must be corrected. The following preparation is recommended for this purpose:

℞ Ferri et ammoniæ citratis..... gr. viiss | 50
Liquoris arsenicalis..... m. v | 30
Potassii bromidi..... gr. x | 65
Liquoris ammonii acetatis..... ℥i 4
Aquæ chloroformi q. s. ad..... ℥i 30

M. Sig.: One such dose after each meal.

Later in the course of the disease the author recommends a combination containing ichthyol, for both its antiseptic effect and its steadying influence on the vasomotor system, and cannabis indica to replace the bromid, consequently he advises the following combination:

℞ Ferri sulphatis..... gr. ii | 12
Ichthyoli ..... gr. v | 30
Acidi arsenosi..... gr. 1/40 | 005
Extracti cannabis ind..... gr. 1/4 | 015

M. Ft. capsula No. i. Sig.: One such capsule after each meal.

If iron in any form should disturb the digestion, it may be replaced by manganese oxid in from five to ten-grain doses (.30-.65). To relieve the headaches, if these are extreme, the following combination may be advised:

℞ Caffeinæ citratæ..... gr. iii | 20
Phenacetini ..... gr. x | 65

M. Ft. chart. No. i. Sig.: One powder when absolutely necessary to relieve the headache.

During these attacks of headache the tonic remedies should be temporarily omitted.

Spinal tenderness is usually speedily relieved by the application of a Pacquelin cautery along either side of the spine.

A movable kidney should be supported. A change of air and surroundings is always of benefit.

Prophylaxis can be carried with great benefit to neurasthenics in the way of arranging business to avoid fatigue, in procuring abundant sleep, regularity of meals, and short but frequent intervals of complete relief from work and responsibilities.

Medicolegal

Valuation Given to an Eye.

The Supreme Court of Wisconsin says, in Olwell vs. Skobis, an action brought to recover damages for an injury to one of the eyes of the plaintiff necessitating long and painful treatment, three operations thereon, and its removal, that, of course, there is no exact rule for estimating damages in such a case. In certain cases in other jurisdictions verdicts of from $2,000 to $5,000 for the loss of an eye have been held not to be excessive. In this case the jury assessed the damages suffered by the plaintiff, a woman amanuensis and bookkeeper, by the injury referred to, at $12,000; but this court is constrained to hold, for the purposes of a new trial of the case, that a verdict for more than $6,000 on substantially the same evidence as to damages as in this record would be deemed to be excessive.

Insane Delusions and Testamentary Capacity.

The Supreme Court of Missouri, Division No. 2, says, in the case of Sayre and others vs. the trustees of Princeton University and others, a proceeding to contest the validity of the will of Dr. John S. Sayre, who died in 1899, that, to say that a belief of Dr. Sayre that he had appendicitis, if he so believed, was an insane delusion, was utterly groundless. He was disposed to leave it to the physicians, who decided to operate for appendicitis. Reliance on the judgment of distinguished medical specialists is in no sense an insane delusion. But if, in the light of all the evidence, the court could for a moment assume that Dr. Sayre was laboring under a delusion merely as to the name of the disease from which he was unquestionably suffering, and which finally caused his retirement from the Navy, it was obvious it did not show the slightest aberration with respect to the kind and extent of his property, or any false notions as to the objects of his bounty in the most remote degree. The fact that he gave the bulk of his estate to his alma mater, Princeton University, was no evidence of insanity. It was urged that the experts testified in response to a hypothetical question that Dr. Sayre was of unsound mind. The court, besides criticising the question, answers that medical men of great learning maintain that a mind diseased on one subject must be classed as unsound, but the law of Missouri is too well settled to be gainsaid that a man's mind may be impaired in one faculty and practically unimpaired in all others. Derangement of mental faculties does not incapacitate one under the laws of the state from making a will, if it does not render him unable to transact his ordinary business, and incapable of understanding the extent of his property and of appreciating the natural objects of his bounty.

Complaints as Evidence—to Physician to Make Testimony.

The Supreme Court of Michigan says that the plaintiff in the personal injury case of O'Dea vs. Michigan Central Railroad Company testified fully as to her condition, pain and suffering, and its duration, and that this it was competent for her to do. In addition to her testimony, her counsel called a number of witnesses, who were allowed to testify to her complaints, not what she said in her own language (which the court does not imply would have been admissible), but the fact that she complained of this or that. She sent for a certain physician, not for the purpose of giving treatment, but because he was the company's physician at Owosso. She declined medical assistance at Henderson, saying she wanted to wait and send for the railroad physician in Owosso, so they could see if she was hurt, if they wanted to settle; that she had a claim against the company (for the injury), and wanted to get her proof together—wanted the railroad physician so that they would know that she was hurt. The physician was allowed to testify: "The patient complained of tenderness over the hip joint—that is, on pressure—and she also complained of some soreness in moving one shoulder." This testimony was not admissible. The plaintiff's own testimony showed that the witness was asked to call for the purpose of making testimony, and the fact that he did not come in response to the call, but for other reasons, was not important. It was the design of the plaintiff to make communications for the purpose of affecting her claim that made them inadmissible, for the reason that they were not natural expressions of present sufferings, but voluntary statements for an ulterior purpose, and therefore not within the exception to the hearsay rule. Again, the court says that it might be reasonably suggested that the plaintiff's attempt to make testimony for herself would not be likely to end with the physician, and such suggestion was a pertinent one to make to the jury, whose duty to consider the question of simulation was thereby emphasized.

Typhoid Fever and Board of Health Powers.

The Supreme Court of Michigan says, in the case of Thomas vs. Board of Supervisors in Ingham County, that it appeared that, in September, 1904, the city council of the city of Mason, in Ingham County, acting as a board of health, employed Dr. Thomas to attend a typhoid fever patient in that city. He rendered the services required; his first visit being on September 8, and his last on October 10. His entire bill came to $36, which was reasonable in amount, and was approved and certified by the local board of health. But the board of supervisors of the county entirely disallowed the bill. This was done on the ground that typhoid fever was not, in their opinion, a "dangerous communicable disease," within the meaning of the statute. Thereon a mandamus was obtained from the circuit court requiring the board of supervisors to allow the bill. The circuit judge based his action on the theory that the amendment of 1903 of the law gives the board of supervisors no power to determine whether a debatable disease does or does not come within the statute, and that the decision of the local board of health is yet final on that point.

The Supreme Court affirms the judgment of the lower court. It says that the board of health gets its power to act in these cases from section 4424 of the Compiled Laws of 1897, as amended by Act No. 7 of 1903. The provisions contained in this section, previous to the amendment of 1903, have been frequently construed by this court. It was held that, when the township board of health had acted, under the provisions of the section, its action was final, and the duty of the board of supervisors was to so treat it. By the amendment of 1903 the board of supervisors shall audit the bill, and if found that the expenses were necessarily incurred, the services actually and necessarily performed, and the amounts claimed for such expenses and services are severally just and reasonable under the circumstances, shall allow the same or such parts thereof as shall be deemed just and reasonable, and in auditing such accounts, the several boards of supervisors shall have full power to examine into the merits of all claims presented to them in accordance with the provisions herein contained. This court does not think that it was the purpose or effect of the amendment that the board of supervisors might substitute its judgment in place of the judgment of the board of health as to whether in a given case a person had a dangerous communicable disease.

The matter of the public health, the Supreme Court goes on to say, has been the subject of legislation for a great many years. Boards of public health have been created, and large powers given to them when the emergency arises for their exercise. These powers were curtailed in some respects by the amendment referred to, but it is just as much the duty of the board of health to act in case of an emergency now as it was before the amendment. When the board of health has acted in cases where it is its duty to act, and has filed the statement with the county clerk, as provided by the statute, it is the duty of the board of supervisors to proceed to audit the bill. The board of supervisors is not given the power to decide whether the disease with which the person was inflicted was a dangerous communicable one, but it is its duty to in good faith determine whether the expenses charged in the itemized statement were necessarily incurred, and whether the services for which charges were made were actually and necessarily performed, and whether the amounts claimed for such ex-

penses and services are severally just and reasonable. If it is determined they are, they should be allowed. The practical effect of a construction of the statute in harmony with the action of the board of supervisors in this instance would leave the board of health shorn of its powers. The court does not think that was the purpose or effect of the amendment.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

March 31.

1 *Prophylaxis of Lobar Pneumonia. J. M. Anders, Philadelphia.
2 *Imperfect Descent of Testes. A. McLean, Detroit.
3 *Two Rare Forms of Cystitis. C. C. Norris, Philadelphia.
4 Study of the Conradi-Drigalski Medium for the Isolation of *B. Typhosus*. C. L. Cole, Washington, D. C.
5 *Pathology of Rabies; Rôle of Mast-cells in the Affection. A. Gordon, Philadelphia.
6 *The Training of Nurses. J. C. Munro, Boston.
7 The King's Evil and Its Cures. (Concluded). J. Knott, Dublin, Ireland.

1. **Prophylaxis of Lobar Pneumonia.**—Anders claims that thorough and prompt sterilization of pneumonic sputum, and of the secretions from the upper respiratory tract, and then their prompt destruction by burning, is a matter of first necessity. Disinfection of the bed linen and body linen, the mattress and the room occupied by the pneumonia patient is also a primary requisite. These matters do not receive the rigid care and attention which they richly merit by the average general practitioner. The public measures of greatest value are summarized as follows: The issuance of drastic edicts against spitting on the sidewalks; the work of street cleaning and street sprinkling should be looked after by bureaus or boards of public health, to whom should be given full executive authority; there should be greater diffusion of popular information concerning efficient ventilation of our office buildings, theaters, courts of justice, manufacturing establishments, churches, public schools, and passenger and street railway cars, and also regarding details connected with the subject of the prevention of lobar pneumonia, stating simple, plain facts about the way in which the disease is spreading.

2. **Imperfect Descent of Testes.**—McLean concludes from the study of a number of cases that, (1) in many cases of undescended testes there is an hereditary anatomic weakness of the sexual apparatus; (2) there is no way of telling before exposure whether the cord will allow of the transplantation of the organ to the scrotum or not; (3) an inch or more can be added to the vas by separating it from the epididymis and the globus minor from the body of the testis; (4) the spermatic artery may be severed and the vitality of the organ maintained.

3. **Cystitis.**—Norris reports two cases. In Case 1, a vesical calculus formed around a heavy silk suture. Two years previously the patient had had a suprapubic cystotomy performed for severe cystitis. This gave temporary relief. A few weeks later the patient passed a silk ligature covered with urinary salts. Following this the patient had symptoms of cystitis and occasional interruption of the stream of urine. Cystoscopic examination revealed a stone about the size of a pigeon's egg suspended from the superior aspect of the bladder. Vaginal cystotomy and removal of the stone was done. The wound healed rapidly and the patient was discharged cured four weeks after operation. Case 2 was one of exfoliative cystitis, the patient being a colored woman with no evidence of gonorrhea. Acute cystitis occurred with sudden onset. The symptoms for the first week were very severe. Three weeks later the urethra became blocked by a sloughing mass, which on removal proved to be an entire cast of the bladder, consisting of the mucosa and a portion of the muscularis. Symptoms from this time began to subside, and two months later the patient was entirely well. This case had no assignable cause. The uterus was in normal position, there were no neoplasms blocking the pelvis, nor was the patient pregnant. No strong chemical solution had been used in the bladder.

5. **Pathology of Rabies.**—Gordon concludes that the presence of mast cells corroborates his view that the spinal ganglions are the place of predilection for rabic virus.

6. **Training of Nurses.**—Munro emphasizes the following facts: Women who take up the profession of nursing should have a love for work, sacrifice and humanity, with all that these qualities imply. The probation period should be long enough to allow the unfit to be weeded out, and this latter process should be severe, judicial and searching. The strictly professional training given in our large hospitals is sufficient, and in many respects it is more than sufficient. Except in a small special class, nurses should be taught much less anatomy, physiology, pathology, bacteriology and chemistry. It would be far better, he states, if more time were devoted to teaching nurses to be genuinely humane. More time should be devoted to teaching nurses household work, cooking, ordering of supplies, cleaning of rooms, etc. The nurse should be taught that the family routine and habits are not formed on the basis of the training school, and that they should not be disturbed except for necessity. The nurse must realize that any honorable labor is within her duties, and that these duties can not always be drawn on hard and fast lines. In the hospital training they should be taught, next to the qualities of humanity and tact, all the little details that do not demand skilled knowledge in the abstract medical sciences, but do demand observation, common sense, tact and honesty. She should be less elaborately trained in the science of medicine. A few selected women should be trained for special work and advanced work, but such selection should be exercised with great care and judgment.

Boston Medical and Surgical Journal.

March 29.

8 The Value of Drugs in Therapeutics. F. C. Shattuck, Boston.
9 The Homeopathic Principle. F. B. Percy, Boston.
10 *An Inexpensive Mechanical Treatment for Anterior Metatarsalgia. E. B. Young, Boston.

10. **Mechanical Treatment for Anterior Metatarsalgia.**—Young is convinced that poor muscular development and improper shoes are very often the cause of pains complained of by women and which are referred to the pelvis, lower back and hips, and for which pelvic examination shows no adequate cause. Acting on this hypothesis Young devised means for overcoming the discomforts due to the breaking down of the transverse arch of the foot. A piece of sole leather of the thickness required is cut into the shape indicated in Figure 1. The edges are beveled and the leather is touched on one side with a few drops of liquid glue. It is then placed on the sole of the boot, to which it adheres, so that its pressure is exerted

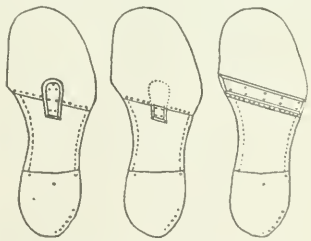


Fig I Fig II Fig III

Diagram of different methods of applying support.

just behind the heads of the metatarsal bones, and the leather nailed in position. It can also be inserted under the sole (Fig. 2) by raising the posterior edge of the sole and nailing it again in place. If there is too much pressure the leather is pared to the requisite thickness, as indicated by the comfort of the wearer. The increased depth, at the point where the leather is inserted, raises the sole over this area and slightly beyond, whenever the patient steps—this in turn supporting the anterior arch. Still another means of accomplishing the same result, and one which is especially applicable to shoes which are to withstand severe wear, is shown in Figure 3. The leather strips raise all the metacarpals slightly, and, at the same time, by varying the angle at which it is placed on the

shoe, it may be made to aid in raising the inner side of a pronated foot. In mild cases this works exceedingly well. The proper slant and thickness are adjusted to the comfort of the patients as they stand on the leather strip. Naturally, suitable exercises should be carried out in every case.

Medical Record, New York.

March 31.

11 *New Instrument for Measuring all the Diameters of the Pelvis in the Living Woman. S. D. Jacobson, New York.
12 *Treatment of Meningococcus Meningitis in the First Medical Division of Bellevue Hospital. E. L. Dow, New York.
13 *Two Unusual Epileptic Histories. S. E. Jelliffe, New York.
14 Operative Technic and After-Treatment for Mastoiditis with Epidural Complications. W. S. Bryant, New York.
15 *Ulcus Rodens (Mooren). H. H. Seabrook, New York.

11. **New Instrument for Measuring Female Pelvis.**—Jacobson describes an instrument, the use of which he advocates for the measurement of all the important diameters in the pelvis of the living woman. This instrument also enables the physician to determine the shape of the pelvis, and in the case of abnormalities, the available room for the passage of the child. It is constructed of steel and consists of two branches hinged together at one end and in the form of calipers. There is an outer semicircular branch and an internal irregularly S-shaped branch, each one being attached to a handle. A movable gauge slides on a grooved track and can be fixed in any part of this track by a set screw. The movable branch is attached to its handle by a pin and socket, and has a loop on each side, into which a sliding catch can be made to slip, which will securely hold the inner branch, whether it points toward or away from its fellow. The upper tips of the branches can be separated about twelve inches, the distance being indicated on the sliding gauge. A graduated leather belt accompanies the instrument. The fixed branch always remains outside of the body, while the other is used internally. The writer then gives detailed instructions for the employment of this instrument.

12. **Treatment of Meningococcus Meningitis.**—Dow declares that the only way the poisons or the bodies of meningococci can be nullified with our present knowledge is by assisting the patient to do it himself. Probably the best remedy for diminishing the intense cellular activity is the use of some derivative of opium. An accessory measure is the maintenance of a normal body surface temperature. This, by allowing the blood to remain at the surface of the body, relieves the congestion of the brain. The weather and the temperature of the ward appeared to have much to do with the progress of the cases which Dow has studied. The results were uniformly bad at the beginning of the epidemic during the cold months, and uniformly good during the warm months. An elevated posture was found to be beneficial in cases of severe tuberculous meningitis with extreme motor restlessness, as well as in cases of meningococcus meningitis. Ice to the head may be of some value. Lumbar puncture during the first few days of meningitis, or of its relapse, is of service. Laxatives and enemata are in order. Complications should receive appropriate treatment. Food, air and sunshine seem to be the only remedial measures of value in hydrocephalus.

13. **Two Unusual Epileptic Histories.**—Jelliffe's first patient was a girl ten years of age, who until she was eighteen months old, was perfectly well and normal. At this time otitis media developed, a moderate purulent discharge from the ear beginning on the second day. In a few days, the pain and local symptoms subsiding, the child was taken out of bed. It was found at this time that she was paralyzed on the left side, and later epileptic phenomena developed. The general condition of this child has greatly improved, including a gain in weight of twenty-five pounds. She is mentally unchanged, being as bright as the average child of her age. About a year and a half ago examination showed a small cicatrix on the right drum membrane. Jelliffe thinks it not improbable that the otitis was followed by the development of an abscess, the paralysis and epileptic phenomena being due to pressure or partial destruction. He believes also that the recovery, if such it proves to be, may be attributed to the rupture of a secondary cyst and the relief of pressure. The second patient had always had fair general health until an attack of santonin poisoning. This accident offers a plausible explanation of the convulsive seizures, the amblyopia and the nephritis which followed. The author states that the relation of santonin to naphthalene suggests the type of pathologic change that occurred in this child's nervous tissues. He has little doubt that the seizures from which this child suffered were distinctly epileptic.

15. **Ulcus Rodens.**—Seabrook describes a patient, a perfectly healthy man, thirty-seven years old, with rodent ulcer of over eighteen months' standing. All the cornea except a small patch outward had been involved. Treatment of various sorts failed. At this point pure carbolic acid seemed to check it, except for occasional relapses at the upper part of the ulcer, for several months, when the anterior layers of the cornea began to break down along the whole edge of the ulcer, except that directed toward the corneal limbus. Carbolic acid shortened the attacks and ameliorated the symptoms. Gray lines extended from the point of application into the lymph channels of the cornea.

St. Louis Medical Review.

March 24.

16 *Cases of Infantile Scurvy. J. A. Coutts, London, Eng.
17 *Local Anesthesia in Operations. T. C. Witherspoon, St. Louis.

March 31.

18 Physiology of the Nerves of the Tractus Genitalis. B. Robinson, Chicago.
19 Removal of the Uterus for Certain Chronic Inflammations. T. C. Witherspoon, St. Louis.
20 Surgical Treatment of So-called Idiopathic Dilatation of the Stomach. C. A. L. Reed, Cincinnati.

16. **Infantile Scurvy.**—Two cases of infantile scurvy complicated by extensive sub-periosteal hemorrhages are reported by Coutts. The first patient was aged eight months. The lower end of the right femur was thickened and the swelling was evidently painful to touch. There were no cutaneous hemorrhages and no history suggestive of hemorrhage into any of the viscera. The patient died. Surrounding the femur, almost its entire length, was a layer of bone formed in the detached periosteum, the space between the bone and periosteum being filled by a blood clot. In the case of the second patient both thighs were swollen and tense and there was evidence of sub-periosteal hemorrhages in both the legs and the arms. Both the lower and upper epiphyses of the femora were detached, and each shaft lay free in a cavity formed by blood clot and blood-soddened muscles. Instead of bone having formed in the detached periosteum that membrane had undergone a process of necrosis and no trace of it was discoverable in either limb.

17. **Local Anesthesia.**—During the year 1903, 105 patients were operated on by Witherspoon under local anesthesia produced by cucain in one-tenth per cent. solution with good results. When an operation requires much time in its performance and necessitates a good deal of handling of tissue, Witherspoon gives the patient an injection of morphin and atropin before beginning the operation. The area of infiltration of the skin should be made directly in the line of the proposed incision and should be long enough to allow of easy exposure of the tissue beneath. When the operation is to extend into the deep tissues it is best to infiltrate step by step and not to attempt to infiltrate the whole tissue at once. Among the operations performed under this anesthesia were partial thyroidectomies for exophthalmic goiter; ligation of arteries; radical operations for malignant disease of the breast; gastrostomies; gallstone operations; appendectomies; renal decapsulation; nephrectomy; nephrotomy; hysteropexies; myomectomies; radical inguinal and umbilical herniotomies; perineal cystotomies and operations for hallux valgus.

New York Medical Journal,

March 31.

21 *Scopolamin Morphin Chloroform Anesthesia. H. J. Whitacre, Cincinnati.
22 *General Infections Through the Tonsil. I. Adler, New York.
23 *Prognosis of Postoperative Femoral Phlebitis. B. R. Schenck, Detroit.
24 *Case of Conjugate Lateral Deviation to the Left. J. H. Claiborne, New York.
25 Gynecologic and Obstetric Cases. F. C. Hammond, Philadelphia.
26 The Passing of the Nursing Mother. G. D. Scott, New York.
27 Myelitis Complicating Pregnancy. J. T. Schell, Philadelphia.

28 Mastoiditis and Sigmoid Sinus Thrombosis in an Infant. S. Oppenheimer, New York.
29 Chemical Composition of Medicinal Plants. E. C. Hill, Denver.
30 Insanitary Condition of Various Towns in the Colony of Angola. F. C. Wellman, Angola, W. Africa.

21. **Scopolamin-Morphin-Chloroform Anesthesia.**—The danger of this anesthesia led Whitacre to institute animal experiments for the study of this question. Fatty degeneration followed regularly the prolonged administration of both chloroform and ether, the liver being the organ involved when chloroform was used, and the kidney when ether was used. Ten animals were given repeated doses of scopolamin 0.01 grain for from eight to fourteen days. Most of these animals showed degenerated changes in some degree, and five showed distinct fatty degeneration of the liver and kidney; two a probable fatty degeneration of the heart. Ten animals were given scopolamin, 0.01 grain, and morphin one-sixth grain, for corresponding periods of time. Five animals showed fatty degeneration of the kidney and of the liver. Whitacre concludes that scopolamin-morphin narcosis is not devoid of danger, and that the use of these agents alone is not justifiable or practicable. However, a single dose given two hours before operations lessens the discomforts attendant on the operation.

22. **General Infection Through the Tonsil.**—Adler emphasizes a few points of practical interest. He says that whenever there is a tendency to attacks of follicular tonsillitis, even if only very mild, be the attacks ever so slight, be the tonsil ever so large, there is a serious menace to the system, and the tonsil should be put out of harm's way. Adler advises burning over the surface of the tonsil either with a broad Paquelin burner or with the galvano-cautery. He thinks the best results were obtained when the entire surface of the tonsil down to a considerable depth is destroyed and converted into scar tissue, thus rendering it impermeable to further infection.

23. **Postoperative Femoral Phlebitis.**—The 48 cases reviewed by Schenck occurred among 7,130 patients operated on. The date of onset was markedly constant. The earliest was on the sixth and the latest on the twenty-second day, while in 25 instances it was between the twelfth and sixteenth day, and in all but 4, after the tenth day. Pain, of a dull throbbing character, sometimes in the thigh, often in the calf of the leg or in the popliteal space, and tenderness along the vein were observed in all cases. Tender, enlarged glands were present in only six instances. Edema occurred in 38 per cent. of the cases. The observation of Singer, that the pulse curve, as related to the temperature curve, is higher than that usual in other conditions, was not confirmed. These 48 cases occurred after: perineal operation alone, 4; hysteromyomectomy and myomectomy, 19; ovarian cysts, 9; hysterectomy for carcinoma, 5; suspension of the uterus, 3; suspension of the uterus, with repair of the perineum, 4; hysterectomy for pelvic inflammatory disease, 1; miscellaneous operations, 3. In about 60 per cent. of all cases there is never complete freedom from attacks of pain and swelling. If the symptoms persist longer than six months there is small chance that they will ever disappear.

24. **Conjugate Lateral Deviation.**—The salient features of the case reported by Claiborne were the following: Conjugate lateral paralysis, with deviation to the left; fugacious left hemianesthesia and hemiplegia; the location, by exclusion of the lesion, at the nucleus of the right sixth nerve; the absence of hemianopsia; the obvious predominance of the paralysis of the external rectus, as opposed to the internal rectus, and the retention of normal convergence.

Lancet-Clinic, Cincinnati.

March 31.

31 Clinical Significance of Some Symptoms of Diseases of the Stomach. J. H. Schroeder, Cincinnati.
32 Nervous Disorders of Children—Their Relation to School Life and Work. J. Punton, Kansas City.
33 Smallpox Contagion. M. L. Heidingsfeld, Cincinnati.

Annals of Surgery, Philadelphia.

February.

34 Surgical Intervention in Tuberculosis of the Meninges and of the Brain. R. Alessandri, Rome.
35 Elastic Ligature and the Ligature Method. D. Tait, San Francisco.
36 *Reversal of the Circulation in a Limb. A. Carrel and C. C. Guthrie, Chicago.
37 Carcinomatous Metastases Developing Over Three Years After Removal of the Breast Without Local Recurrence. B. F. Curtis, New York.
38 *Cardiospasm. J. F. Erdmann, New York.
39 *Treatment of Diffuse Septic Peritonitis. R. G. LeConte, Philadelphia.
40 *Extroversion of the Bladder. B. G. A. Moynihan, Leeds, Eng.
41 Two Cases of Rupture of the Bladder. J. Marnoch, Aberdeen.
42 Loose Bodies in the Knee Joint. F. G. Connell, Salida, Colo.
43 *An External Metal Support for Direct Application to the Shaft of a Fractured Long Bone. W. Bartlett, St. Louis.
44 Use of Wolfe Grafts and Tendon-Lengthening in Treating Cicatricial Contractures. C. N. Dowd, New York.
45 Fractures of the Metacarpal Bones. R. Russ, San Francisco.
46 Fracture of the Astragalus with Sub-astragaloid Forward Dislocation of the Foot. C. O. Thienhaus, Milwaukee.

36. **Reversal of Circulation.**—Experiments were undertaken by Carrel and Guthrie with the view of studying the changes of the circulation of a limb after reversal, and of finding a method of preventing gangrene when the arteries of the limb become unable to carry the red blood to the capillaries. The experiments performed demonstrated that the reversal of the circulation in the limb of a dog can be established by an end-to-end arterio-venous anastomosis. At first the valves prevent the reversion of the circulation in the veins, but after a short time the valves gradually give way and the red blood flows through the veins as far as the capillaries. Finally it passes through the capillaries and the arteries are filled with dark blood. Practically complete reversal of the circulation is established in about three hours after the operation. Under the same conditions lateral anastomosis does not establish the reversal of the circulation.

38. **Cardiospasm.**—Twenty months have elapsed since the operation in the case reported by Erdmann. The patient, a female, aged 33, first noticed a peculiar swallowing rattle in throat, which in four or six weeks was followed by difficulty in swallowing foods, giving her an impression of pressure back of the the lower portion of the sternum. All things seem to go down the wrong way. There was invariably, after a short period, vomiting of the material swallowed, varying in extent from the entire quantity to about two-thirds of that swallowed. All palliative measures failing to give relief, Erdmann operated. The stomach was exposed through a median epigastric incision and was found lying in an absolutely transverse position and contracted so that it was less in diameter than the large intestine. It was impossible to introduce the finger through the contracted cardiac opening. The lower end of the esophagus formed a large pouch. The contracted opening was stretched with the fingers, passed in through an incision made in the long axis of the stomach, from 4 to 6 c.m. The opening in the stomach was closed by three rows of sutures, the first and second being continuous chain stitch and the third Lembert. The patient made an excellent recovery.

39. **Treatment of Diffuse Septic Peritonitis.**—LeConte outlines the treatment employed by J. B. Murphy and reports the history of two patients treated successfully according to this method.

40. **Extroversion of the Bladder.**—Moynihan cites the case of a youth, aged 19, who fifteen years before that had a plastic operation performed for extroversion of the bladder, which was not successful. The patient was given relief by transplantation of the bladder into the rectum. The bladder was isolated, leaving only at its pedicle the two ureters. As much tissue was left as possible round each ureter so as to avoid the possibility of damage, either to the ureter itself or to its vessels. The serous covering was then stripped upward from the front of the rectum until 4 or 5 inches of the bowel lay exposed at the bottom of the wound. Along its anterior surface an incision about 3½ inches in length was made. Into this opening the bladder was placed, being turned upside down so that its former anteror surface became posterior, and its former lower end became the upper. The ureters instead of passing forward to the bladder passed backward, and the catheters passed into the rectum and out at the anus. The edge of the bladder and the cut edges of the rectum were sutured together by two Lembert sutures that were continuous, one taking the right side and the other the left. A few additional interrupted sutures were necessary here and there. The wound was dried and the skin edges along the original

median incision were drawn together. At the upper end the edges came well into apposition, but about an inch at the lower part had to be left open. The catheters which had been introduced into the ureters now passed out of the anus; the sphincter had previously been stretched. The operation lasted an hour and a half. The after progress of the case was satisfactory.

43. **External Metal Support for Fractured Long Bone.**—Bartlett reports a case of extensive injury of the arm necessitating resection of two inches of the humerus. Four days after the injury the patient commenced to suffer great pain in the injured arm and this persisted until the ninth day, when the parts were placed at rest in the following manner: With the arm flexed at the elbow, Bartlett applied a plaster bandage, which included the chest, forearm and hand, the upper arm being left free, of necessity. A steel arch anchored at one end in the plaster enclosing the chest, and at its other in the bandage around the forearm, was suspended just above the upper arm. Beneath this arch was placed a vertical rod, which had attached to its lower extremity a silver splint which rode on the ends of the bone like a saddle on a horse, and prevented their natural tendency to rise up out of the wound, while an extension of the vertical rod fitted between the ends of bone, thus keeping the apparatus from gliding toward shoulder or elbow. Under the influence of this direct splint, however, the free bony ends showed a tendency to point downward and to project through the gap on the posterior surface of the arm. Hence, five days later, a silver wire was passed under each extremity and carried out through the anterior wound, to be attached to the steel arch above. After this was done the humerus remained absolutely rigid, there was no difficulty in dressing the large anterior wound by stuffing gauze in around the rod and the wires, the patient was occasioned absolutely no inconvenience by the apparatus, and except for tightening the wires as they stretched, the appliance caused no concern during all the weeks that it remained in place. It is worthy of note that there was no more spontaneous pain after the application of the splint.

Pennsylvania Medical Journal, Athens.

March.

47 *Address in Otology. M. Y. Ball, Warren.
48 *Teaching the Deaf Child to Hear. G. Hudson-Makuen, Philadelphia.
49 *Restitution to the Normal After Labor. B. C. Hirst, Philadelphia.
50 *Submucous Resection of the Septum Illustrated. W. L. Ballenger, Chicago.

47.—See abstract in THE JOURNAL, Oct. 21, 1905, page 1271.

48. Id.—Oct. 28, 1905, page 1349.

49. Id.—Nov. 4, 1905, page 1437.

50. **Submucous Resection of Septum.**—An illustrative discussion of the submucous resection of the nasal septum is presented by Ballenger, with a complete description of all the instruments employed, including his swivel-knife and a forceps for fracturing the deformed vomer from its attachment to the superior maxilla. His method of operating is so well-known that it is not necessary to describe it at this time. It shortens the three major steps of the operation, lessens the shock and shortens the time required for performing the operation. The operation has been employed successfully in more than 100 cases. Ballenger presents the following axioms: 1. Never do a long operation when a short one will do as well. 2. Make haste slowly in starting the elevation of the mucoperichondrium. Any other manner of haste is liable to result in a permanent perforation. 3. Do not extend the Killian incision through both mucous membranes, as to do so is tempting Providence in the form of a perforation. 4. A few instruments, infrequently introduced between the membranes, should be the aim. 5. Don't "fish" for what you want, but look, see, feel comprehend, then remove what you want. "Fishing" in the cavity is liable to tear the mucosa. 6. A sharp pointed instrument in a cavity is a dangerous thing. A dull one is safer. 7. The mucoperichondrium is easily and quickly lifted with a blunt elevator in 95 per cent of all cases. 8. The external ridge of the nose needs support, hence, leave plenty of cartilage in this region, for this purpose. 9. Never make a move until you know what you are doing. Then do it. 10. Do not operate to straighten the septum, but rather to remove obstructive adhesions of the septum. 11. Operate with a view to the patient's comfort and permanent relief. That is for what he employs you.

Therapeutic Gazette, Detroit, Mich.

March 15.

51 *Treatment of Hemorrhoids. C. B. Kelsey, New York, L. H. Adler, Jr., Philadelphia; B. M. Ricketts, Cincinnati, H. M. Bishop, Los Angeles; S. G. Gant, J. P. Tuttle, New York, and T. C. Martin, Cleveland.
52 *Exophthalmic Goiter Treated by the Roentgen Rays. G. E. Pfahler and M. C. Thrush, Philadelphia.

51. **Treatment of Hemorrhoids.**—The two operations referred to by Kelsey are the Allingham ligature operation and his own clamp operation, either of which, in selected cases in which no stretching of the sphincter is necessary to reach the tumors, may be performed under local instead of general anesthesia. For purposes of local anesthesia Kelsey does not believe in the use of simple water injections. He describes an operation which he has employed with success for about ten years. It is done without dilatation and by means of a speculum, and under eucain anesthesia in the office. From ten to fifteen minims of a weak eucain solution is first deposited in the most prominent part of the tumor, and after a few minutes a platinum wire heated to the point of redness is plunged fairly into the substance of the tumor. The source of electricity is the street current, and the needles used are those generally employed in nose and throat work. One or at most two applications are enough at one time, and these should not be made oftener than twice a week at first. The time consumed by the method in an ordinary case is usually several weeks.

Adler prefers the cautery method for the radical cure of internal hemorrhoids and excision for external hemorrhoid. For the treatment of the large single or large multiple pile, Ricketts prefers the submucous ligature operation, but for the treatment of a small single pile other methods are urged. Bishop still favors the operation which he devised and published about twelve years ago. Gant repeats his now well-known views on sterile water anesthesia in the operative treatment of internal hemorrhoids. He prefers the ligature operation for the removal of internal hemorrhoids in the office, at the patient's home, or in the hospital where sterile water or other local anesthetic is employed. Tuttle claims that in office practice the operative treatment of hemorrhoids resolves itself into excision with suturing of the edges or ligature with or without transfixation. The ligature is the easiest and quickest of application, and in most cases it is eminently satisfactory. He says that it is no longer necessary for patients to suffer from hemorrhoids on account of the fear of the general anesthetic or of the hospital. Most of them can be cured in the office or at home, and without taking ether; but success in this method requires proper office equipment, careful attention to aseptic details and skill in the art of local anesthesia. According to Martin, the ligature operation is an antiquity undeserving of a place except in the archives of proctology. He advises clamping the hemorrhoid, cutting it away, applying the cautery intermittently only to coagulate the lymph to plug the blood vessels without accidentally destroying normal tissue, and then suturing the pedicle with catgut by means of the lock or buttonhole stitch. He describes his method in detail.

52.—See abstract in THE JOURNAL, March 31, 1906, page 983.

Interstate Medical Journal, St. Louis, Mo.

March.

53 *Desert Thirst as a Disease. W. J. McGee, St. Louis.
54 Should Education in Sexual Matters be Given to Young Men of the Working Classes? L. D. Bulkley, New York.
55 Education in Sexual Hygiene for Young Working Women. M. A. Cleaves, New York.
56 Secondary Epithelioma of the Axillary Nodes with Involvement of a Large Nerve. H. G. Mudd and G. McConnell, St. Louis.

53. **Desert Thirst.**—McGee cites a most extraordinary case. A man named Pablo was lost in the desert just eight days (and nights), with one day's water; he rode in the saddle thirty-five miles and walked or crept between 100 and 150

miles. For nearly seven days, or fully 160 consecutive hours, he was wholly without water from sources exterior to his system, save the few drops extracted from the agave stipes and insects—a desert record without parallel known to McGee; for half the victims of desert thirst die within 36 hours of deprivation, another quarter within 48 or 50 hours, and nearly all known to survivors, within from 70 to 80 hours (three days and nights), or hardly half of Pablo's stress. For some five days he consumed his urine; ordinarily, the reconversion of excreted liquids is hardly helpful if not wholly harmful, yet in Pablo's case it seems to have materially prolonged vitality. For nearly nine days his bowels were inactive, and for two days his kidneys failed to function. The eight-day siege lost him 35 or 40 pounds (or 25 per cent. of his weight), chiefly through evaporation from skin and membrane; he also suffered fully two-score cuts, scratches and bruises each of sufficient severity to give some shock to the system; and his mouth, esophagus and stomach were seriously deranged by his desperate efforts to relieve the thirst torture. The most striking feature of the case was the absence of wholly insane delirium; he was, indeed, affected by the revulsion against gold, as shown by the abandonment of his nuggets and the casting away of his money; he was possessed of hallucinations as to the wetness of sands, the moisture of articulates and shrubs, and the nearness of Tinajas Atlas; he was obsessed by the desire for vengeance against his comrade, who he thought had deserted him, the dream of casting himself in Tule Well, and the delusion of death—yet he never lost his trail sense, and apparently squandered little vitality in those aimless movements that commonly hasten and harden the end of the thirst victim.

Washington Medical Annals.

March.

57 *An Attempt to Explain the Peritoneal Adhesions that So Frequently Precede Typhlitis and Appendicitis. A. F. A. King, Washington, D. C.
58 Tuberculosis of Kidney, Nephrectomy. E. M. Hasbrouck, Washington, D. C.
59 Papilloma of the Rectum; Operation. D. G. Lewis, Washington, D. C.
60 Epithelioma Removed from Prepuce of Clitoris. T. C. Smith, Washington, D. C.
61 Alcoholic Hypertrophic Cirrhosis of Liver and Kidneys. D. S. Lamb, Washington, D. C.
62 Fibromyoma of Round Ligament; Operation. D. G. Lewis, Washington, D. C.
63 *A New Ophthalmotrope. D. K. Shute, Washington, D. C.
64 Renal Calculus, Removed by Nephrolithotomy. E. M. Hasbrouck, Washington, D. C.
65 *Case of Double Appendix. E. C. Prentiss, Washington, D. C.
66 *Adrenalin Chlorid in Variola. E. Eliot, Washington, D. C.
67 One-day Pneumonia in a Child. L. B. T. Johnson, Washington, D. C.
68 Surgical Treatment of Typhoid Fever. G. T. Vaughan, Washington, D. C.
69 Contracted Gall Bladder Removed by Operation. W. A. Jack, Jr., Washington, D. C.
70 Protozoal Human Parasites. C. W. Stiles.

57. **Peritoneal Adhesions.**—According to King, peritoneal adhesions about the cecum and appendix are not necessarily of inflammatory origin, as is generally supposed, but are evolutionary processes of adaptation. The adhesions are probably produced by abnormal immobility of the parts consequent on lack of thigh pressure on the abdomen such as occurs in the natural conquiniscent posture during defecation. Such adhesions having occurred, the peristaltic function of the cecum is impaired, with resulting constipation, retention of toxic matter in the intestine, and infection of the appendix. When the adhesions are suddenly, violently and repeatedly stretched, lacerated or otherwise traumatically disturbed by the muscular strains incident to bicycling, polo, tennis and similar exercises, peritonitis, typhilitis and appendicitis are produced. To prevent this "sea of troubles" civilized man must secure to the peritoneal surfaces their daily normal movement, by reverting to the natural conquiniscent posture of his ancestors in defecation.

63. **New Ophthalmotrope.**—The instrument devised by Shute demonstrates the conformity of the tilted axis hypothesis with clinical observations in ocular palsies. The model consists of a somewhat narrow rectangular box open at the top and at either extremity (20 cm. long, 10 cm. wide and 5 cm. high). The sides of the box support movable, clamp-arms carrying perpendicular adjustable supporting rods which are for the purpose of receiving and keeping in a fixed position the extremities of a stout steel hatpin passed through an india-rubber ball. The hatpin represents an innervation-axis (physiologic axis) of the eyeball, the rubber ball, of course, representing the eyeball. This ball is about 8 cm. in diameter. At one place it is painted to represent the cornea. Passing through the center of the cornea to its horizontal and vertical limits (of course at right angles to each other) are arcs of the horizontal and vertical meridians (great circles) of the ball. At the posterior pole of the ball representing the fovea centralis two other arcs are drawn at right angles to each other like those on the cornea. They are segments of the horizontal and vertical meridians. In the proper quadrants of these spherical right triangles at the posterior or macular pole of the ball, are drawn in red ink three arrows and in black ink one arrow. This is for the purpose of studying the character of the diplopia and represents the eyeball under the influence of the resultant of all the remaining tensions of the eyeball, the sound eye being imagined in the straightforward primary position. This rubber ball representing the paralytic right eyeball is depicted with a tilted axis. The adjustable placing cup holds the rubber representative of the eyeball in the correct primary position until the hatpin is securely supported, then it is lowered and removed. The corneal gauge is a support carrying an adjustable upright which is surmounted by a ring for receiving a movable watch crystal. The crystal is marked with a horizontal and a vertical line, intersecting at its center. When the rubber ball is in the correct position over the box and its hatpin axis is properly secured by the supporting rods, the corneal gauge is placed in the box in front of and quite close to the rubber ball, and is so adjusted as to have the horizontal and vertical lines of the watch crystal in the planes of the corresponding horizontal and vertical meridians of the cornea. Any displacement of the center of the cornea in consequence of rotation of the rubber ball on its steel axis can readily be noted and its character studied. By placing the proper marks of identification for puncture and counter-puncture with a hatpin, the same rubber can be used for study of ocular palsies of all the extrinsic muscles and, therefore, pathologic rotations on axes out of Listing's plane. Also physiologic movements on axes in Listing's plane can easily be studied. The model has a second corneal gauge for studying the movements of the posterior or macular pole as well as the anterior or corneal pole.

65. **Double Appendix.**—Prentiss describes a vermiform appendix which has a double lumen. There was a very thin layer of connective tissue between the lumina and they are held firmly together by peritoneum. He considers the specimen a partial reversion to a lower type.

66. **Adrenalin Chlorid in Variola.**—Eliot used adrenalin chlorid in a 1 to 1,000 solution in four cases of hemorrhagic smallpox; two were distinctly confluent, one was of the discrete variety, and the fourth was not classified, as it was so rapidly fatal. Three patients died and one was still under treatment on the day of writing. In the first two cases the effect of the adrenalin was to check the effusion of blood into the skin and into the points of eruption, but large bladders formed on different portions of the body, notably on the legs; the skin assumed a wrinkled appearance and peeled off when pressure was made on any part of the body, as in lifting the patient. In the third case, in which larger doses were given, every point of eruption on the body necrosed; some points were arrested superficially, while others, principally those on the thighs and legs, became deep sloughs of greater or less size, and the toes of each foot became gangrenous. Each point of sloughing was surrounded by an elevated broad border of pus, a distinct line of demarcation.

Philippine Journal of Science, Manila.

January.

71 Water Relations of the Coconut Palm (Cocos Nucifera).—The Oil Produced from the Nuts. The Factors Entering into the Rancidity of the Oil, and the Insects Attacking the Trees. P. C. Freer.
72 Water Relations of the Coconut Palm (Cocos Nucifera). E. B. Copeland.

73 Coconut and Its Relation to the Production of Coconut Oil. H. S. Walker.
74 Occurrence of Schistosoma Japonicum Vel Cattoi in the Philippine Islands. P. G. Woolley.
75 Study of Some Tropical Ulcerations of the Skin, with Particular Reference to their Etiology. R. P. Strong.

Archives of Otology, New York.

February.

76 Acute Middle-Ear Suppuration, Complicated by Labyrinthine Fistula and Paralysis of the Abducens Nerve. H. Hastings, Los Angeles.
77 Serous Meningitis. A. Knapp.
78 Relations in the Blood Supply of the Inner Ear Which Have a Practical Bearing on the Clinical Study of Otology. G. E. Shambaugh, Chicago.
79 Infective Sinus Thrombosis. P. D. Kerrison, New York.

Annals of Gynecology and Pediatry, Boston.

February.

80 Forceps Version and Craniotomy. G. L. Broadhead, New York.
81 Constitutional Low Arterial Tension in Children. L. F. Bishop, New York.

Buffalo Medical Journal.

February.

82 The Nature and Methods of Medical Societies. C. G. Stockton, Buffalo.
83 The Question of General or Local Anesthesia. E. S. Vanduyn, Syracuse.
84 Cholecystitis. D. Rochester, Buffalo.
85 Some Surgical Accidents of Childbirth. W. E. Ford, Utica.

Columbus Medical Journal.

February.

86 Medical Education. S. Loving, Columbus.
87 Advantages and Purposes of a State Organization of Medical Teachers. J. U. Barnhill, Wooster.
88 Should Advanced Standing as Regards Medical Residence Be Given to Graduates of Literary Colleges, or Should Four Years of Medical Residence Be Invariably Required. A. Ravogli, Cincinnati.
89 What Subjects and How Much Work in Each Should Be Required of a Graduate of a Literary College to Gain One Year's Advanced Standing in the Medical Colleges of Ohio. F. C. Waite, Cleveland.
90 Malignant Colon; Umbilical Hernia; Esophageal Stricture, F. Fletcher, Columbus.

American Practitioner and News, Louisville, Ky.

March.

91 The Colon—A Strategic Point in Medicine. D. S. Wilson, Louisville.
92 Primary-Secondary Syphilis. H. C. Weber, Louisville.
93 Treatment of Tuberculous Fistula in Ano. E. O. Witherspoon, Louisville.

Louisville Monthly Journal of Medicine and Surgery.

March.

94 Course of the Facial Nerve Through the Petrous Bone and the Significance of Its Injury. A. O. Pfingst, Louisville.
95 Chronic Suppuration of the Middle Ear. J. M. Ray, Louisville.
96 Doctors and Doctors. D. L. Field, Jeffersonville, Ind.
97 The Woman After Labor. W. B. Doherty, Louisville.

Albany Medical Annals.

March.

98 The Plea of the Patient. G. Cleveland.
99 The State and the Doctor. St. C. McKelway, New York.
100 President's Address Before the Medical Society of the State of New York. J. D. Bryant, New York.
101 History of Medicine in the State of New York in the Last Hundred Years. S. B. Ward, New York.

Journal of Mental Pathology, New York.

Vol. VII, No. 4.

102 Reflex and Automatic Excitability. S. Sergi, Rome, Italy.
103 Neurasthenia and Neuro-Hyperasthenia of Grocco. P. Thipano.
104 Electric Sleep. Experimental Study with Electric Current of Low Tension. L. G. Robinovitch, Paris.

American Journal of Urology, New York.

March.

105 Nephrolithiasis. R. Guiteras, New York.
106 Ureteral Catheterism in Nephrolithiasis F. Bierhoff, New York.
107 Microscopic Urinalysis in Nephrolithiasis. L. Heitzmann, New York.
108 Gynecologic Conditions Simulating Nephrolithiasis. A. H. Goelet, New York.
109 Nephrolithotomy from the Standpoint of the Provincial Surgeon. G. C. Smith, Hartford, Conn.
110 Mortality in Operations for Renal Calculus. H. Cabot, Boston.
111 Renal Calculus. E. Garceau, Boston.

Journal Missouri State Medical Association, St. Louis.

March.

112 Mistakes in the Diagnosis of Appendicitis. H. C. Dalton, St. Louis.
113 Ventrovaginal Fixation for the Relief of Extensive Uterine Prolapse at or Near the Menopause. F. J. Taussig, St. Louis.
114 Statistics Relative to Lobar Pneumonia and Its Complications. J. Wilson, Kansas City.
115 Etiology and Morbid Histology of Lobar Pneumonia. F. E. Murphy, Kansas City.
116 Diagnosis of Lobar Pneumonia. H. D. Jerowitz, Kansas City.
117 Prognosis of Lobar Pneumonia. E. W. Schauffler, Kansas City.
118 Treatment of Lobar Pneumonia. B. H. Wheeler, Kansas City.
119 Case of So-called Fetal Ichthyosis. B. W. Moore and L. Warfield, St. Louis.
120 Eight Selected Cases, Representing Two Phases of Gallstone Disease. W. Bartlett, St. Louis.
121 Use and Abuse of Massage in the Treatment of Rheumatism. T. N. Bogart, Excelsior Springs.

Bulletin Johns Hopkins Hospital, Baltimore.

March.

122 *Pernicious Vomiting of Pregnancy. J. W. Williams, Baltimore.

122.—See abstract in THE JOURNAL, June 17, 1905, page 1956.

Indiana Medical Journal, Indianapolis.

March.

123 Self-Regulation of the Living Organism. G. Bell, Indianapolis.
124 Steamboat Service of the Mississippi River During the Civil War. W. E. Jeffries, Indianapolis.
125 Personal Army Experiences. W. H. Wishard, Indianapolis.
126 American Tuberculosis Exhibition. J. N. Hurty, Indianapolis.

Medical Standard, Chicago.

March.

127 When Shall We Operate on Fibroid Tumors of the Uterus? G. W. Newton, Chicago.
128 Advantages of an X-Ray Picture in Every Case of Dislocation or Fracture. N. M. Eberhart, Chicago.
129 Legal Medicine. E. E. Clark, Danville.

Virginia Medical Semi-Monthly, Richmond.

March 9.

130 Gastric Lavage. W. B. Foster, Richmond.
131 Case of Gastroduodenostomy. J. S. Horsley, Richmond.
132 Mental Therapeutics. H. A. Robbins, Washington, D. C.
133 Syphilis. R. A. Gamble, Petersburg.
134 Principles of Surgery. S. McGuire, Richmond.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

March 17.

1 Position of Pathology with Regard to Clinical Diagnosis. A. W. M. Robson.
2 *Physiologic Notes on the Cancer Problems. W. Wade.
3 *Transmissibility of Syphilis to Apes. A. S. Grünbaum and R. D. Smedley.
4 *Anesthetics and Renal Activity. W. H. Thompson.
5 *Experiments in Density of Chloroform. P. M. Chapman.
6 *Ethyl Chlorid as a General Anesthetic. W. J. McCardie.
7 *Ethyl Chlorid. H. A. Knight.

2. **The Cancer Problem.**—Wade submits that there is good reason to suspect that the origin of cancer may be connected intimately with senile changes in the nerve endings or in the cells, or perhaps with both these combined.

3. **Transmissibility of Syphilis to Apes.**—Grünbaum and Smedley inoculated a male chimpanzee on the eyebrow by rubbing into it a portion of a chancre freshly excised. Signs of infection appeared on the sixteenth day, followed by general swelling and induration of the eyebrow and an exfoliation of the skin, leaving its surface yielding a serous or seropurulent secretion. The general health of the animal was unaffected. The spirochete was not found until the thirty-seventh day after inoculation.

4. **Anesthetics and Renal Activity.**—Thompson reports the result of an experimental investigation into the effects of prolonged chloroformed narcosis. His findings are summarized as follows:

1. The volume of urine secreted by the kidney is, as a rule, affected during chloroform narcosis in two ways. In the early stages, when the anesthesia is light, the quantity is frequently increased. During full anesthesia the secretion is always diminished, and may be suppressed.

2. The after effect is invariably a great increase, which in certain periods may reach to four times the normal volume for the same period of time. The maximum outflow occurs about three hours after removal of the anesthetic.

3. The total excretion of nitrogen is, as a rule, greatly reduced—more so than the quantity of urine. The averages taken from experiments with diminished urine volume show that during the anesthetic period the excretion of nitrogen fell to 18 per cent. of the normal, whereas the quantity of urine in the same series fell only to 35 per cent. of that amount. In a minority of the experiments with increased urine volume the total nitrogen per period was also increased, but to a much less extent than the volume of urine in the same experiments.

4. The urine secreted during chloroform anesthesia is almost invariably more dilute (contains less nitrogen per cent.) than the normal urine. This holds good even when the volume of urine is diminished, hence it is inferred that chloroform affects not only the blood flow through the glomerulus, but also the secretion of nitrogenous solids into the tubules and the latter even more than the former. The result, therefore, favors the theory of urinary secretion advanced by Bowman.

5. There is a general but not accurate correspondence between urine outflow, kidney volume, and blood pressure. The relationship between the first and second is closer than between the first and third. A state of almost complete suppression may coexist with a comparatively high blood pressure.

6. In prolonged narcosis, with marked diminution of urine volume, there is a considerable exudation into the renal tubules of leucocytes, which subsequently escape with the urine. The condition is probably produced by more or less vascular stasis in the glomerular vessels.

7. The excretion of chlorids is much increased both during and after chloroform narcosis. In the fourth period after removal of the anesthetic the amount may be ten times the normal quantity in the urine of the dog.

8. Albumin appears in a small proportion of experiments after chloroform inhalation.

9. Reducing substances other than glucose are almost invariably increased. The nature of the reducing substance has not been definitely determined.

5. **Experiments in Density of Chloroform.**—Chapman examined into the percentages of chloroform supplied by Junker's inhaler. He found that the plain vulcanite mask is safer than the more expensive form of inhaler with rubber-rim cushion, but the compression bulb must be worked gently and steadily. The air inlet apertures should never be closed and ought to be unclosable. Owing to variability of the percentages of chloroform vapor supplied, the apparatus is not suitable for more prolonged operations, although when all precautions are observed, the use of the apparatus, with the mask, is fairly safe in careful hands for short periods of anesthesia.

6. **Ethyl Chlorid as a General Anesthetic.**—McCardie claims that ethyl chlorid is less safe than ether and far less safe than nitrous oxid. The latter should be used whenever it is reasonably possible, and ethyl chlorid should be used when nitrous oxid is impossible, and when ether and chloroform are unnecessarily powerful and lasting in their effects. McCardie compares ethyl chlorid to chloroform in the ease and convenience of its administration and its high power of narcosis, while nitrous oxid is likened to ether in the difficulties and complications entailed in its inhalation and in its weak narcotic effects.

7. **Id.**—Knight considers ethyl chlorid a very reliable anesthetic, although in the hands of the untrained he thinks that it is not nearly so safe an anesthetic as nitrous oxid. When the administrator is accustomed to it, it is probably safer than any other anesthetic because so small an amount is necessary to render the patient insensible to pain, recovery from a light anesthesia is rapid, and there is no cyanosis or venous congestion. Only in very rare cases has Knight found it impossible to anesthetize a patient with it. The drug is not suitable for prolonged administration on account of the strain on the anesthetist and the expense. As a preliminary to chloroform anesthesia it is especially valuable.

The Lancet, London.

March 17.

8 Distribution and Recovery of Peripheral Nerves Studied from Instances of Division in Man. J. Sherren.
9 Epidemic Disease In England—The Evidence of Variability and of Persistency of Type. W. H. Hamer.
10 Phlebitis and Thrombosis. W. Haward.
11 Case of Splenomegalic Polycythemia, with Report of Post-mortem Examination. R. Hutchison and C. H. Miller.
12 *Spirochæta Pallida (Spironema pallidum) in Syphilis. T. Shennan.
13 *Rupture of Uterus with Escape of Child Into Abdominal Cavity. T. Hunter.
14 Four Cases of Multiform Streptococcic Infection Apparently All Derived from the Same Source. A. Latham, E. P. Paton and H. D. Brice.
15 Local Anesthesia for Cosmetic Operations. L. E. Stamm.

12. **Spirochete in Syphilis.**—Out of 18 cases examined by Shennan six showed the presence of the *Spirochæta pallida*. In three others spirochetes were found which could not with certainty be placed either with *Spirochæta pallida* or *Spirochæta refringens*. In five cases the results were absolutely negative. The remaining cases were doubtful. As regards the lesions, five hard chancres showed positive results; in two the results were doubtful, and in three they were negative. Two non-ulcerated papules gave positive results: two dry papulo-squamous syphilids gave negative results, and two roseolar rashes also were negative. Four condylomata were examined; three were negative and one was doubtful. Four glands were examined and in none could undoubted *Spirochætæ pallidæ* be found. One rupioid syphilid was examined with a negative result. Typical *Spirochætæ pallidæ* were found only in hard chancres and in closed papules—i. e., in typical syphilitic lesions.

Shennan says that while there is a very considerable probability that *Spirochæta pallida* bears an etiologic relationship to syphilis we require to know more about spirochetes in general and to have better methods of distinguishing the many forms intermediate between the typical *Spirochæta pallida* and the typical *Spirochæta refringens* before we can unreservedly accept this as a completely proved fact in pathology. One can say very little as yet with regard to the peculiar loop-like and rounded bodies found in syphilitic glands, and to such bodies as the flagellated structure he described in a film from a hard chancre.

13. **Rupture of Uterus.**—In the case reported by Hunter the rupture occurred about four hours after the commencement of labor. The placenta was delivered about ten minutes after the cessation of the pains. Examination per vaginam disclosed a large irregular tear in the left posterior region of the uterus, with the uterus firmly contracted behind the symphysis and the child in the abdominal cavity. The condition of the patient was such that a laparotomy could not be done. On the other hand, the natural passages were roomy and the tear was judged extensive enough to allow a normal child to pass with little further damage. At the same time it was remembered that, with no history of injury, abnormality in the child was almost certainly the cause of the rupture. The head of the child then was felt for and when it was reached the abnormality was found to be hydrocephalus. Perforation of the head and delivery *per vias naturales* were decided on. The feet were drawn together through the tear, followed by the trunk with the upper limbs. The head, steadied over the tear by a hand in the vagina and two hands over the abdominal wall, was then pierced by a perforator. A rush of fluid followed and the child was easily delivered. After the delivery the abdominal cavity was thoroughly washed out with sterilized normal salt solution at a temperature of 100. To do this a hand was passed in through the tear and the nozzle of the douche guided by it, and with this hand in the abdominal cavity the abdominal contents were well washed. A piece of omentum which presented at the mouth of the vagina was replaced by the nozzle of the douche. Finally, a gauze drain was passed into the abdominal cavity through the tear, a pad was put on over the vagina, and a tight binder was applied. The patient made an uneventful recovery.

The Australasian Gazette, Sydney.

February 20.

16 Medical Matters In Victoria—A Retrospect and Prospect. A. J. Wood.
17 Observations on Appendicitis. R. S. Bowker.
18 Surgical Treatment of Appendicitis. E. J. McCardel.
19 Case of Lorenz's Operation for Congenital Dislocation of the Hip. A. J. Turner.
20 Present Position of the Roentgen Rays In Medicine and Surgery. L. H. Harris.
21 Four Cases of Laminectomy. W. J. S. McKay.
22 Case of Appendicostomy. P. T. Thane.

Revue de Chirurgie, Paris.

Last indexed, page 993.

23 (XXVI, No. 1.) *Des opérations conservatrices dans le traitement des utérus didelphes. Quénu and E. Le Sourd.
24 De la cholérrhagie dans les kystes hydatiques du foie (of liver). F. Terrier and C. Dujarier.
25 Abcès du foie et cholérrhagie précoce (abscess In liver). A. Valence.
26 (No. 2.) *L'ulcère peptique du jéjunum après gastroentérostomie. A. Gosset. (Commenced in No. 1.)
27 *De l'hydropisie intermittente de la vésicule par oblitération du canal cystique. E. Villard and G. Cotte. (Commenced in No. 1.)
28 Note sur une anomalie des doigts (of fingers). C. Féré.

23. **Conservative Operations in Case of Double Uterus.**—Quénu and Le Sourd have found in the literature reports of only 3

cases of double uterus with independent fundi in which mere puncture or incision was attempted to evacuate an accumulation of blood. These cases all terminated fatally. In another group of 7 cases with hematometra, one-half of the double uterus was removed by a laparotomy, with ablatiou of the adnexa on one side. The results were favorable in all. The list includes one case personally observed by Quénu, which is described with all the particulars. He states that whether or not a conservative operation is permissible depends on the condition of the cervix. As a rule, the intervention must be a supracervical hemi-hysterectomy. It is extremely important to determine beforehand the permeability or non-permeability of each cervix. The adnexa will probably be found degenerated on the obstructed side. He has collected from the literature another group of 3 cases of double uterus with independent bodies, not complicated by hematometra, but with symptoms on the part of the adnexa. Total hysterectomy was done in each case, and the results were excellent. Bousquet found in the literature reports of 4 cases of dual pregnancy in a double uterus, each half containing a fetus, expelled by abortion. No instance is known of pregnancy in the organ left after hemi-hysterectomy, but theoretically there is no reason why it might not occur.

26. **Peptic Ulcer of Jejunum After Gastroenterostomy.**—Gosset remarks that it was only six years ago that peptic ulcer of the jejunum was observed for the first time, and after a gastroenterostomy. Since Braun first noticed it, 30 cases have been published, and Gosset has had opportunity to observe a case personally. His patient was a man of 42. Two years after posterior transmesocolic gastroenterostomy, a peptic ulcer in the jejunum perforated into the transverse colon. Ileo-sigmoidostomy was done after the perforations in jejunum and colon had been sutured. Recovery was uneventful. In the 31 cases reported, only 2 of the patients were women; the ages of the patients ranged from 4 months to over 50 years. Five different varieties of gastroenterostomy had been employed. The interval before the peptic ulcer developed sufficiently to cause symptoms was from ten days to seven years, the majority occurring within a year or so. In most cases the signs of perforation appeared without any preceding symptoms. In another group, symptoms developed similar to those observed with gastric ulcer, localized peritonitis with infiltration of the abdominal wall, the palpation findings resembling actual tumors in some cases. There is still a third group in which the ulcer scarcely attracts attention until it perforates into some adjacent organ, generally the transverse colon. The diagnosis is not difficult if the possibility of peptic ulcer after a gastroenterostomy is borne in mind. The prognosis of the fulminating form is grave; the form with localized peritonitis yields readily to operative measures, yet the danger of recurrence must not be forgotten. In 9 of the 20 cases in this group there was recurrence. In one case five operations were necessary, and, finally, a gastrostomy. In 2 other cases jejunostomy had to be done at last. The gastroenterostomy had been done for non-cancerous stenosis of the pylorus in every instance. Hyperacidity was the rule in the cases with recurrence, although there were some exceptions. The constant coincidence of stenosis, hyperacidity and great dilatation of the stomach is suggestive. The conclusions deduced from this long article are that medical treatment, with care as to diet, should be kept up for a long time after a gastroenterostomy, and that in operating the opening should be made as far from the pylorus as possible. The details of the various cases are tabulated and summaries given.

27. **Intermittent Distention of the Gall Bladder.**—The outlet of the gall bladder may become transiently obstructed, causing an intermittent distention of the organ. The gall bladder becomes enlarged at intervals, and the subsidence of the tumefaction is accompanied by agonizing paroxysmal pain. The obstruction in the cystic duct may be caused by kinking of the duct or by a stone or stones acting like a valve to close the passage at times. The patients usually have had a "gallstone past," and the paroxysmal pain is located in the right hypochondrium or epigastric region. It is atrocious, and may radiate like gallstone colic, and, like the latter, may cause reflex phenomena, but without temperature.

Archiv f. Verdauungs-Krankheiten, Boas', Berlin.

Last indexed, page 536.

29 (XII, No. 1.) *Die Hyperacidität des Magensafts und ihre Bestimmung mittels der Sahli'schen Probemahlzeit (Sahli test of gastric juice). W. Rubow (Faber's clinic, Copenhagen).

30 Eine neue Methode, die Funktionen des Verdauungs-Apparates zu prüfen (test of digestive functions). M. Einhorn (New York). See abstract on page 615.

31 *Die Hydriatik für nervösen Dyspepsie und der organischen Magen-Affektionen (of stomach). J. Sadger.

32 *Influence of Silver Nitrate on Composition of Gastric Juice and on Motor Energy of Stomach.—Zur Frage des Einflusses des Argenticum nitricum auf die Zusammensetzung des Magensaftes und die motorische Kraft des Magens bei Kranken. A. A. Baibakoff.

29. **The Sahli Test for Hyperacidity.**—Rubow states that he has examined the stomach functioning in 704 patients with various dyspeptic disturbances. Of the total number only 213 were found with a hyperacidity of 75 or over. He classifies these hyperacid cases and tabulates the findings for comparison, giving the highest in each case. Not a single individual was found with an acidity of more than 125, in which the acidity could be ascribed to the hydrochloric acid secreted. The large majority showed an acidity (due to hydrochloric acid) of not more than .44 per cent. Only in 4 cases was it higher, reaching 124 and 125, that is, 0.45 or 0.46 per cent. He has become convinced that the secretion of a genuinely hyperacid gastric juice must not be regarded as necessarily a pathologic factor. His extensive experiences with the Sahli flour and butter soup test were not favorable. There is too much room for error in the stratification of the soup and the stomach contents, the fat rising to the top.

31. **Hydrotherapy of Nervous Dyspepsia and of Organic Stomach Affections.**—Sadger gives minute directions for hydrotherapy based on wide experience. In the chronic gastric affections, and in nervous dyspepsia, powerfully stimulating general applications are indicated. Even the local applications are given in their most stimulating form. The sitz bath, for instance, is taken with water as cold as from 8 to 14 C. (46 to 57 F.), for three, five or fifteen minutes. In organic affections, especially in case of round ulcer, he has often found that small pieces of ice introduced into the rectum act like magic in arresting acute hematemesis. Cold fluids introduced in the rectum, he found, reduce the temperature of the stomach in some way. Swallowing scraps of ice has the opposite effect and actually favors hemorrhage as the water accumulates and becomes warm. A cold coil over the stomach, over a cold compress, is an effectual adjuvant, the flow of ice-cold water through the coil being kept up continuously possibly for a week. A sheet is wrung out of cold water and laid over the trunk, tucked in around the sides, and over this the cold coil is applied over the stomach. The patient is fed with tepid, sweet or sour milk in small portions for four or five weeks. Sadger commences with a teaspoonful every fifteen minutes and increases the amount to a tablespoonful, then to half an after-dinner coffeecupful, and finally to a teacupful, increasing the intervals to thirty or sixty minutes. He insists on this diet after acute hemorrhage and also in the treatment of chronic ulcer. Even on the day of the hemorrhage, it is possible to commence with minimal amounts of the milk (ice cold). Sadger quotes from Winternitz that the factors inducing round ulcer of the stomach are a chlorotic tendency, reduction in hemoglobin, reduced alkalinity of the blood and hyperacidity of the gastric juice, with spasmodic contraction of the blood vessels in the stomach mucosa. These factors, he says, induce a predisposition to gastric ulcer. Hydrotherapy, which has such a powerful action on all these factors, forms thus a truly causal treatment for the resulting predisposition to gastric ulcer. It seems to be the general experience that the main contingent of gastric ulcers is presented by chlorotic girls. The chief reliance is on general stimulating measures, with procedures to influence the circulation in the stomach lining and walls. These include cold sitz baths for about four

minutes, stimulating packs, generally in combination with the hot coil, which, however, is never left in place for more than ten or fifteen minutes. Sometimes the cold coil is applied to the heart to improve the general and local circulation. These measures are supplemented by a strict milk diet. Sadger applies an abdominal pack, changed every three hours. Once or twice a day a coil of hot water (40 C.—104 F.) is inserted in the pack for ten or fifteen minutes. Once a day a sitz bath is taken with water at 46 or 57 F. for from three to five minutes. Early in the morning the body is rubbed off with a cloth wrung out of very cold water, avoiding the chest and abdomen. Later, alternating hot and cold procedures are used. A good arrangement for home use is a cold pack until the sheet gets warm (20 to 30 minutes), with a half bath afterward at 22 or 20 C. (68 F.) for two or three minutes. Milk is the only food allowed for four or five weeks, commencing with a teaspoonful every fifteen minutes. The milk must always be very slowly sipped.

32. **Influence of Silver Nitrate on Gastric Juice and Motor Functions.**—The conclusions of Baibakoff's numerous experiments and clinical experiences are that silver nitrate has the property of increasing the secretion of hydrochloric acid and, hence, the total acidity of the gastric juice. The use of the drug is consequently contraindicated in cases of pre-existing hyperacidity. It is indicated, for the same reason, in cases of deficient or lacking secretion of hydrochloric acid, as in mucous gastric catarrh. The silver nitrate also aids in the digestion of albumin. The drug has further an anticatarrhal and an antifermentative action, so that it might be used to advantage in cases of abnormal fermentation. Experience to date has further demonstrated that the silver nitrate promotes the emptying of the stomach. In case of relaxed stomach musculature this property might be utilized. The various effects of the administration of silver nitrate mentioned above were observed with small doses (0.002 gm. three times a day), as well as with large amounts (0.03 gm. three times a day). The findings in 16 cases before, during and after the administration of the drug are given in tabulated form.

Beiträge z. klin. Chirurgie, von Bruns', Tübingen.

33 (XLVIII, No. 1.) *Distensions-Plastik mittels Mobilisierung der Harnröhre (of urethra). V. v. Hacker (Graz).
34 Stab Wound of Spinal Cord in Neck. Recovery After Operation.—Halbseitenläsion des oberen Halsmarkes durch Stich. Beginnende Meningitis. Heilung durch Operation. Amberger.
35 Zur Behandlung der Pseudoarthrosen. Gelinsky. 24 cases.
36 *Ueber den Dünndarmkrebs (cancer in small intestine). J. Kanzler (Czerny's clinic, Heidelberg).
37 Ueber den Volvulus des ganzen Dünndarms und aufsteigenden Dickdarms (of entire small intestine and ascending large intestine). W. Danielsen.
38 Ueber die Torsion des Netzes (of omentum). E. Pretzsch.
39 Histologischen Untersuchungen an exstirpierten Gallenblasen (gall bladders after removal). C. Otten.
40 Die Madelung'sche Deformität des Handgelenkes (of wrist). F. Sauer.

33. **Plastic Operations by Mobilization of Urethra.**—Von Hacker has performed 13 operations on the penis requiring stretching of the urethra, and the results have been extremely gratifying in every instance. He gives the details of all his cases and reviews the history of this technic. It proved successful in his hands in 5 cases of hypospadia; in 1 of a defect resembling hypospadia, remaining after an ulceration; in another case for the transformation of a perineal into a penal hypospadia; in 2 cases for the cure of a lip fistula of the urethra; in 3 cases of stricture, and in 1 of traumatic rupture of the urethra. The operations were done under infiltration or general anesthesia, but in future he proposes to use spinal analgesia. He prefers the tunneling technic as insuring primary healing. Among the various technical points which he mentions are the following: The urethra must be mobilized for about twice the length of the part it is to substitute. The urethra should not be stretched to a length of more than one and a half times its length in the unstretched condition. The limits of resection and stretching for plastic purposes can be more extensive when the conditions are such that retention of the urinary functions alone and not of the sexual is sought, as, for instance, in case of cancer.

36. **Cancer of Small Intestine.**—Kanzler adds 2 to the 23 cases of cancer of the small intestine which he has been able to collect, giving the details of the entire number. Fourteen of the patients died without an attempt at operation, being generally moribund when first seen. Only one patient, a man, survived out of the 11 operated on, and he succumbed nine months later to pneumonia. Six of the patients were in too advanced a stage of malignant disease for the operation to be more than palliative, and only 3 obtained relief and brief lengthening of life. In one case in which five feet of small intestine were resected, the patient lived for five months. In the single case in which the operation was done in two sittings, the patient, a man, survived for nine months until he contracted fatal pneumonia. Any operation on the small intestine is dangerous. Scarcely 50 per cent. of the material analyzed exhibited symptoms allowing a clinical diagnosis. Vague resistance was noted in a very few cases, and a subjective sense of pressure in a few others. Adhesions with adjacent organs were frequently encountered. Intestinal hemorrhage was observed in only 2 instances.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

41 (XXXII, No. 7.) Sind die hemolytischen Immun-Körper oder die Komplemente Katalysatoren, also Fermente? L. v. Liebermann.
42 *Antefixatio uteri. Uebertragung. F. Ahlfeld.
43 *Die Prognose bei Operationen des Vulva-Carcinoms. D. Grünbaum.
44 *Fall von schwerer Stovain-Vergiftung nach Lumbal-Anasthesie nebst Bemerkungen über halbseitige Anesthesien (stovain intoxication). Trantenroth.
45 *Dampfdusche als Expectorans (steam douche bath to promote expectoration). A. Lissauer.
46 *Treatment of Increased Arterial Pressure in Arteriosclerosis.—Steigerung des arteriellen Druckes bei der Arteriosklerose und deren Behandlung. A. Erlenmeyer.
47 Ueber die praktische Verwendbarkeit der Pavyschen Titrationsmethode für die Bestimmung des Zuckers im Harn (Pavy test for sugar). M. Elger.
48 Ueber Kiefer-Cysten (in jaw). H. Kronheimer.
49 Ueber Klystiere und Irrigationen. M. Sternberg. (Concluded.)
50 Zur Kasuistik der Missbildungen (monstrosities). L. Hecht.
51 (No. 8.) *Malachite Green Culture Medium for Typhoid Bacilli.—Der kulturelle Nachweis der Typhusbacillen in Faeces, Erde und Wasser mit Hilfe des Malachitgrüns. F. Loeffler.
52 Apparatus for After-Treatment of Open Pneumothorax.—Apparat zur Nachbehandlung des offenen Pneumothorax. H. Seidel.
53 Zur Frage der Hebotomie. Blumreich.
54 *Iodismus acutus und Thyreoiditis acuta. Lublinski.
55 Cystoscope on the Principle of Maisonneuve's Bougie.—Cystoskop nach Maisonneuveschem Prinzip. O. Ringleb.
56 Eine neue Cirkulations-Kühlung für die Finsen-Lampe. Axmann.
57 Künstliche Trommelfelle aus Paraffin (artificial ear drum). Hamm.
58 Simplified "Four-Cell" Bath.—Das Vierzellenbad in einfachster Ausführung. A. Philippson (Hamburg).

42. **Protracted Pregnancy in Case of Antefixation of Uterus.**—Ahlfeld noticed in 2 cases that the pregnancy was unusually long and the children abnormally large after preceding antefixation of the uterus. In looking over the literature he found records by eight authors of pregnancy from forty-three to fifty-two weeks in length in multiparæ who had been previously treated by antefixation of the uterus.

43. **Prognosis of Carcinoma of Vulva.**—Grünbaum reports 5 cases from Landau's clinic which confirm the conclusions drawn from study of the literature, namely, that radical removal of carcinoma of the vulva was followed by freedom from recurrence in a certain proportion of cases, even when there was metastasis in the inguinal glands. To insure the best prognosis it is necessary to extirpate with the primary growth the inguinal glands on both sides, far into sound tissue, irrespective of the findings on palpation.

44. **Intoxication from Stovain.**—Trantenroth describes a case of severe intoxication consequent on lumbar injection of 0.06 gm. stovain, preceded by 1 to 1,000 solution of adrenalin. The patient was a parturient in difficult labor and the anesthesia was preliminary to forceps extraction. Ten minutes after the injection the patient complained of suffocating, the lips and vaginal mucosa became cyanotic, the pulse slow and small, respiration slow and shallow; she became unconscious, but revived somewhat after injection of 2 gm. of a 20 per cent. solution of camphor. The muscles were completely relaxed and both arms and legs were paralyzed.

The child was safely extracted, with surprisingly little loss of blood. By the next day all symptoms had subsided except difficulty in moving one leg. Three days later intolerable headache developed, with pains in the shoulders, radiating into the limbs, worse at night. After these severe pains had lasted for four days, a sudden sensation as if an electric current had been passed through her body, was followed by a remission of all pains, but she felt stiff and her right leg was subjectively ice-cold. Fourteen days after the injection symptoms of a local spinal meningitis and of a right neuritis of the roots developed. The woman was unable to leave her bed until five weeks after the lumbar injection, and her gait was not normal for several weeks later, owing to a painful cramp in the knee. Trantenroth ascribes the meningitis to chemical irritation from the stovain, and remarks that an ascending suppurative meningitis might have developed if there had been puerperal infection. The irritation is not surprising, he remarks, when we consider that the solutions of stovain have an acid reaction, induce hyperemia and irritate the tissues. Braun has even witnessed gangrene from their use. In Sonnenburg's case a 10 per cent. solution of stovain was injected into the abdomen on account of a septic process. The hyperemia, irritation and possibly gangrene which it induced at the point of injection evidently provided a good culture medium for the streptococci in the blood, and fatal suppurative meningitis developed. Trantenroth has been much impressed with the advantages of lumbar anesthesia in obstetrics. The anesthetic does not affect the child, while chloroform is liable to act on the child and to increase the tendency to asphyxia. Lumbar anesthesia does not favor hemorrhage later, as chloroform does, but has a directly opposite effect. It also enables a laceration of the perineum to be sutured at once without further anesthesia, after waiting tranquilly for the termination of the third stage of labor.

45. **Steam Douche to Promote Expectoration.**—Lissauer has been using for a year a method of stimulating the secretions which has proved very effectual and harmless in his hands. A spray of steam at a temperature of from 43 to 52 C. (110 to 125 F.) is sprayed rapidly over the upper part of the body for fifteen seconds, followed by a cold fan douche for three or five seconds, after which the patient is rapidly rubbed down and dressed. He cites 16 cases in detail to show the prompt effect on the expectoration induced by this procedure. It does not produce much of an appreciable reaction on the skin, but the patients feel the relief very soon.

46. **To Reduce Blood Pressure in Arteriosclerosis.**—Erlenmeyer regards the abnormally high arterial pressure in arteriosclerosis as a self-regulating process. When the blood pressure is not high treatment should aim to raise it, possibly by carbonated saline baths, not over 30 C. (86 F.) in temperature. In cases with moderately increased arterial pressure, the viscosity of the blood should be gradually reduced and kept down by a gradually progressive course of iodids. In patients with very high arterial pressure the danger of rupture of a blood vessel should be averted by periodically repeated venesection, keeping the viscosity of the blood reduced with iodids.

51. **Malachite Green Culture Media for Typhoid Bacteria.**—Loeffler has now had several years' experience with malachite green agar, and regards it as a great improvement in the technic for differentiation of typhoid and allied bacteria.

54. **Acute Iodin Intoxication and Acute Inflammation of the Thyroid.**—Lublinski was treating a syphilitic with iodid when the thyroid began to swell; the course of the case demonstrated that the iodid was causing acute thyroiditis. This condition subsided on suspension of the drug, but increased again as it was resumed. He reviews a few similar cases on record.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed, page 920.

59 (LXXX, Nos. 1-2.) *2 operierte Fälle von Leber Ruptur (of Liver). Thole.

60 *Zur Kenntnis der traumatischen Pankreas cysten. F. Honigmann.

61. *Zur Resektion des carcinomatösen Magens (stomach). A. Brüning.

62 *Beitrag zur totalen resp. subtotalen Exstirpation des carcinomatösen Magens (stomach). H. Ito and S. Asahara (Kyoto).

63 Infektiöses Aneurysma der linken Coronar-Arterie als Teilerscheinung einer Septicopyaemie nach Osteomyelitis acuta infectiosa femoris. E. Ruge (Bonn).

64 Ueber syringomyelische Schultergelenkverrenkungen (dislocation of shoulder). D. G. Zesas.

65 Exp. Untersuchungen und klin. Erfahrungen über die Verwendbarkeit von Novokain für die örtliche Anästhesie. H. Heineke and A. Laewen (Trendelenburg's clinic, Leipsic).

66 Kahnbeinbrüche der Fusswurzel (fracture of scaphoid bone). Bergmann.

67 (Nos. 3-4.) Melano-Sarkom des harten Gaumens. Beitrag zur doppelseitigen Oberkiefer-Resektion (of upper jaw for cancer of hard palate). H. Seidel.

68 Torsion of Adnexa in Inguinal Hernia in Young Children.—Stiel-Drehung der Adnexe in Leistenbrüche im frühen Kindesalter. N. Damianos.

69 Ueber Luxatio pedis sub talo. Wendel.

70 Ueber die alveolaren Geschwülste der Glandula carotica (tumors). E. Kaufmann and E. Ruppanner.

71 Ueber einen pathologischen Befund bei "Fusssohlenschmerz" (Morton's disease). Pochhammer.

72 Anatomisches über "Paget's disease of the nipple." A. Schambach.

73 Ueber kongenitale sacrococcygeale Fisteln. A. Martina.

74 Zur Aetiologie der angeborenen Hüftgelenksverrenkung (dislocation of hip joint). P. Ewald (Vulpius' clinic, Heidelberg).

75 Zur Technik der Osteoplastik am Schädel (on skull). C. Sultan.

76 Principles of Arterial Collateral Circulation.—"Entstehung und Wesen des art. Col.—Kreislaufs." M. Katzenstein. Reply to Bier.

77 (Nos. 5-6.) *Zur Behandlung der Knochenbrüche. Heusner (Barmen).

78 *Ueber Harnblasensteine (stones in bladder). J. Finsterer.

79 *Zur Pathologie des Carcinoms der weiblichen Urethra (in women). W. Knoll (Constance).

80 Zur Aetiologie tumor-verdächtiger Cysten der langen Röhrenknochen (long bones). P. Glimm.

81 *Ueber die bisherigen Resultate der verschiedenen operativen Eingriffe bei Coecum-Tuberkulose und Appendicitis tuberculosa (comparative study of results of various modes of operative treatment). P. Campeche (Roux's clinic, Lausanne).

82 Die Diastase der Unterschenkelknochen bei Distorsionen des Fussgelenkes (separation of bones of leg in dislocation of ankle). Vorschutz.

83. Ueber die extraperitoneale Blasen-Hernie (of bladder). R. Lücke.

84 Fall von subkutaner Mastdarmabreissung durch Ueberfahren (tearing out of rectum). Kirstein.

59. **Rupture of Liver.**—The patients in Thole's 2 cases were healthy soldiers. In one the esophagus had been ruptured as well as the liver, but it caused no symptoms and was a surprise when discovered at the autopsy. Thole discusses the indications and best technic for treating ruptures of the liver. He advocates tamponing without suture for all bullet wounds and for rupture with much crushing of the tissues and ragged edges. He remarks that the liver in even very young children takes a suture as well as that of the adult. The rupture of the liver in the patient who recovered was a comparatively smooth tear, and it was sutured with three stitches with No. 6 catgut. Notwithstanding internal bleeding, the pulse is liable to become stronger after a time. The first disturbance in the pulse must be regarded as merely a sign of reflex nervous shock. The area of liver dullness grew rapidly smaller owing to the local traumatic paralysis and distension of the transverse colon.

60. **Traumatic Cysts in Pancreas.**—Honigmann devotes 74 pages to a study of this subject, to which his interest was attracted by a case personally observed. The patient was a healthy young man; the symptoms indicated contusion of the left kidney after trauma affecting the left upper abdomen. A retroperitoneal tumor gradually developed, which was reached by a lumbar incision, as it was uncertain whether it originated in the kidney or pancreas. The cyst found in the pancreas, contained all three of the pancreatic ferments, and there were indications of traumatic perinephritis. Honigmann reviews 70 similar cases that he has found on record, the age of the patients ranging from 2 to 62 years. The tumor is the clue to the diagnosis, especially the fact that it is covered by the stomach above and by the transverse colon below when these parts are inflated. General weakness and progressive emaciation are other important symptoms. The cramp-like pains sometimes noted subside after eating. The intestinal functions are disturbed, and constipation amounting to actual occlusion has been observed in some cases. The prognosis is favorable with opera-

tive treatment, but a case is known in which diabetes developed after an interval of eight years of health. In conclusion Honigmann remarks that any traumatism affecting this region demands caution. A spontaneously arrested hemorrhage would offer less chances for cyst formation or other disturbances later if the patient were kept in bed for several weeks and carefully supervised.

61-62. **Resection of Carcinomatous Stomach.**—Brüning analyzes the experiences at Giessen, where resection of the stomach on account of carcinoma has been done thirty-two times. The mortality was among the smallest on record, 18.8 per cent., only surpassed by that of Maydl, who has reported 18.6 per cent. mortality in 25 operations. The deaths were due to pneumonia in three instances, and to collapse, embolism and chloroform once each. Some patients succumbed to recurrence of the growth two and one-half and four and one-half years after the operation, the average survival of those who succumbed to recurrence later being about sixteen months.

Ito and Asahara report from Japan a case of total resection of the stomach on a much debilitated patient who succumbed to collapse. In a second case the resection was partial and the patient survived six months. They remark that cancer of the stomach does not reach the surgeon until in such an advanced stage that radical extirpation is scarcely possible. The results in such cases, however, should encourage the surgeon to operate in cases from which he has hitherto held aloof as scarcely indicating such serious measures. The article concludes with an extensive bibliography of international literature.

77. **Treatment of Fractures.**—Heusner describes his method of applying extension to the limb while at the same time allowing the patient to be up and about. The apparatus for the arm consists of a long strip of metal bent in the shape of the arm with four half bracelets soldered to it, one of which embraces the forearm, two the upper arm and one fits in the axilla. The metal strip is bent with an extra U-shaped turn at the elbow, to impart elasticity to it, and the strip projects beyond the hand. Extension is applied from the hand with an elastic band passing over a pulley in the outer end of the strip and fastened to the U-shaped projection of the strip at the elbow.

78. **Stones in the Bladder.**—Finsterer's long article is devoted to study of the urinary calculi included in the Billroth-Hochenegg collection at Vienna. The monograph is illustrated and a bibliography of 70 references appended.

79. **Carcinoma of Female Urethra.**—Knoll had occasion to observe the case of a woman of 68, previously healthy, who was suddenly affected with profuse hemorrhage from the genitalia. This was followed by pain in micturition and an adenocarcinoma originating in the urethra was found and removed. He has found reports of 32 such cases published in medical literature.

81. **Tuberculous Affections of Cecum and Appendix.**—The results of various methods of operative intervention in such cases have been diligently compiled by Campiche, the list of titles of works consulted numbering 202. The total number of cases is 379, with a mortality of 18.6 per cent. More than 33 per cent. of the patients remained in good health for months and years afterward. On the whole, about 37.9 per cent. of all the patients succumbed sooner or later to their tuberculous affection or its results. Ileocecal resection makes the best showing; during the last five years, with the frequent side-to-side union of the stumps, the recoveries amount to 86 per cent. When resection was supplemented by the construction of an artificial anus, more than 80 per cent. of the patients thus treated succumbed. Very extensive resections were always followed by the speedy death of the patient. Exploratory laparotomy seems to be a serious measure in these cases; only 15.7 per cent. of those thus treated remained permanently healthy. Simple incision of the abdominal wall was well tolerated, but most of the patients died not long afterward, and in more than a fourth of the cases a fecal fistula resulted. The Murphy button was used in 19 cases, and once was the direct cause of death. It is being used more frequently now than heretofore and without mishaps. Appendicectomy gave 86.4 per cent. of immediate recoveries, but as the almost invariable tuberculous process in the adjoining intestine persisted, the condition was not much improved, and only 13.6 of the 22 patients can be regarded as permanently cured. The material is classified and tabulated and the article written as objectively as possible.

Münchener med. Wochenschrift, Munich.

85 (LIII, No. 3.) *Pyelographie. (Roentgenographie des Nieren-Beckens nach Kollargol-Füllung). F. Voelcker and A. Lichtenberg.
86 *Upward Squint.—Höhenschielen. M. Miller.
87 *Zur Diagnostik der Choledochus-Steine. H. Ehret.
88 *Roentgen-Untersuchung des Magens und Darmes (radioscopy of stomach and intestines). H. Rieder.
89 Behandlung der suprakondylären Fraktur des Humerus und Femur mit Bardenheuerscher Extension. Schrecker.
90 Ueber die Douglas-Eiterungen. R. Morian.
91 *Zur Mobilisierungsmethode der Skoliosen nach Klapp. K. Nieny.
92 Origin of New Growths.—Zur Entstehung der Neubildungen. Ritter.
93 Vier Wochen in der Front der russischen Armee. F. Colmers.

85. **Pyelography.**—Voelcker and Lichtenberg have coined this term for radiography of the kidney and ureter after these structures have been filled with a solution of a silver salt. The fluid is introduced into the hilum of the kidney through a catheter in the ureter. The shadow cast by the Roentgen rays discloses any bending or kinking of the ureter, any obstruction or dilatation of the parts, and anomalies generally. They give some of the radiograms thus obtained in an experience with 10 patients, all women but one. The radiograms were failures in four instances, but in the others they were remarkably distinct.

86. **Upward Squint.**—Miller was able to banish evidences of irritation of the vagus and a diversified train of symptoms in 10 cases by correction with prisms of an existing upward squint. His first patient was a young woman who had suffered for months from extreme nervousness, oppression and cramps in the stomach, eructations, loss of appetite, nausea, cardiac oppression and other symptoms of pronounced neurasthenia. She also suffered excessively from seasickness and from nausea when riding in the cars or swinging. Correction of the squint banished at once all these symptoms in this and in all the other cases.

87. **Stones in Common Bile Duct.**—Ehret calls attention to the differentiating signs of stones in the common duct. The temperature is generally normal, but after longer or shorter intervals, from four to twelve weeks, the temperature may rise sometimes as high as 41 C. (105 F.) and persist high for one—or more rarely for two or three days, and then drop abruptly to normal. It remains normal between the attacks. These periodical rises in temperature are accompanied by exacerbation of an existing icterus, or its appearance if not already present. The icterus develops rapidly but declines very gradually. The liver is generally tender on pressure, but there are no spontaneous pains in the liver region. Ehret knows of two cases in which these attacks recurred at intervals for years, and yet there never were any spontaneous pains. One patient noticed merely an outbreak of sweat and a certain feeling of weakness before an attack. This triad of recurring temperature and icterus without pains has been observed by Ehret in 17 cases; its occurrence may be accepted as positive evidence of a stone in the common bile duct, although its absence does not necessarily exclude such a contingency. The symptoms are the expression of exacerbations of cholangitis, and stones in the common bile duct are peculiarly liable to promote such a process.

88. **Roentgen Examination of Stomach and Intestine.**—Rieder reviews some of the important findings that can be studied on the living subject after ingestion of a suspension of 10 or 15 gm. of bismuth in 50 c.c. of water. The large intestine can be examined by aid of a rectal injection of 100 gm. bismuth in a quart of milk, oil or water.

91. **Improved Technic for Mobilization of Spine in Scoliosis.**—The patient takes hold of a ring suspended as high above his head as he can reach. He is then instructed to raise the knee on the other side as high as possible and to clasp the

hollow of the knee with the free arm, bending the head far over on that side. The arms are then reversed, and this exercise is repeated ten or twelve times. Nieny states that it is remarkably effectual and convenient.

Riforma Medica, Naples.

94 (XXI, No. 48) Sull' azione dei raggi di Roentgen sul virus della rabbia (x-rays in rabies). A. Calabrese.
95 *Sulla cura delle anemie per mezzo di anticorpi (antibodies). G. Norsa.
96 Cura chirurgica della colecistolitiasi (stones in gall bladder). O. Cignozzi. (Commenced in No. 41.)
97 *Il metodo di Cathelin nella cura dell' incontinenza essenziale d'orina (epidural injections for incontinence of urine.) C. Bruni.
98 (No. 49) *La determinazione quantitativa dell'acido cloridrico del succo gastrico col metodo Petteruti (gastric juice). S. Barba.
99 Tumore misto congenito della lingua (of tongue). S. Rolandi.
100 *Caso di nevralgia del trigemino curata colla radiotherapia. A. Gramegna.
101 (No. 50.) *La formula leucocitarin nell'avvelenamento acuto prodotto dagli alcaloidi dei funghi velenosi, ed influenza dell' atropina sull'azione della muscarina (atropin in mushroom poisoning). G. Spagnollo and M. Signer.
102 *Radium Treatment of Rabies.—Sull'azione curativa dei raggi del radio nella rabbia da virus di cane. G. Tizzone and A. Bongiovanni.
103 (No. 51.) Importanza della radioscopia nello studio delle stenosi dell'esofago. S. Barba. Two cases.
104 *Sulle cirrosi biliari e del loro trattamento chirurgico. O. Cignozzi. (Commenced in No. 49.)

95. **Serum Treatment of Anemia.**—Norsa's experiences with 4 anemic patients treated with a prepared anti-anemia serum were not promising. The serum treatment caused a transient increase in the number of figured elements in the blood, but this soon passed away, and no permanent benefit was apparent.

97. **Epidural Injections in Treatment of Incontinence of Urine.**—Bruni tried this treatment in 6 patients, from 11 to 17 years old, with negative results. In 7 others, from 10 to 15, one or two injections permanently cured the incontinence. Eleven others, from 6 to 15 years of age, are still under treatment, and the improvement observed presages a cure in time. He commends this method of treatment as harmless and liable to prove extremely effectual. He found that 10 c.c. was not too large an amount to inject and was preferable to smaller doses. In an experience with more than 100 injections he never had any by-effects and never had any difficulty in introducing the needle into the saeral tract. See abstract, page 83, vol. xliii.)

98. **Petteruti Test for Hydrochloric Acid.**—Barba has been experimenting with the test devised by Petteruti of Naples. It is based on the fact that Congo-red paper is not affected by hydrochloric acid in combination with albumin, while it turns blue under the influence of even a trace of free hydrochloric acid. The yolks of two eggs are stirred into 300 c.c. of bouillon and the whole filtered. About 250 c.c. are then ingested by the person to be tested, and the rest of the bouillon is set aside. An hour later some of the ingested bouillon is withdrawn with the stomach tube. A 2 per thousand solution of hydrochloric acid is then added, a drop at a time, to 5 c.c. of the bouillon that had been set aside, testing each time to see how many drops are necessary to saturate the bouillon until the Congo-red reaction occurs. The procedure is then repeated with 5 c.c. of the stomach content. The difference between the results, multiplied by 50, represents the number of cubic centimeters of the solution of hydrochloric acid containing an amount of hydrochloric acid equivalent to that secreted in the stomach in the course of one hour. Experiments on healthy persons with this test showed that this amount was from 0.2 to 0.5 gm. Multiplying by 4 to bring the 250 c.c. to 1,000 c.c., the physiologic limits were 0.8 and 2 gm. The test was applied on 11 patients with stomach troubles and the results confirmed the clinical findings. The simplicity and rapidity of the test commend it, although it shares with similar tests the drawback that the secretion of gastric juice varies with different stimuli and with different people.

100. **Cure of Trigeminal Neuralgia with Radiotherapy.** The patient in the case described was a man of 33, who had suffered for six years with trigeminal neuralgia. He had undergone three operations for its relief, including Gasserectomy, but the neuralgia recurred always after a brief interval. The attacks of pain recurred every five minutes and the patient was much debilitated, as eating had become so painful that he refrained from solid food. Radiotherapy was then tried and improvement was apparent after three sittings. The "localizer" attached to the Roentgen tube was introduced into the mouth and applied directly to the edge of the upper jaw. Four H units were given at the first sitting, the rays corresponding to the number 5 on the Benoist radiochromometer. The sittings were repeated a week later and after the third week, and then were suspended for a month, as a slight reaction was apparent on the mucosa. Six sittings were given in all, representing a total of 26 H units. The neuralgia entirely vanished after the third sitting, and there has been no recurrence during the six months since. The patient can now eat like other people, but be is careful to refrain from washing with cold water.

101. **Blood Findings in Mushroom Poisoning.**—Tables are given of the findings in 3 cases of mushroom poisoning to demonstrate the marked leucocytosis which accompanies it. Experimental research showed that muscarine has the most powerful action in this respect. Also, that it might be possible to utilize in the clinic the antagonistic action of atropin, which, like pilocarpin, digitalin, carbolic acid, typhoid infection and malaria, reduces the number of colorless corpuscles.

102. **Radium Treatment of Rabies.**—Tizzoni's research on this subject has been chronicled in these columns, as also the fact that the government has provided him with radium to carry on his experiments on a larger scale. He here announces facts which seem to show that the germ causing rabies passes through two distinct phases in the cycle of its evolution. The first phase corresponds to the onset of the disease; in this stage the germs are fragile and easily destroyed by the influence of the radium. In the second phase they are more resistant and are influenced very little, if at all, by the radium rays. This renders more promising the prospects of successful radium treatment of hydrophobia in man if applied in the incipiency of the disease.

104. **Surgical Treatment of Biliary Affections.**—Cignazzi remarks that the Italian surgeons have not taken up the operative treatment of cholelithiasis and of cirrhosis of the liver as much as surgeons in other countries. In this and in his long article concluded in No. 48, he reviews the whole field of biliary surgery and discusses the various technics, with report of his successful intervention in 10 cases of stones in the gall bladder. In conclusion he classifies the various indications which call for cholecystostomy, for omentopexy or for splenopexy.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Assisted by H. R. M. Landis, M.D., vol. I, March, 1906. Paper. Pp. 304. Price, $6.00 per annum. Philadelphia: Lea Brothers & Co., 1906.

THE EXAMINATION OF THE FUNCTION OF THE INTESTINES, by Means of the Test Diet, Its Application in Medical Practice and Its Diagnostic and Therapeutic Value. By Prof. Dr. Adolf Schmidt. Authorized Translation from the Latest German Edition, by Charles D. Aaron, M.D. Cloth. Pp. 88. Price, $1.00 net. Philadelphia: F. A. Davis & Co., 1906.

MEDICO-CHIRURGICAL TRANSACTIONS Published by the Royal Medical and Chirurgical Society of London. Vol. 88. (Second Series, Volume the Seventieth) Cloth. Pp. 736. London: Longmans, Green & Co. (For the Royal Medical and Chirurgical Society of London), Paternostor Row, 1906.

THE OPERATIVE TREATMENT OF FRACTURES. By W. A. Lane, M.S., F.R.C.S., Surgeon to Guy's Hospital and Senior Surgeon to the Hospital for Sick Children, Great Ormond Street. Paper. Pp. 144. Price, 7s. 6d. London: The Medical Publishing Company, Ltd., 1905.

A HAND LIST OF THE BIRDS OF THE PHILIPPINE ISLANDS. By R. C. McGregor and D. C. Worcester. Publication of Department of the Interior, Bureau of Government Laboratories, No. 36, January, 1906. Paper. Pp. 123. Manila: Bureau of Printing, 1906.

BOSTON, THE PLACE AND THE PEOPLE. By M. A. DeWolfe Howe. Illustrated by Louis A. Holman. Cloth. Pp. 397. Price, $2.50. New York: The Macmillan Company.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, APRIL 21, 1906. No. 16.

Original Articles

MALARIAL INFECTION IN CERTAIN NATIVE VILLAGES OF THE CANAL ZONE.

ARTHUR I. KENDALL, PH.D.

Acting Chief, Board of Health Laboratory, Isthmian Canal Commission.

PANAMA.

When a body of men is sent to occupy a foreign country for any purpose, one of the first tasks of the sanitary authorities is to investigate and take precautions against the prevailing infectious diseases. The American occupancy of certain portions of the Isthmus of Panama was inaugurated by an investigation of the malarial fevers, for which this region has long been famous, and the results of this investigation form the basis of this paper.

In October, 1904, I was detailed to visit certain native villages, examine as many natives as might be necessary to insure accuracy of results, and to report on the percentage of inhabitants whose peripheral circulation harbored malarial parasites. The object of this work was not so much to determine the actual number of sick *per se*, but to include in the statistics indiscriminately the population of a certain area, noting just what proportion of the people harbored malarial organisms irrespective of symptoms. Obviously, after selecting the section to be examined, the best and most satisfactory method of procedure would be either to go from house to house personally or to send messengers armed with the necessary authority to compel the natives to report in person at a convenient station. In either event care must be taken to insure the presence of all members of each household at the time of examination; this necessitated the co-operation of the alcalde in each town, together with men who were personally familiar with the inhabitants. The local police aided much in this work, coming in contact with each and every native as they did; they were able to furnish lists of people living in a certain district and to keep them in town for examination.

Both the method of making house-to-house visits and that of requiring natives to report to a definite station was tried; in the former case it was found necessary to take houses irregularly, because the natives soon learned to anticipate our arrival and leave a day or two before their turn came, returning when their particular district had been worked up. In one case the population of a house at the time of our arrival was three; two days later it had risen to eight; the cause of this increase was a sense of security on the part of the natives that they would not be again troubled, together with an unexpected visit on the part of the police officer detailed to collect the inhabitants of that place for further examination. The plan of sending out a messenger was fully as satisfactory from the point of view of obtaining natives for our work, and saved much time that previously had been lost going from house to house.

By keeping track of the houses examined it was possible to obtain results which were derived from practically the whole population of the desired district, and the returns showed that in this respect the data on which the results are based were sufficiently comprehensive for our purpose.

Many problems aside from the primary object of this work presented themselves as preparations went on; only those, however, which could be made with the minimal expenditure of time other than that required for the real question to be solved were undertaken. They comprise the following:

(1) Primary data; ratio of infected to non-infected natives in certain locations as shown by the presence or absence of malarial parasites in their peripheral circulation. (2) Types of malarial parasites found during the course of the investigation, both with respect to species and stages in development. (3) Comparison of race, sex, age, occupation and relative immunity among the different peoples examined. (4) Species of mosquitoes, with particular attention to the genus *Anopheles*. (5) Effect of cinchonization.

In order to facilitate reference, this paper is divided as follows:

1. General technic, methods of examination, data upon which the methods herein described were based.
2. Towns visited, reasons for their selection.
3. Varieties of malarial parasites encountered; species of *Anopheles*.
4. Results of investigation.
5. Summary and conclusions.

I. GENERAL TECHNIC, METHODS, STAINS.

There are two methods available, practically, for the demonstration of malarial organisms in the blood: by using blood films, in which case the blood is not subject to any process which materially changes its morphology, for a time at least, and by fixing, drying and staining.

Authorities differ in their opinions as to the relative accuracy of these methods. Manson, who has had much experience with malarial blood and the technic of malarial examination contends that the film method is more reliable, while many other observers are in favor of stained preparations, although most of them admit that the latter method is perhaps more liable to misinterpretation in the hands of the inexperienced. I made two series of observations on this point to settle the matter as far as the work here was concerned. In choosing the method used in this work one must consider not only accuracy, which is the most important point, but such factors as time, convenience, simplicity and amount of material to be transported in case the relative accuracy between the two methods is approximately the same.

The first series consisted in the examination of nearly six hundred blood slides, both stained and unstained, to

become more familiar with the various forms of malarial parasites encountered in Panama, and secondarily to form some idea of the relative value of the two methods. The second series consisted in a careful study of one hundred cases as they came into the hospital, making one stained and one unstained preparation from each patient. The cases were not necessarily malarial, but were taken in order as they presented themselves. The results are:

Total cases examined	100
Total cases positive stained	69
Total cases positive unstained	68
Total cases positive stained, and negative unstained	3
Total cases positive unstained, negative stained	2

The slight difference, about 2 per cent., in favor of the stained preparations is well within the limits of error along other lines of the investigation, particularly with respect to the choice of a district for examination, which shall represent fairly the status of the whole town.

At Bohio, which is a fairly large town, for example, it was impossible to examine every native, and the probable error in selecting a representative section is at least 2 per cent. On the other hand, the rapidity which could be obtained with film preparations was much greater than would be the case with stained preparations. To reduce the working error as much as possible, the specimens of blood for examination were made in duplicate, and the results show that about 4 per cent. of the cases were positive on the second slide which were negative in the first examination. The fact that one could examine quickly a fresh preparation to determine its suitability for malarial examination was the final factor which led to the selection of the film method; one could examine two films to determine their excellence in a very brief interval, and in case another was needed it could be obtained before the native had left the station, a very desirable procedure, because the inhabitants were wont to depart as soon as they were allowed.

Technic of Preparing Films and Stained Preparations.—Cover glasses and slides more than sufficient for the day's work were cleaned in strong soap solution, rinsed several times in rain water, and stored in alcohol. When about to make either a film or smear the lobe of the ear was cleaned with alcohol, rubbed briskly and freely punctured with a lancet, which was kept, when not in use, in 5 per cent. phenol solution. The first drop of blood was wiped off, and the second, after it had welled up to a suitable size, placed on the slide or cover glass. In no case was the glass allowed to touch the ear.

If the slide and cover glass were perfectly clean there was no difficulty in obtaining a suitable film; the blood flows evenly between slide and cover glass, forming eventually a spread which contained the blood cells spread in a thin, uniform layer with the cells just far enough apart that they do not overlie one another. If this result was not obtained the first time a second film was made.

Stained preparations were also made after the preliminary cleaning of the ear; the blood drop was placed on one end of a slide, another slide was so placed that it lay between the blood drop and the end of the slide; if now the top slide was brought up to the drop of blood, the latter would flow along the edge of the upper slide, which could then without pressure be gently drawn along the lower slide in such a manner that the blood would form a thin, perfectly spread layer which would dry almost instantly. As a rule one could be certain after five minutes' examination of a film that it was posttive or negative; frequently one would find parasites in a positive slide almost at once.

Staining.—Although most of the staining was done toward the close of this investigation, it may be well to include the methods in use here because there are a few points not men-

Fig. 1.—Ancon Hospital, Canal Zone; capacity 400 beds. Seen from Tivoli Hill. (We are indebted to Dr. Henry Emerson Wetherill, of Ancon Hospital, for this and the illustration on the opposite page.)

tioned by other authors which have been found useful in this connection.

Intravitum Staining.—I have tried with a certain amount of success to make an intravitam stain which shall stain the parasites in films; such a procedure would be useful because the blood would not be previously subjected to drying or other harmful agent which almost certainly must affect to a certain extent at least the morphology of the parasites.

Methylene blue has for a long time been used for this purpose, and this substance is the basis of the stain I used. The methylene blue is polychromed in such a manner that it contains a certain percentage of a substance or substances variously called polychrome methylene blue, or azur. It is probable that azur is the correct term, and it will be referred to as such in this paper. It is formed as follows: ½ gm. pure silver nitrate is dissolved in about 50 cm. of water, and precipitated by 10 per cent. caustic soda solution. The resulting precipitate is washed with distilled water by decantation until the wash water is free from chlorids, then added to the following solution while still moist: 1.2 gm. pure sodium chlorid are placed in 100 cm. of distilled water, thoroughly dissolved and filtered; 1 gm. pure methylene blue is added, thoroughly dissolved, and again filtered. To this solution is then added the precipitated silver, and the whole placed in the 37 degree thermostat and allowed to remain a week. At the end of this time it will be noted that the color of the liquid has changed from blue to a purplish tint, which is due to the formation of azur. The amount of azur may be determined roughly by adding a small amount of the solution of chloroform; the latter dissolves the azur, producing a more or less pronounced purplish color, the depth of which is approximately an indication of the amount of azur in the solution. The sodium chlorid is added to make the solution isotonic with the blood. After filtering the solution containing azur it is ready for use; one places a drop of this stain on a slide, and drops the cover-glass containing the blood drop to be examined in the drop of stain. The two mix instantly, and one has but to wait about a minute for the various elements to absorb the color when the preparation is ready for examination. Such preparations keep rather longer than films without this stain. Preparations made this way show a slight darkening of the field, which makes the contrast between the erythrocytes containing parasites and the serum somewhat greater, as the organisms, while not stained, stand out more.

The extracellular forms of both the tertian and estivo-autumnal parasites stain; the crescents of the latter stain a deep blue. Leucocytes show a certain amount of metachromatic staining in their granules, and even after being deeply stained do not lose their motility. Blood platelets stain blue.

Staining Films and Smears.—There is a great variety of stains from which to choose, but the majority of investigators at the present time use some modification of Leishmann's stain, usually Hastings' or Wright's. The former has given us the best and most constant results. Until recently we have been unable to obtain the powder for this stain from the United States which shall always give us the best results, and we have been in the habit of making the stain in the laboratory. At the start considerable difficulty was encountered in making the stain exactly the same each time; the time necessary to perform the various steps necessarily varies, but the relative coloring of chromatin and protoplasm of the parasites should remain the same. This variation seemed to be due to the fact that the addition of the eosin to the methylene blue could be stopped at various intervals, obtaining at each interval a stain which had an affinity for either protoplasm or chromatin; beginning at one end one observed that the protoplasm was heavily stained, while the chromatin was quite unstained, and by varying the proportion of eosin relative to the methylene blue the chromatin could be brought out, with the protoplasm uncolored. I finally hit on the scheme of adding a small proportion of eosin, after preparing the polychromed methylene blue as recommended by one of the writers, then withdrawing a small portion of the fluid after stirring, and placing it on a porcelain plate. On the white background one could add experimentally repeated small portions of eosin to see if it had the desired effect; then repeat the performance in the bulk of the stain. It was found that when

Fig. 2.—Entrance to Ancon Hospital, Canal Zone, showing part of the hospital grounds.

the precipitation had gone far enough, the precipitate separated very quickly from the rest of the fluid, leaving a liquid which was almost colorless except for a substance which, apparently derived from eosin, resembled superficially fluorescene. This titration method has been tried again and again and invariably has given a stain that is very constant in its results. Aside from this, the stain used was made exactly according to the Hastings formula, and always gave excellent pictures. In order to save time in staining a long glass dish was provided with two glass rods, placed two inches apart. On these rods one could place ten slides and stain them at one time. The appearance of the malarial parasites when stained by this stain is so well known there is no need of discussing this point at this time.

II. TOWNS VISITED; REASONS FOR THEIR SELECTION.

Statistics bearing on the distribution of malaria in a given region must, to be of value, represent in the ultimate analysis the mean condition of the population in this respect. The mean may be derived in a variety of ways—by selecting a town or section whose medical returns show an average number of sick per unit population when compared with similar statistics from other towns; by taking equal numbers of cases from each of two or more towns of approximately equal size which, on the one hand, represent maximum infection, on the other minimal infection; or, finally, by comparing relatively the same numbers of inhabitants from the different races or nationalities living in the same zone.

The inherent error is necessarily great, no matter how one elects to make these observations, and it was finally decided best for the work here to examine a representative portion of the town of Bohio and practically the whole of the village of Gatun. These towns are in the Canal Zone, under the sanitary jurisdiction of the United States government, and they are very favorably situated and easily reached.

Bohio.—Bohio is situated on the line of the Panama Railroad, about seventeen miles from Colon and half a mile from the Chagres River. The population is about eight hundred, composed, to a considerable extent of West Indians, and more particularly of Jamaicans. They have lived in this climate a relatively short time and presumably have not acquired, to any considerable degree, an immunity to malaria or even to any extent a malarial tolerance, if such a thing occurs.

The location of this town on the railroad, its proximity to the proposed Bohio dam, and its situation on several important trails leading into the interior of the country have combined to make it a place of considerable business importance. Many of the inhabitants work either directly or indirectly for the United States government, and the agricultural interests are much less important here than in the town next to be described. The percentage of native-born to foreign-born inhabitants is small, contrasting in this respect also with the other place chosen for investigation.

In both Bohio and Gatun the inhabitants do not use mosquito bars nor do they screen their houses. This has an important bearing on the dissemination of malaria and the introduction of preventive measures against this disease. Most of the houses in Bohio are frame, with corrugated iron roofs—a very common type of structure here. This town, then, represents a fairly large settlement with a great preponderance of foreign-born inhabitants and a considerable commerce with the interior and the sea coast, factors which are not without significance in the study of malaria. Very little difficulty was experienced in obtaining the required number of inhabitants for examination: a section of the town representing about one-third both in area and population was selected and the inhabitants were brought to the local dispensary in detachments by a special messenger. The school children, however, were visited in the school houses.

Gatun.—Gatun is the opposite of Bohio both in the character of the people and in the structure of the houses. Both places, however, are surrounded, to greater or less extent, with swamps, and both lie on the Panama Railroad line. It is chiefly the difference in the people, both in regard to their ancestry and customs, which is responsible for the differences which will be commented on later.

This town is situated on a little island in the Chagres River about three-fourths of a mile long and three-eighths of a mile wide in the widest portion. It is formed by the Chagres River in front and the canal in the rear: the canal is water-containing for some distance above this point at the present time. The land slopes gently from the center of the island to the water on all sides, making a sort of natural drainage, although at no point is the land very much elevated above sea level. Except for a few swampy spots on the ends of the island, the island itself is free from stagnant water.

The natives are very primitive both in their manner of living and in their customs; they occupy huts such as one would expect to find in central Africa, made of cane sides with thatched roofs or adobe. Their furniture is very primitive, composed chiefly of hammocks made of a species of tough grass and a few rude chairs covered with raw hide. They still grind rice and corn with huge wooden mortars and pestles, and use boats made from hollowed-out tree trunks. They have lived on this spot for generations, and civilization has made remarkably little headway in changing their customs. They are superstitious, reserved and difficult to approach, and it was with much trouble that we succeeded in getting their permission to make our observations, although when they finally saw that the work would benefit them they reluctantly consented.

Bohio and Gatun, it will be seen, differ greatly in their houses, inhabitants and manner of living, and admirably lend themselves to this work.

(To be continued.)

PLASTIC RECONSTRUCTION OF THE LOWER JAW.

CARL BECK, M.D.
CHICAGO.

The removal of a portion or of the whole mandible has its effect on the functions of the jaws and the form of the face. The effect on the functions of the removal of a portion of the jaw will depend greatly on the part of the bone removed and its size. If a small portion of the middle part of the jaw is removed the function may not be disturbed at all. If half of the ramus is removed the mastication and the speech may be greatly impaired, and if the whole jaw is removed the function of the lower jaw will be entirely abolished. Even a small resection, however, will have an effect on the shape of the face which, as a rule, will be shown by disfigurement or deformity.

The jaw plays such an important rôle in the formation of the face, through support of the cheeks and the prominence of the chin, that the symmetry of the face and the esthetic effect is greatly disturbed if a part is

missing. This is shown in those cases in which, through lack or asymmetry of teeth, or through atrophic changes, the face becomes disfigured.

These points have to be taken into consideration in cases of operation on the lower jaw; more especially on account of the possibility of preventing such deformities by the proper treatment during operation.

There are many indications for operations on the mandible which call for a partial removal of the bone. Inflammatory conditions which lead to necrosis of the bone, and especially tumor formations, are the main causes for such operations. Whether the resection of the jaw is made permanent or only temporary is of great importance. If a permanent resection is made it is the duty of the surgeon to see that the part removed is in some way replaced by some resistant tissue which will give support to the soft structures and which at the same time will allow motion. It will be necessary to replace the removed bone by some material which will give to the face the normal expression and shape. The best method at present is the replacement of the removed structures by foreign bodies in the shape of dental plates. A plate which holds the teeth and imitates the shape of the jaw is well borne within the mouth, ordinarily causes very little irritation, gives to the soft structure a support, and restores the shape and symmetry of the face. Many surgeons, among them Bardenheuer of Cologne, have tried to restore a jaw by autoplasty, but the results are not very gratifying. The majority of experienced men have decided in favor of the prosthesis. Difficulties arise, however, when the prosthetic appliance is to be put in place, some time after the operation, because the deformity and impairment of function takes place immediately with the removal of the bone.

Hence it becomes necessary to apply the prosthesis at the time of operation and this is a difficult task because the operation is undertaken by a surgeon and the prosthesis is applied by a dentist, and hardly ever is the surgeon at the same time a good dentist or the dentist at the same time a good surgeon. It was, therefore, a very natural result of experience that Dr. Claude Martin of Lyons, who is a dental surgeon of great ability, should be the first to give to us a method of removing the jaw without causing disfigurement or impaired function. Although he was not the first one to expound the idea, he was the first to apply the method practically and a large number of patients operated on with good results are a proof that his method is practical and successful. He prepares a prosthetic appliance before he removes the jaw, or part of it, and implants it at the time of the operation in the cavity remaining on the removal of the jaw. The appliance is made of hard rubber, with a complicated system of channels through which the cavity, which naturally secretes a great deal of pus, can be irrigated and kept clean. This hard rubber prosthesis is only temporary and is replaced later by the permanent dental plate with teeth which can be removed for cleansing purposes and carried in the same manner as the ordinary plate after the removal of the teeth which hinges on the alveolar process. Each individual case requires an individual plate, so that no such plate can be bought from a manufacturer. Some operators have objected to this method in some particulars, although they accept the principle of it, namely, that a prosthetic appliance is necessary, but as material they have used metal instead of hard rubber. Boennecken and Partsch of Breslau have suggested the use of metal splints; the former suggested a wire splint, the latter a plate which can be cut to a desired size and fastened into the jaw when needed. Of course this means that the splint can be applied only in median resection, but when one-half of the jaw is resected clear up to the joint, the metal appliance is out of the question. Martin's method, however, allows even in these cases, or in cases of total removal of the mandible, the application of a prosthetic appliance. The accompanying illustration (Fig. 1.) is from photographs of two models which I received from Claude Martin, through the kindness of Dr. Carrel, and which represent the average case of a central and lateral resection. Dr. Martin is especially proud of the innovation of a certain flange to prevent the lateral displacement of this appliance. He calls this flange "ailette." I find, however, that Dr. Thomas Gilmer of Chicago, as early as 1891, recommended a similar device and has

Fig. 1.—The upper figure is the jaw of the patient. The two others are Martin models.

even gone so far as to prevent the displacement of the flange by applying an additional device which keeps the lower jaw from opening too much, through an elastic band from the chin to a skull cap. His paper was published in the *Dental Review* and has not found entrance into the general medical literature.

This would be a general outline of plastic reconstruction of a jaw in case of removal by any method during the operation. What shall we do, however, when this precaution has not been taken and the jaw has been removed partially or totally, the cavity allowed to shrink, when mastication, speech and other physiological functions are impaired and when the face has become greatly disfigured? A case of this nature has come under my observation during the last year and has given me a chance to study this branch of plastic surgery.

Patient.—Miss D., aged 32, a school teacher, comes from a healthy family. She had never been sick up to the time when her present ailment began, that is about three and one-half years ago.

History of Disease.—She began suffering from a toothache in the middle portion of her lower jaw. Her teeth seemed to be perfect. She was a good looking girl with perfectly symmetrical features. A dentist whom she consulted about her

Fig. 2.—Before cosmetic operation. Front view.

ailment incised a small gum boil, but the process did not heal out. On the contrary a larger tumor appeared on the site of the old one. A doctor was called in consultation and he in turn incised the larger abscess, without relieving her condition.

Operation.—After a few weeks of palliative treatment he decided that something radical had to be done and he took the

Fig. 3. Before cosmetic operation. Side view

girl to a hospital where he removed, in one operation, the whole jaw from one joint to the other. The accompanying illustration (Fig. 1) gives the aspect of this jaw and it shows that the ascending arch and portions of the horizontal arch are perfectly normal, that the central portion of the jaw was the seat of a central necrosis within an osteomyelitic focus. A large portion of bone had been destroyed, but there were some pieces of healthy bone tissue remaining. Such an extensive operation was entirely uncalled for; but if it had to be done, a preliminary prosthesis of the kind described above would have been the proper method of treatment. Instead of that, an incision was made from one ear to the other underneath the chin, the jaw was removed in sections, leaving only some shreds of periosteum, fortunately for the patient, because spiculæ of bone afterwards formed from this periosteum and aided materially in the treatment of the case.

Fig. 4.—After cosmetic operation. Side view.

Postoperative History.—The wound did not heal entirely by primary union. The retracted scars on the face show where deep and long suppurating fistulæ kept the cavity draining. Ultimately, however, the wound healed. The result is apparent from the accompanying illustrations (Figs. 2 and 3). It will be seen that instead of a prominent chin there is a small lobule of contracted tissue which allows the comparatively

Fig. 5.—After cosmetic operation. Front view

large lips to droop. The upper lip is projecting a good deal and the teeth of the upper jaw are prominent. The nose apparently projects a good deal more. The cheeks are retracted and behind the cheeks are hollow spaces into which a thumb can be placed where the ascending arches had been removed. The speech of the patient was greatly impaired. The constant running of the saliva from the mouth was a very disagreeable symptom. The mouth cavity was exposed to the air and on

account of this exposure easy disintegration of food particles within the mouth took place and a penetrating odor made the patient's breath particularly offensive. These symptoms not only produced a great deal of discomfort and suffering, but they also brought the patient to the point of losing her position as teacher. This is mentioned because it shows the importance of reconstruction of the jaw and how much the surgeon ought to try to prevent such a disastrous result.

Cosmetic Operation.—Dr. Goslee, a dentist of great ability, especially in the line of prosthetic work, had charge of this case and he tried with an ingenious device in the form of a plate hinged to the upper jaw to restore the function of the mouth and the shape of the chin; but all of his trials failed because there was no support and a plate could not be borne. He finally gave it up. After a consultation with him I thought first of trying Dr. Claude Martin's method by restoring the cavity in which the jaw had lain, excising all the scars and forcing Martin's plate into the new cavity. This seemed feasible, but the more I studied the question the more convinced I became that a septic infection would be inevitable and that the patient, who had been suffering so long and was in delicate health, would succumb to this extensive and uncertain method of plastic surgery. I decided, therefore, to try another method. After finding some small spiculæ of bone, the longest about one inch, within the scarred tissue I thought hard paraffin would form a good support for the soft tissue and if tolerated would ultimately allow us to restore the original shape of the jaw. I began with the injection of a small quanity into the deepest portion in front of the ear. The injection was done in the usual manner, with a syringe devised by my brother, Dr. Jos. Beek. The paraffin was well borne and there was no reaction. I became bolder and injected larger quantities, first into the side, then into the center and gradually to the whole extent of the missing jaw. Of course it was impossible to straighten out immediately the deepest portion where the fistulæ that had been draining so long were situated.

Result.—The result was getting better with every injection. Not only did the salivation stop, but the movement of the jaws was possible and the appearance greatly improved as the accompanying illustrations show (Figs. 4 and 5). The offensive odor disappeared, the speech is perfectly normal and the patient has resumed her work as teacher.

Several months have now passed and when the patient was exhibited at the Chicago Medical Society, September meeting last year, the members of the Society could satisfy themselves of the fairly good functional and cosmetic results. I hope that the paraffin, which has not diminished in size up to the present, will remain for a long time, but even if it does not, I think that injections can afterward be made to replace the missing material. After a time an attempt will be made to form a ridge within the mouth for a plate.

ILEOSIGMOIDOSTOMY WITH OBLITERATION OF THE ILEOCECAL COMMUNICATION, FOR THE TREATMENT OF ULCERS OF THE COLON.

R. C. COFFEY, M.D.

Surgeon to and Medical Director of the North Pacific Sanatorium.

PORTLAND, ORE.

For many centuries past chronic dyspepsia, obstinate constipation, cramps and colics and peritonitis have been valuable cloaks by which medical men have been able to hide their ignorance of pathologic conditions within the abdomen. Asepsis and the rapid development of abdominal surgery have enabled us to study living pathology in recent years. This has taught us to place peritonitis in a class with dropsy, in that it is a result of some other real disease, directly connected with the digestive, eliminative or reproductive organs in the abdominal cavity. Patients treated ten or fifteen years ago for abdominal cramps and colics of recurrent type are now known to have had, in the great majority of cases, either appendicitis or gall-bladder disease, neither of which is curable by medical treatment. More recent years have brought to light the fact that a large percentage of the persistent incurable gastric disturbances or dyspepsias are due to ulcer of the stomach or duodenum, obscure gall-bladder disease, occasionally pancreatic disease and other conditions in the abdominal cavity, of a mechanical nature. The diagnosis and treatment of these conditions are being rapidly put on a scientific basis.

Other cloaks which hide much abdominal pathology are obstinate constipation and persistent diarrhea. Medical men are recognizing more all the time that many of these cases are due to lesions of the colon in the form of ulcers, etc., but admit that medical means are

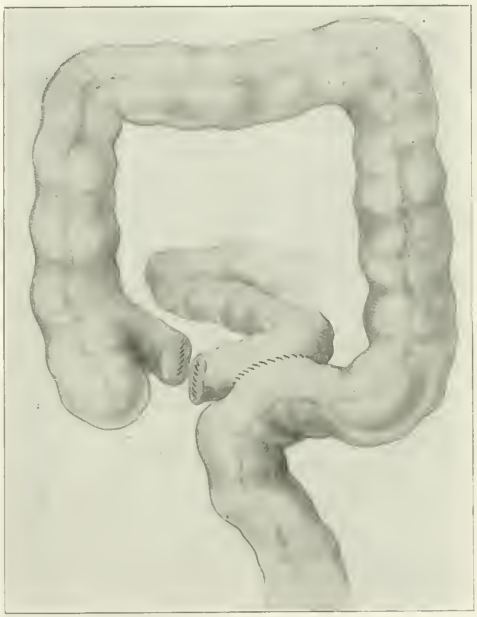


Fig. 1.—Ileosigmoidostomy with obliteration of the ileocecal communication.

but partially successful in the treatment of these diseases. The persistent and tireless work of Mayo, Moynihan and many other surgeons, on the stomach and duodenum have taught us that the proper and successful way to treat an ulcer is to give it rest. Success along this line has been little short of marvelous. By draining the stomach at its lowest point into the jejunum, almost all ulcers of the stomach and duodenum are curable. It is somewhat strange that more has not been done in the treatment of ulcers of the colon, which, while not so frequent or fatal as ulcers of the stomach, are much more frequent and have produced many more invalids than we have heretofore imagined.

Weir, by bringing the appendix through the abdominal wall, to be used as an irrigating tube, has unquestionably added much to the efficiency and convenience of medical and topical treatment of diseases of the colon.

This will, no doubt, be sufficient in many instances. There are many cases, however, which are not perceptibly benefited by any kind of medical or local applications, even when in more accessible portions than the upper parts of the colon. Therefore, surgery will again be called on for permanent relief.

Cheyne, Burghard and others have recommended and applied, in a number of cases of persistent ulcers of the colon, colostomy, using the ascending colon, thus eliminating the functions of the colon for several months or years at a time, and have been very successful in the cure of these conditions. Treves and M. H. Richardson have removed large portions of the colon for abnormal dilatation and gaseous distension, with very good results. Osler recommends this procedure as justifiable. Some surgeons, notably the Mayos, have removed or short-circuited almost the entire colon for cancer and extensive fecal fistulæ, and have concluded that the colon is by no means essential in the process of digestion and assimilation, and that its ablation, even as far down as the sigmoid flexure, apparently produces no disturbance.

Therefore, in view of the fact that it is well known that ulcers are best treated by absolute rest; that rest can only be produced by relieving the part as far as possible of its function; that medical and topical applications are only partially successful in many cases; that drainage of the colon by a colostomy on the right side has proved successful in the treatment of ulcers of the colon; that non-use of the rest of the colon apparently produces no degenerative changes, and that the colon apparently plays no vital part in the process of digestion and assimilation, I have felt justified in doing the operation described in the title of the paper. The case in which the operation was done is related below.

Patient.—Mr. S., aged 22, had been troubled with constipation, more or less obstinate, for four years. For the past two years the pain and pressure of the gas in the bowels, with other effects of the obstinate constipation, had been so marked that the patient had been unable to perform his labor as a farmer. His trouble had gradually grown worse during this time, notwithstanding the fact that he had consulted a number of eminent physicians concerning his trouble. All they were able to make out in the way of diagnosis was constipation. As his trouble grew worse, he was unable to get normal action of the bowels for several days at a time with even severe cathartics, and then only with the aid of high enemata, which were used with some result. He came to me Oct. 3, 1905, giving the above history.

Treatment.—After examining him thoroughly I agreed with the diagnosis which had been previously made and referred the man to an internist for treatment. He pronounced the case one of spastic constipation, and put him on a special diet and line of treatment. Nov. 23, 1905, the patient returned to me, stating that he had obtained no relief from the medical treatment and that he had lost all hope of relief in medicine. He suffered constantly from pain, which he located chiefly at the splenic flexure of the colon, stating that it seemed that the contents of the bowels, including gases, were obstructed at this point and could not pass. The distension of the colon was so marked and distressing that he could locate it very accurately himself, which location could be verified by percussion.

Operation.—At his request I made an exploratory incision, cutting down through the right rectus muscle. This revealed a somewhat congested and markedly distended ascending colon. The appendix was not seriously diseased, but was removed, lest it might be acting as a source of irritation. Another incision was made through the left rectus muscle, which allowed an examination of the splenic and sigmoid flexures. Examination revealed no visible stricture or obstruction at this point, but showed a congested and distended colon.

Postoperative History.—As soon as the man had recovered from the immediate effects of the operation we found that he still complained the same as before. His trouble continued, and we had an opportunity to observe carefully his condition and found that no amount of cathartic medicine would produce a free action of the bowels except with the use of high enemata. Severe cathartics would nauseate him, but would do no more. His pain seemed to be intense, as described before. At the end of three weeks from the time of this exploratory operation he made the arbitrary demand that we open him up again and do something more radical, as he preferred death to his condition. We delayed this, hoping that he might get better, but with no avail. At the end of five weeks, having been thoroughly convinced that the basic cause was ulcers which we had failed to locate at the exploratory operation, we suggested the idea of making a colostomy, draining the right side. This he refused to have done on account of the inconvenience of the artificial opening, so the following operation was proposed and performed Dec. 29, 1905:

Second Operation.—The abdomen was opened in the median line and the ileum cut in two near the ileocecal valve, between clamps. The two ends were turned in and an ileosigmoidostomy was performed with clamps and sutures, after the manner ordinarily used in the modern method of gastroenterostomy (Fig. 1). At this operation an ulcer was located about two inches above the point of anastomosis of the sigmoid flexure and another about three inches higher up on the descending colon near the mesentery. We were not able to examine the splenic flexure through this wound, but believe that there was unquestionably another ulcer at this point, which was overlooked at the former exploratory operation.

Result.—After this second operation the patient made an uninterrupted recovery. Three days afterward he began to take nourishment, and in ten days he was on a full and regular diet. He has never had pain in his colon since, nor has he had the distension. His bowels have acted almost every day since the operation without a cathartic, and yet without diarrhea. His appetite has been good and his digestion has been perfect, so far as we can see. At the early date of Feb. 13, 1906, the case looked like a complete success.

February 16 the patient returned, stating that his bowels were not acting properly and that he could feel gas in the colon as far around as the cecum. On examination I found it also. On giving him a cathartic no action was obtained, but the patient said the action seemed to pass upward into the descending colon. By digital examination no fecal matter was found in the rectum. By giving a high enema in large quantities the bowels could be made to act. The same thing was repeated and was kept up for ten days. All the fecal matter, according to his sensation, passed first down deep into the pelvis and then back up into the left side. On thoroughly studying the case I finally made a correct diagnosis. I opened his abdomen and found that the point of junction of the former anastomosis had become adherent to the abdominal wall, thus fixing it. The sigmoid flexure above the point of anastomosis, which was nearly twelve inches in length, had prolapsed to the bottom of the pelvis, making a sharp kink at the point of anastomosis and thus directing the fecal current into the sigmoid instead of the rectum. This was lifted up and the sigmoid sutured to the peritoneum just above the psoas muscle in the left flank. The loose sigmoid flexure was shortened by plication from above downward with a number of transverse rows of catgut sutures. This relieved the condition and prevented prolapse of the sigmoid. The bowels are acting well at this date (March 21), and patient is up and feeling well. I think this is an important observation in connection with the operation and my mistake was in not attending to this at the previous operation, as the danger was foreseen at that time.

This case is typical of the condition which has been described by certain authors under the head of spastic constipation. The continuing cause, which may have been secondary to an atonic constipation, was apparently the ulcers. The symptoms were immediately relieved by short-circuiting the affected part. The final result of this procedure is, of course, in the future.

In studying this subject, there seems to be a pathologic parallel between the stomach and certain portions of the colon. For instance, food is detained in the stomach for a few hours by the action of the pylorus. There is, then, no depot till the cecum is reached. Fecal matter is somewhat detained here by gravity. It is next detained above the so-called sphincter Oberne and held in the sigmoid flexure and descending colon for some time. The final depot is the rectum.

Overwork, nervous strain, indiscretion as to diet and hours for meals, disturb and change the secretions of the stomach, producing indigestion and, finally, gastric or duodenal ulcers. By irregular habits as regards the bowels, nervous strain, etc., an habitual and atonic constipation is produced. By mechanical pressure of hardened feces or from the effects of decomposition ulcers are produced in these parts of the colon.

Ulcers of the stomach, when irritated by the passing of food over them, produce a spastic condition of the pylorus which prevents the healing of the ulcers, holds the contents of the stomach too long and in some cases produces a dilatation and consequent increase in the disorder of the secretions. Ulcers of the colon, at times, apparently produce a spastic condition of the intestine at or near the point of the ulcer which has the same effect.

These depots in the alimentary canal are the ulcer areas in the young and the cancer areas in later life.

Short-circuiting and draining cures ulcers of the stomach and thereby may prevent cancer to an extent in later life. It is probable that the same is true and reasonable in the treatment of ulcers of the colon.

WHITHER ARE WE DRIFTING IN THERAPEUTICS?*

CLARENCE H. VAUGHT, M.D.

Vice-President State Association of Railway Surgeons; President Central Kentucky Medical Society.

RICHMOND, KY.

I believe that one of the greatest questions of our time is before us and one that we can have more influence in solving than can any other class of men or profession with which I am acquainted.

"The patent and proprietary medicine conspiracy," which has reached the climax of human endurance, is being assailed from many quarters, and the rankest of these gigantic frauds are on the run, and I want this society to get on the firing line and, if possible, to assist in their speedy extermination.

A number of high-class periodicals, the *Ladies' Home Journal, Collier's Weekly* and others, are the means, and Edward Bok, Norman Hapgood, Samuel Hopkins Adams and M. J. Sullivan are the men behind the means, that have caused such an awakening among the profession throughout the country. These men are real pioneers in this noble work. Is it not strange that a great profession like ours, with the massive intellect among our members, has been so stupid to the real situation, so well satisfied, so afraid, perhaps, that some wag might accuse the members of selfish motives, that not an effective word has been written or said against this monster curse? Suppose we are accused of selfish motives and every other thing in the calendar. This should not disconcert us or cause us to swerve so much as a line from out duty to ourselves and to humanity. I believe that every medical association in this country should elect to honorary membership these men who are doing such conspicuously good work for all the people and our profession as well.

Since this great question has been brought to our very door by laymen in a lay press, I thought it might be pertinent to ask, "Whither are we drifting"? Have we, by careful analysis and deduction, made any advancement toward a higher and more perfect therapy, or have we, like so many others, been drifting by the enormity of the advertising matter and the seductive wiles of that ever-present and always agreeable gentleman, the detail man of proprietary medicine, back to the abyss of neeromacy, ignorance and superstition? Have we not been cajoled by this means into giving at least our tacit indorsement to most, if not all, the proprietaries and specials that we see, many of which are without merit, others absolutely harmful?

No man can foreknow what will be the action of from ten to fifteen medicines together, even could the action of a single one be foretold. Your office and mine are being liberally supplied with samples of these new compounds, almost daily, of every imaginable name, some beautiful, others poetic, but we could never tell from the name what one of these compounds contained. The reason for this, I suppose, is because a name that means nothing can be as easily copyrighted as one that means something. The idea is to protect patent or secret formulas from other vultures, whose prey is human hope and credulity, and the ignorance or carelessness of the profession of which we are or should be representative.

THE DETAIL MAN.

The detail man calls on you at your office—doesn't want to take much of your valuable time, but has something that he knows is of interest to you when you have a moment's leisure. With visions of the importance of the message and of the fact that a stranger is within, you rush matters, and the doctor, it may be, who has failed in practice or a young one who uses this means of saving sufficient money to enable him to begin the practice, shows you what he has to offer (always ethical and meeting every test), gives you enough literature to last you and your family a month, and a liberal supply of samples, and expresses the hope that you will try them.

THE DESIRED EFFECT.

Strange as it may seem, at your first opportunity you do try them. The visit had the desired effect. You accept the statement, ethics and all, and some unfortunate, it may be the first patient who comes to you, is made the victim. It makes little difference for what the patient consults you, as many of the proprietaries are fully recommended, and testimonials from thoughtless physicians are not wanting to show you that you have a specific for any disease that confronts you. The medicine is tried on different patients, some of them have told you perhaps that the medicine at least was palpable, sailing seems easy, a ready-made prescription for all who call, so easy to write, perfectly simple, the other fellow doing the work you should do, while you get the pay.

Behold your surprise, however, in the course of a short time. You have been called to a home. After your visit has been concluded, you perhaps have suggested the use of some medicine for a poultice, you give explicit directions that the medicine should be applied to a cloth, then to the offending part. At this time some godly grandmother elevates her spectacles and asks, "Doctor, is that medicine, you are going to send, this Philogistine"? It may be some younger and more

* Read before the Madison County Medical Society.

charming member of the household who thus rudely breaks in on your dreams of what you expected to accomplish with the new remedy for all inflammatory conditions (for each member of the household knows all about it). You are compelled to answer, "Yes, this is the medicine I intended to send you." Grandma will say to you that "Mrs. Jones used it on her cow's leg, and Mrs. Smith used it on her husband's leg—they had some of it left and sent it over—we tried it, but it didn't do John's lungs any good." This is simply an illustration that could be duplicated many times in the course of a year with this and hundreds of other proprietaries.

You will, no doubt, say that this and that one has done good service for you. Perhaps this is true, but have you at such times taken into account that great law of natural therapeutics, the operation of the *vis medicatrix naturæ*, the manner and processes of healing which occur independently of our art? It is this law that enables the homeopath to relate his sugar cures and the medical skeptic to smile in his infidelity and that brings you and me out of the many close places into which proprietaries and carelessness have placed us. And thus have we not been duped ourselves in seeking some more potent means to relieve the suffering that we see around us?

SEEKING REMEDIES.

Yet we ought not to be criticised for this alone, as it has been truly said, "Man from the earliest antiquity has continually sought for means for the relief of pain."

"The most ancient record of the race introduces the hero of the flood, plunged in a deep and scandalous sleep under the influence of wine which he had prepared. At the siege of Troy the Grecian surgeons were skilled in the art of assuaging pains of injured men by the application of alcohol and carbonic acid to their wounds. Thus the venerable Nestor came to the relief of the wounded Macheon, with a poultice composed of onions, cheese and meal, mixed with the wine of Pramos.

"Other agents still more potent were known to the wise men of Egypt, and by them transmitted to their friends in other lands. Some preparation of opium or Indian hemp it may have been with which the beautiful Helen, after the siege was ended, once more in her lawful home, coming out of the 'sweet smelling lofty room chamber,' drove away sad memories from the minds of her husband and his friends by making them drink of wine into which she had cast a drug, chosen from the cunning and excellent stock presented to her by an Egyptian princess. Most potent drug this must have been, for we are told that it delivered men from grief and wrath, and caused oblivion from every ill."

Seeking relief from pain is certainly our province and our duty. We see that this idea has been handed down to us from the earliest antiquity, but whither are we drifting in its pursuit? You will observe from the history of these early times that people then and now in no way connected with the art or the practice of medicine prescribed and found others ever ready to swallow the potion regardless of its contents. There is or must be a charm or witchcraft in the act of prescribing, especially so for the other fellow, for this practice began at an early day and shows a steady growth all down through the ages until now. There is certainly nothing that we can imagine that so delights the laity as to prescribe something for the relief of a condition of which they are profoundly and totally ignorant.

PRETENDERS.

There is no profession which is more frequently used as a cloak by all kinds of mountebanks, charlatans and pretenders than is ours, and these pretenders too often prescribe for conditions concerning which they are ignorant. The medical profession is noble and beneficent in its aims, presenting more opportunities for doing good than perhaps any other, and yet within its ranks practitioners of the black art flourish on the credulity of the people with whom they come in contact. The medical profession offers a fertile field for men of this class, especially in this day of proprietaries and secret formulas, when little or no skill is required in writing or in filling a prescription.

USING PROPRIETARIES.

You might flatter yourself that only the ignorant and unlettered could become the victims of this class of medicine men, but in this you are sadly mistaken, for you will often have your pulse beat faster and your quiet indignation pitched to its highest point by seeing some of your most cultured people falling in line, possibly your best friend or your best patient.

Sir Dyce Duckworth, before a scientific body in London, England, recently stated that "the art of medicine is fast declining," and he links together, inadvertently no doubt, literary culture and scientific habit. The editor of *Hospital*, in same city, regrets that this should have been done, exclaiming that they are incompatible and adds, "Men of literary culture, but destitute of scientific training, furnish most conspicuous examples of incapability to observe accurately and of inability to reason correctly, which we witness every day in the world around us. They are the patrons of quack medicines and anti-societies; they are apt to dogmatize serenely concerning matters of the very elements of which they are profoundly ignorant."

This well illustrates my oft repeated statement that ours is a profession that none can know anything about save the initiated, and all of them unfortunately do not know. But whither are we drifting? I fear I tell but the truth when I say that, with the great commercial spirit of the day, we are drifting toward proprietaries and quack medicines. Some of us perhaps have anchored. To them I would say, cut loose from your mooring. We are not drifting into this habit altogether by preference or for the interest of our patients, but carelessness and ease, I think, are likewise responsible for part of it. This habit, insidious as it is, I believe our worst enemy. Samuel Hopkins Adams states, in *Collier's Weekly*, that "ignorance and credulous hope make the market for proprietary medicines."

I do not mean to imply that all proprietary medicines should be condemned. Many have been found useful, if their preparation requires greater skill or more complicated apparatus than your druggist possesses, and if the formulas are known and approved they should be used when indicated. Imagine yourself prescribing something that you know absolutely nothing about except what the genial detail man has told you. Imagine, again, if you will, that same gentleman telling you the indication for the use of the medicine that your case demands; you accept it and use the medicine suggested to you by this source. In doing so do you not lower professional standard, your own dignity and become the dupe of the manufacturer of the drug and the well-groomed agent who tells you in what class of cases to use it?

WHAT IS OUR DUTY?

The state of North Dakota has a law that prevents the sale of patent medicine (and this includes secret proprietaries), unless the formula is printed on the package; and Kentucky has a bill now pending to make a

similar law (presented by Hon. L. F. Johnson of Franklin County). I hope that a similar law will be enacted in all the states. If we were to do our duty, we would need no law to protect us and our patients whose lives are put in our keeping, and we should not under any conditions or circumstances prescribe a medicine that we were not absolutely familiar with.

I trust that the members of this society will join with me in resolving to use in the future only those drugs from which we can reasonably expect results, and, if possible, to have all remedies compounded by our own druggists. We should also notify the druggists that we shall accept only pure chemicals, such as those made by reputable firms. It is not our province altogether to find only palatable drugs. Let the homeopath have a monopoly along this line if he will; that which we most desire is results. Occasionally a medicine that is pleasant to the taste can have little or no therapeutic value, except for its mental effect on some of our most unfortunate cases. That we will appeal to the intellect rather than to the superstition, prejudice and ignorance.

I see each succeeding day signs of better things and that there is room for improvement no one can doubt, since it is estimated that over $100,000,000 has been expended annually for patent and proprietary nostrums. No wonder is it that legislatures are slow to enact laws to modify the sale of these "patents"; no wonder it is that the manufacturers of these miserable compounds are on the run, because at least $75,000,000 of this money must be profit, and if there is any one thing that will invite a keener interest than another it is the probable loss of money.

Then think what so vast a sum as this could and would do in influencing legislation that would be detrimental to this nefarious business. The manufacturers use every device known to the professional pirate and plunderer, such as threatening newspapers with loss of their advertising and appealing to retail druggists to help protect their property rights. These vendors want and demand our closest secrecy in protecting their rights, as they say. Afraid even to let the uneducated class of their countrymen know what they have been swallowing for all these years and for what they have paid so many honest dollars, notwithstanding the fact that these manufacturers know that the users of their medicines are, of all people, most gullible! I have seen it estimated that 75 per cent. of all the prescriptions that are written by the medical profession of this country call for proprietaries whose formulas are known and proprietaries whose formulas are secret, about one-half each. Is this not a shame when we know that many of the so-called proprietaries are no better than the rankest of the patents?

Let us see to it that we have a druggist prepare our prescriptions who is competent so to do; that we demand of him a square deal and only the purest medicines that can be had, asking no quarter from any source and showing none, save when compatible with the highest sense of duty to our patients and to ourselves, and lend our assistance in this campaign of education wherever and whenever we can be of service. Thus the people with whom we live and practice our art will have a higher regard for our ability and fidelity.

Corpora Aranti.—These structures in the brain are named after Giulio Cesare Aranzio (English, Aranzi; Latin, Arantius), an Italian anatomist, born at Bologna in 1530, died in 1589, according to the *Medical Book News*. He was professor of anatomy for thirty-two years in the university at Bologna, and physician to Pope Gregory XIII.

FOUR POINTS OF INTEREST IN MAJOR ANESTHESIA.

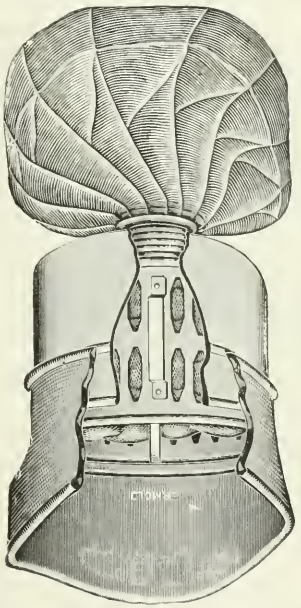
ROBERT H. M. DAWBARN, M.D.

Professor of Surgery, New York Polyclinic Medical School and Hospital. Surgeon to the City Hospital.

NEW YORK CITY.

The first of these points on anesthesia has to do with the use of ethyl chlorid prior to the administration of ether. Since the safety of this very pleasant method has been demonstrated it has rapidly grown in popularity. Dr. V. C. Pedersen, anesthetist to Roosevelt Hospital, has informed me that, unless otherwise directed by the surgeon, this is now always his preference instead of beginning the anesthesia with liquid laughing-gas.

Six months ago a certain New York firm informed me that hereafter they intended to manufacture their own ethyl chlorid instead of importing it; and, through their representative, asked my advice as to the best size of tube to supply. After som experimenting I advised



The inhaler. This illustration does not show the relative size of the thin rubber air-bag, which is large enough for the tidal air of the largest man.

a 5 c.c. tube. This is drawn to a fine point at one end, easily broken off and sealed by a blowpipe flame.

I also recommend the following method of usage: Assuming that the Clover air-bag principle of ether inhaler is the one to be used (the simple and cheap form known by my name and used for nearly 15 years at the City Hospital has never yet been followed by ether pneumonia), two or three of the 5 c.c. tubes of ethyl chlorid are wrapped each in an opened gauze sponge, with an elastic snapped about this jacket, and are then dropped within the air-bag. With the face-piece in position, the tip of one of these tubes is broken—through the rubber bag—and the anesthesia is at once commenced. Thus there is no waste, and the gauze wrapper prevents cutting the air-bag during breakage. If instead the tube be broken outside the bag and then

dropped within it, so rapid is the escape of this most volatile liquid that one is fortunate to secure the services of half the tube's contents.

If need be, the second and third tubes can be broken too. As soon as the patient is thoroughly asleep the ether-cage is slipped home in the face-piece, and gradually the ether anesthesia replaces that from the ethyl chlorid where a long operation is required.

Of course, where much more complicated and expensive ether inhalers are to be used, this tube of Squibb's is not indicated; and instead a spray of ethyl chlorid is directed into an opening in the inhaler for the purpose, from a large container. At present, however, we are assuming that the simpler kind of apparatus—which is presumably in use by a large majority of practitioners—is to be used. Chilling the lungs by ether continually poured on and using a towel-and-newspaper cone, or an Allis inhaler, is so obviously the chief cause of ether pneumonia that it would seem that the re-breathed, lung-warmed ether of the Clover air-bag principle should by to-day have commended itself to all members of the profession. If there be still some who differ, however, it may be worth while to add that all the experts in anesthesia in New York—I mean the men who do nothing else—are agreed on this point. This method also results in a great saving in ether, and the patient recovers more certainly and sooner, being far less saturated with the drug.

2. The second point to be mentioned is a means of preventing trouble from chloroform when this is used at night in presence of a naked flame in the room. Experience has shown that before the end of a long operation the surgeon and his assistants will be coughing in consequence of the chloroform becoming decomposed and giving off nascent chlorin. About fifteen years ago —perhaps more—it occurred to me to try hanging, not far from the lamp or gas jets, handkerchiefs dipped in ammonia. The resultant chemical affinity at once produces ammonium chlorid and prevents the cause of the coughing. Recently I mentioned this to Dr. Thomas L. Bennett, perhaps the best known of the men doing exclusively anesthesia work here, and he said he had never before heard of it. As I have not found it mentioned in a rather hasty review of text-books, I assume that at least this plan ought to be more widely known.

3. The third suggestion of this paper is far from original, but how forgotten it is in practice! I refer to giving the anesthetic during the natural sleep. In all possible instances of major operating during the earliest years let us select an hour which is regularly that of the child's daily sleep, and, entering the darkened room noiselessly, let us anesthetize so cautiously and gradually—using chloroform mask held far from the face, employing the drop method and being in no hurry—that the little sleeper only awakens when the operation is ended!

It makes an astonishing difference in the amount of chloroform required whether this safest of plans (and most neglected) is used, or whether instead the frightened child is awake, struggling and screaming. Also, be it remembered, it earns the mother's gratitude.

Although cases of accomplishment with chloroform well in childhood, during natural sleep, such anesthesia, may elect, is far more difficult, almost impossible indeed, and rarely can be done on adults at all.

The fourth and last of the four small points I wished to bring out—if, indeed, anything is small that makes at all for the patient's comfort or safety—is in reference to the advice which, without exception, one sees included in the instructions to the young anesthetist; namely, always to remove from the patient's mouth any plate containing artificial teeth.

In my opinion, there are exceptions to this, and the physician should be entitled to use his judgment. Obviously the plate should be removed when it is so small that, if dislodged, it might prove dangerous either by being swallowed or lodged in the gullet. In many instances, however, the patient is wearing a complete or nearly complete set or sets and possesses only an ordinary size of pharynx. In such cases, swallowing or choking on the plate is out of the question; and when it is taken out the cheeks and lips so fall in as to encroach, in some patients, to a serious degree on the breathing space within the mouth. This is worth remembering, especially when there chances to be much nasal obstruction, which is far from rare.

In a recent conversation with Dr. James T. Gwathmey, anesthetist to the City Hospital, I was pleased to observe that on this point he holds the same views.

ACCURACY IN DIETETICS.*

DUDLEY ROBERTS, M.D.
Associating Visiting Physician, Brooklyn Hospital
BROOKLYN.

The general trend toward accuracy in many departments of medicine serves to emphasize the prevalent disregard for a similar advance in dietetics. The importance of carefully selecting the articles of food for certain cases is very generally urged, but not as commonly practiced. Although it would seem to be a subject of equal importance, but little stress is ever laid on the necessity of regulating the amount of food to fit the exact known demands of a particular individual. That the demands and hence the supply of food should vary with the weight, shape of the body, age and condition of activity has been too well proved to permit of question.

We can only account for the prevalent neglect of this factor in dietetic ordering by supposing that the matter has never been presented in practicable form. It is essential that the number of nutrients in a given food substance be quickly determined and that the patient receive instructions as to the amount of food in such terms as can be readily comprehended by the average invalid or nurse. Food weighing must be discarded, as it certainly can not be carried out in the ordinary household, public eating place or even in the average institution. Unquestionably we must consider not what is served, but rather what is actually eaten; otherwise one may be misled into making serious errors.

Fortunately the number of simple foods, the value of which it is necessary to know in order to prescribe a dietary to the class of cases that should have definite diet lists, is comparatively small; from these simple foods one can readily calculate the value of such compound foods as are ordinarily used in these diets. In the accompanying Table[1] the most convenient unit of household measure has been taken and the food value of its content of food in the state in which it is eaten has been calculated; the value of the various articles in the raw state has been taken from the works of Atwater, Rubner, Chittenden, Hutchinson and others. While these units may not at any time be exact, in a number of meals the deficiencies and excesses balance.

It is not contended that more than a small minority of patients need to be put on regular diet lists; very

* Read before the Medical Section of the Kings County Medical Society.

1. The author, on request, will furnish these tables of food supply and demands on a card in vest pocket size.

often dietetic treatment is demanded, but a few instructions as to the amount and kind of food or a few interdictions will suffice. There are, however, a considerable number of individuals afflicted with diseases of an acute nature, chronic gastrointestinal disease, chronic undernourishment anemias and toxemias who need absolute and accurate instruction as to the amount and kind of food that is desirable for them to take; if this be not done, dietetic treatment amounts to nothing, the patient being guided in the choice of food by convenience or passing whim.

In addition to the value of such a table as a ready means of arranging suitable dietaries, we would emphasize its value in calculating the amount of nutrition that has been taken by a particular individual. Even with many conditions to a slight degree, we may say that the weight of the particular individual and the amount of muscular activity indulged in largely conditions the number of calories required. This may be expressed as in Table 2, on the basis of an average person of 150 pounds weight.

TABLE 2.—FOOD DEMANDS OF ADULT PER DIEM.

CONDITION.	No. of calories to each 2 lbs. body wt.	Total Calories	Gms. proteid
At rest in bed	25	1800	72
Slight activity	30	2200	88
Light work	35	2600	115
Moderately hard work	40	3000	120
Very hard muscular labor	45-55	3375-4100	135-160

The proteid demands of the adult under different conditions have been added to the above and the proteid, in terms of grams, is given in Table 1 for each food that has any import-

TABLE 1.—VALUES OF COMMON FOODS IN HOUSEHOLD MEASURES.

FOODS AS EATEN.	Actual Amount.	Household Measure.	Calories	Grams proteid.	REMARKS
Milk	8 oz.	a glassful	160	8.4	
Buttermilk and skimmed milk	8 oz.	a glassful	80	8.0	
Cream	8 gms.	a teaspoonful	20	0.2	
Condensed milk, sweetened	20 gms.	a heaping teaspoonful	50	1.8	
Condensed milk, unsweetened	20 gms.	a heaping teaspoonful	30	1.8	
Cocoa powders	10 gms.	a heaping teaspoonful	40	2.0	
Chocolate powders	10 gms.	a heaping teaspoonful	90	1.2	Greater nutritive value depends on larger amount of fat.
Beef juices, beef tea, bouillon clear soup	5 oz.	a teacupful	5-30	1-3	
Proprietary beef fluids	8 gms.	a teaspoonful.	1-10	4-2	
Beef and egg powders	10 gms.	a heaping teaspoonful	30	8	
Thick or cream soup	8 oz.	a soup-plateful	100-250	.....	Nutritive value increases as the thickness is made greater by proteid or carbohydrate addition to milk.
Alcohol	1 gm.		7		
Whiskey, brandy, etc.	1 oz.		85		
Wines	1 oz.		15-40		
Sugar	10 gms.	a heaping teaspoonful	40		
Eggs, whole	50 gms.	one	70		
Eggs, yolk		one	55	2.4	
Butter	10 gms.	a one-inch cube	65	0.6	
Cheese	10 gms.	a one-inch cube	45	3.0	
Meat and fish, lean	50 gms.	heaping tablespoonful	60	12.0	¼ lb. of lean steak will thus give 185 calories an ordinarily generous portion of rib-roast with moderate fat about 225 calories.
Meat, medium fat	50 gms.	heaping tablespoonful	100	7.0	
Meat, very fat	50 gms.	heaping tablespoonful	150	4.0	
Oysters, small	8 gms.	one	2	.5	
Oysters, very large	25 gms.	one	10	1.5	
Bread, slice, 4x4x½ in. thick.	25 gms.	one slice	50	1.5	
Crackers	3-10 gms.	one	12-30	.3-.6	
Cereals, in cooked state	30-40 gms.	a teacupful	110-150	3-5	A cupful equals a saucerful; a bowlful equals 2 cupsful.
Cereals, eaten as purchased	5-7 gms.	heaping teaspoonful	18-25	.5-.7	
Shredded wheat	30 gms.	one	100	3.	
Triscuit	15 gms.	one	50	1.5	
Peas, fresh or canned	35 gms.	heaping tablespoonful	25	2.0	The apparent low value due to large amount of water.
Peas, dried	25 gms.	heaping tablespoonful	100	6.0	A tablespoonful of dried peas to a plateful of soup.
Beans, dried	25 gms.	heaping tablespoonful	90	5.0	
Beans, fresh or canned	30 gms.	heaping tablespoonful	30	1.0	
Potatoes, medium size	90 gms.	one (3 inches long)	80	1.0	
Jelly, sweetened	.....	a teacupful	50-120	.....	Value depends on amount of sugar and gelatin used.
Apples	100 gms.	one	40	.2	
Oranges	125 gms.	one medium size	60	.5	
Bananas	50 gms.	one medium size	45	.7	
Dried fruit, prunes, etc.	100 gms.	medium size saucerful	100-200	1-2	Value depends largely on the sugar used as preservative.

the ignorant can tell with a certain degree of accuracy the amount of food ingested in these simple household measures of bulk; from these estimations given by the patient one can quickly calculate the nutrients ingested and compare them with the bodily needs of the particular individual. This is often a matter of the greatest importance in deciding whether such symptoms as loss of weight and strength and poor general condition are due to deficient intake of energy or to some pathologic condition exhausting the bodily energy.

By the term caloric estimation of food is meant the calculation of the energy contained in terms of the large heat unit, the large calorie, the amount of heat it takes to raise the temperature of one liter of water one degree centigrade. We know that one gram of fat when completely oxidized gives rise to about nine such calories; one gram of carbohydrate or proteid to four calories. While the demands of the body vary ant content. It will be noticed from the above that I accept the teaching that 16 per cent. of the nutrients ingested by the adult should be proteids. In Table 3, to the tabulation by Atwater I have added the necessary number of grams of proteid per diem; it will be seen that the ratio here of tissue building proteids to the distinctly fuel foods—the fats and carbohydrates—is different from that which obtains in a proper adult diet, the calories supplying 19 per cent. of the nutrients.

TABLE 3.—FOOD DEMANDS OF THE CHILD.

AGE.	Proportion of food of adult at moderate work	Calories	Gms. proteid
Under 2 years	30 per cent.	900	42
3-5 years	40 per cent.	1200	55
6-9 years	50 per cent.	1500	70
10-13 years	60 per cent.	1800	85
Boy, 14 to 16 years	80 per cent.	2400	115
Girl, 14-16 years	70 per cent.	2100	100

84 Remsen Street.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XVII.

CIRCULATORY DEPRESSANTS.

The circulation may be depressed by acting on those structures the stimulation of which causes an increase in blood pressure. Hence we might divide these agents into two groups: 1. Those acting on the heart mainly, directly or through the centers. 2. Those acting for the most part on the vessels, directly or indirectly.

An agent which slows the heart without causing a compensating increase in the strength or the amplitude of the contraction, or a constriction of the vessels, must cause a fall in the arterial pressure, as will be readily understood by reference to what has previously been said in regard to acceleration of the heart causing a rise in pressure. Here, too, we have in every case a combination of effects, and the resulting change in the circulation must depend on the predominance of one or another. As a matter of fact, we have no circulatory depressant which is used therapeutically to slow the heart by direct action on the myocardium, but there are a number which induce slowing by indirect action.

Aconite.

Therapeutic doses of aconite cause slowing of the heart by stimulating the vagus center, without materially affecting the strength of the individual contractions or the condition of the vasomotor center. The result, therefore, is a fall in arterial pressure.

The lessened cardiac action is accompanied by a decline in the temperature, whether this was previously normal or that of fever. This effect is commonly ascribed to the change in the circulation, but it has not been proved that the heat regulating center is not involved in the action.

It will be noticed that the effects of digitalis and aconite on the circulation are diametrically opposed, except for the slowing of the pulse rate, which both induce.

Toxic doses of aconite act directly on the heart, causing acceleration with diminished force of contraction. In mammals the acceleration is prevented for a time by the vagus stimulation, and the heart is actually slowed, but in reality only a therapeutic dose has been absorbed in the early stage of the action; this stimulation rapidly gives place to depression and then to paralysis of the center, the acceleration becoming marked and being soon followed by great irregularity. Delirium cordis occurs before the heart stops in diastole.

Paralysis of the respiratory center is usually the immediate cause of death, hence atropin is capable of saving a certain percentage of animals experimentally poisoned with a barely fatal dose of aconite. If an excessive dose has been taken even artificial respiration will prolong life only for a short time as the heart soon becomes paralyzed after the phenomena enumerated above.

Despite the fact that it was well known and long in use as a familiar poison, particularly for wild animals, aconite is a comparatively recent addition to our materia medica, having been introduced by an Austrian physician, Störck, about 1762.

The official preparations of aconite are as follows:

Aconitum.—U. S.—This is the dried tuberous root of *Aconitum napellus*, collected in autumn. When assayed by the process given in the Pharmacopeia it yields not less than 0.5 per cent. of aconitin.

Average dose: 0.05 gm. (1 grain).

Fluidextractum Aconiti.—U. S.—This is made with a mixture of 75 parts of alcohol and 25 parts of water and should contain 0.4 per cent. of aconitin.

Average dose: 0.05 c.c. (1 minim.)

Tinctura Aconiti.—U. S.—This preparation has been materially reduced in strength and now represents 10 per cent. of the crude drug, or approximately one-third of the strength of the tincture that was official in the Pharmacopeia for 1890.

It may be added that the change was made in conformity with the recommendations of the international conference for the unification of formulæ of potent medicaments and that, in addition to being in harmony with this international standard it will be found to be more uniformly active than the stronger but more variable tincture official in the earlier pharmacopeias.

Average dose: 0.6 c.c. (10 minims).

Aconitina.—U. S.—This is an alkaloid obtained from aconite. It is the most active and most potent substance in the Pharmacopeia. The aconitin now official is the crystalline alkaloid and should not be confounded with the amorphous substance formerly official or the comparatively weak eclectic preparation of aconite.

Average dose: 0.00015 gm. (0.15 mg. 1/400 grain).

Aconite finds its greatest usefulness in cases of high blood pressure with a strong, rapid heart, particularly in fever in robust patients. It then simply slows the heart, lessening its output and causing a fall in temperature and in arterial tension.

Fever alone is not an indication in every case for the use of aconite. In continued fevers and in any case in which the heart is feeble or the arterial tension low from any cause (even though the pulse may be rapid), aconite is contraindicated.

Since the antipyretic benzene derivatives have come into general use the employment of aconite in fever has correspondingly declined, but we have seen that the synthetic antipyretics are far from being the harmless substances that the manufacturers would have us believe, and aconite deserves to be used more frequently in suitable cases of fever.

"Colds" are troublesome forms of congestion resulting from circulatory disturbances which are often relieved by repeated small doses of aconite. For this purpose 3 drops (about 1 minim) of the tincture of aconite of the present Pharmacopeia, which would be equivalent to about 1 drop (1/3 minim) of the tincture official in the Pharmacopeia, 1890, well diluted with water, may be given every fifteen minutes for two hours, then hourly until relief is obtained.

Aconitin is so intensely irritant that it is not suitable for use without great dilution, and as there is some chance of confusing the much more potent article now official with the eclectic or the amorphous preparations, it will be found preferable to use the tincture of aconite in nearly every case, more particularly since this is now required to be of a definite aconitin strength. Because of its irritant action aconitin is not adapted for hypodermic use, but it may be given, largely diluted with water, as follows:

R.	Aconitin (crystalline)	gr. 1/12	(005
	Alcoholis	ʒiv	15|
	Aquæ q. s. ad	ʒiv	120|

Sig.: A teaspoonful may be taken every three hours.

The disadvantage, not to say danger, of trying to weigh such small amounts is apparent, and serves to illustrate the advantage of using the tincture.

The tincture is usually given alone, except for the water used in diluting it.

Veratrum.

Veratrum rather closely resembles aconite in its therapeutic action, and it was widely used at one time for the reduction of fever. The extent of its use was largely due to its popularization in the form of Norwood's Tincture of Veratrum, but it seems to possess no advantage over aconite, and it is now but seldom used internally. The official preparations are:

Veratrum.—U. S. (Veratrum Viride.—U. S. P., 1890).—Under the single heading veratrum the Pharmacopeia now recognizes the dried rhizome of *Veratrum viride* or of *Veratrum album*. While it is true that there is no marked difference between the two drugs some physicians prefer the American root and therefore should specify "Veratrum viride, U. S. P., 1890."

Average dose: 0.12 gm. (2 grains).

Fluidextractum Veratri.—U. S.—This is directed to be made with alcohol.

Average dose: 0.1 c.c. (1½ minims).

Tinctura Veratri.—U. S.—This preparation represents 10 per cent. of the crude drug in alcohol and is practically one-fourth the strength of the corresponding preparation in the Pharmacopeia for 1890.

Average dose: 1.0 c.c. (15 minims).

Veratrina.—U. S.—This is a mixture of alkaloids obtained from the seeds of *Asagræa officinalis*. Veratrin should not be confounded with the eclectic preparation of the same name.

Average dose: 0.002 gm. (1/30 grain).

The Nitrites.

The nitrites, organic as well as inorganic, lower the blood pressure by causing vasodilation. Therapeutic doses exert but little influence directly on the heart. It has been shown that the nitrites act on the muscles and nerve endings of the arterioles, and that even the veins undergo dilatation.

Any considerable dilatation of the arterioles and veins of the splanchnic area must inevitably lead to a decline in the general arterial pressure, regardless of the action on the heart. In man the heart actually does show acceleration in the first stage of the action with amyl nitrite because of the depression of the vagus center; the blood pressure remains high and the vasodilation affects the face and neck, because of depression of the vasoconstrictor centers for those areas; but as the dilatation extends to the splanchnic and other areas the general arterial pressure falls.

There has been some diversity of opinion in regard to the effect of amyl nitrite on the cerebral circulation. Leonard Hill agrees with those who believe that there are no nerves controlling the diameter of the cerebral arteries, and he declares that the arterial pressure in the brain simply follows that in the carotids. Wiggers has found that adrenalin constricts the cerebral vessels and we have Elliott's dictum, based on his masterly research, that the constrictor effect of adrenalin on vessels is proof of sympathetic nervous control. Brodie and Dixon also found that the action of adrenalin is exerted on nervous elements. Should Wigger's results be confirmed there would be little reason to doubt that the nitrites do effect the caliber of the cerebral vessels.

The nitrites are capable of causing some dilatation of the vessels in excised muscles when the nerve endings are not concerned; hence they must also act on the muscular elements of the vessels to some extent.

The nitrites produce methemoglobin in the blood, but do not cause the destruction of the corpuscles, as other methemoglobin formers do, and in man this does not arrest oxidation completely, because the tissues reduce methemoglobin slowly. This is not an important factor, however, with the therapeutic doses of the nitrites.

O. Loeb suggested as a possible explanation of the value of amyl nitrite in angina pectoris that the coronary vessels, like those of the face and brain, may be dilated at first, before the action on the general circulation begins. Filehne showed that the therapeutic dose of amyl nitrite caused vasodilatation by central action, and Loeb found it did not affect the vessel tonus independently except when in such concentration as to prove poisonous. Small doses were found to have no constant effect on the vessels of the coronary circulation in the excised heart. Amyl nitrite acts very rapidly when inhaled, but the action is over in about twenty minutes.

The effects of glyceryl trinitrate or nitroglycerin are much more slowly induced and they persist for some hours. Sodium nitrite is decomposed by the hydrochloric acid of the gastric juice thus giving rise to irritation of the stomach. Glyceryl trinitrate is not decomposed in the stomach, but it has the disadvantage of often causing headache. In some cases this action does not occur after the drug has been used for some time. Glyceryl trinitrate is decomposed in the blood, with the liberation of the nitrous acid radicle, hence it acts like the nitrites.

Spiritus Glycerylis Nitratis.—U. S. (Spiritus Glonoini—U. S. P., 1890)—Commonly, though incorrectly, termed nitroglycerin, is an alcoholic solution containing 1 per cent. by weight of glyceryl trinitrate.

Average dose: 0.05 c.c. (1 minim).

Amylis Nitris.—U. S.—This is a liquid containing about 80 per cent. of amyl nitrite.

Average dose: 0.2 c.c. (3 minims).

Sodii Nitris.—U. S.—This usually occurs in white, or nearly white, fused masses, soluble in less than two parts of water. The salt deliquesces on exposure to air and is also gradually oxidized to sodium nitrate and thus becomes unfit for use.

Average dose: 0.06 gm. (1 grain).

The nitrites, including glyceryl trinitrate, are of prime importance in the depression of the circulation and may be used, when it is deemed necessary, to lower the blood pressure, for example, when a weakened heart is becoming exhausted by contracting against a great arterial resistance, and the contractions are incomplete, as in arteriosclerosis. A slight lowering of the aortic resistance often enables the heart to contract more perfectly while a coronary vasodilation secures a better nutrition of the heart.

This group is contraindicated, however, when the blood pressure is already low (however weak and rapid the heart may be), because a certain degree of arterial tension is absolutely essential for maintaining the coronary and medullary circulations.

Amyl nitrite is to be preferred when a speedy action is desired, as in acute attacks of angina pectoris. When the constriction of the vessels is of spasmodic origin the nitrites usually give relief, but in the latter stages of arteriosclerosis, when most of the muscular tissue has been replaced by fibrous, thus narrowing the lumen of the vessels, it is obvious that such vessels cannot be caused to dilate by any means.

It must not be forgotten that while relief is often obtained in the acute attacks of the early stages of angina pectoris, the nitrites are merely palliative and in no sense curative. The nitrites, and more particularly amyl nitrite, are indicated in vasomotor spasm occurring in any disease, unless specifically contraindicated by other conditions.

The action of amyl nitrite is very speedily elicited when it is inhaled, but when spasm of the respiratory muscles interferes with the inhalation it may be injected into the deep muscles of the thigh.

Spirit of glyceryl trinitrate is to be preferred in chronic conditions of abnormally high blood pressure, because of its more protracted action. One minim is given three times a day, or the dose is increased till effective. It may be injected hypodermically or given by the stomach, as it passes through that organ unchanged, and, therefore, causes no such disturbances as are seen with sodium nitrite.

While this substance is usually considered as being extremely poisonous it is said that more than 12 c.c. (3 fluidrams) have been given in the course of a day with no bad effects. Aqueous solutions of glyceryl trinitrate are unstable and are frequently quite worthless. The spirit sometimes gives almost immediate relief in headache, when this is attended with high blood pressure, but, on the other hand, it may increase the headache if the blood pressure is low. As is well known, the headache which glyceryl trinitrate commonly causes is one of the greatest objections to its use.

The nitrites, and particularly the spirit of glyceryl trinitrate, may be used to counteract the vasoconstrictor effect of digitalis or strychnin when that action is undesired.

Because of its ready decomposition spirit of nitrous ether does not yield enough of the nitrous acid radicle to exert any therapeutic action on the circulation. The action of the spirit is exerted reflexly as in the case of alcohol and ether.

The spirit of nitroglycerin may be given in simple solution in order to avoid the measuring of such small doses as one minim. It may be prescribed as follows:

℞ Spiritus nitroglycerini.....m. xv 1|
Aquæ .....ʒii 60|

The dose of the solution is a teaspoonful. Large amounts should not be prescribed or dispensed.

The following illustrates the method of prescribing sodium nitrite:

℞ Sodii nitritis.....gr. xv 1|
Aquæ (recently boiled).....ʒii 60|

This solution should be kept well corked. The dose is one teaspoonful.

The well-known "pearls" of amyl nitrite afford the most convenient form for dispensing that substance; they must be kept cool to avoid loss by breakage, and when used one is crushed in a handkerchief and the contents inhaled by the patient at once.

Bloodletting was formerly in vogue as a routine procedure when it was desired to reduce the blood pressure, but in healthy animals the vasomotor center exercises such perfect control over the blood pressure that the loss of blood produces very little lasting effect unless it is so great as to cause collapse symptoms. While the loss of a moderate amount of blood is well borne by robust patients, and in some cases may even prove beneficial, aconite and the nitrites are nearly always to be preferred as temporary measures, while the control of the diet (including liquids) and the use of saline purgatives will serve to diminish the amount of blood for a longer time in suitable cases.

Chloral hydrate is one of the most effective agents in our possession for lowering the blood pressure by depressing the vasomotor centers and while this action is much employed in laboratory experiments, it is not elicited in man by perfectly safe doses such as are used to induce sleep.

Clinical Notes, New Instruments, Etc.

A PECULIAR INFECTION OF CERTAIN CERVICAL GLANDS WITH TYPICAL LOCAL AND GENERAL SYMPTOMS.

HELIODOR SCHILLER, M.D.

CHICAGO.

Under the title of "Pfeiffer's Glandular Fever" I recently published reports of five cases and I have since had an opportunity of seeing six similar cases.[1]

A close study of these cases and comparison with those already reported, shows that they do not correspond exactly with the cases described by Pfeiffer, but that they have distinctive features which may be considered as those of a well characterized and typical disease.

CASE 6.—On October 24 I was called to see a baby boy, aged 2½ years. Since the previous evening the child had had fever, had coughed somewhat and had vomited once.

Course of the Disease.—When I first saw the child his temperature was 102 F., his throat was reddened and several râles could be heard over the lungs. He was constipated, and for this calomel was given. Next morning the temperature was 99.8, and the following day 103. The redness in the throat had disappeared entirely on the fourth day and the temperature was 101, with no other symptoms. On the fifth day the glands on the left side of his neck, especially those before and behind the proximal end of the sternocleidomastoid, were very much swollen. The swelling came on rather suddenly; on the previous day there was no trace of it, and it consisted of three enlarged glands, each larger than a hazelnut, and of the consistency of hard rubber. Each swollen gland was distinctly palpable. The skin over the glands was normal, the glands were hardly tender, and somewhat painful only on hard pressure.

Cultures taken from the throat and from the seropurulent discharge from the nose on the second day showed streptococci and staphylococci. Throughout the disease the temperature ranged from 101 to 104.5. There was no exanthema on the skin or scalp, and nothing abnormal in the ears.

On the tenth day the glands on the right side of the neck were found to be swollen and showed the same characteristics as the glands on the other side. This swelling was followed by higher fever and vomiting. Adenoid vegetations in the throat were present in a slight degree. Constipation was obstinate and the child lacked appetite.

On the eleventh day the baby complained of pain in the ear, but nothing pathologic could be seen there. The liver and spleen were both found enlarged, and the mother noticed that the urine, which on the eighth day was normal, was lessened in quantity on the twelfth day. It was found to contain albumin and some white and red blood cells. On the sixteenth day there were traces of albumin only.

The fever continued for three weeks and a half, reaching as high as 104.6 degrees, but in spite of this the baby did not look very emaciated. The glands swelled more; I had the impression that they were smaller on some days, but the day following they would seem as large as before. The fever disappeared gradually and at the end of the fourth week it was gone. The glands became gradually smaller. When the temperature became normal the appetite came back, the baby recuperated quickly, and by December 15 the glands were reduced to the size of a small pea. Dr. Abt saw this case with me.

SUMMARY OF CASE 6.

At no time was any fluctuation felt; the glands were always movable, there was no periadenitis. The teeth were normal and there is no history of tuberculosis in the family. There was no sign of scrofulosis nor was there any symptom which would alow me to consider the case as an acute tuberculous infection of the glands. It is known that in cases of acute infection of glands with tubercle bacilli, with the formation of a large amount of epithelial cells, and consequent infiltration with round cells, the glands may swell in a comparatively short time, considering the chronic character of the tuberculous disease. These glands may swell to double their size inside of a week or ten days, but never over night; besides, the more acute tuberculous infections of the glands are invariably followed by caseous degeneration, and then by suppuration, whereas in the case just referred to absorption took place.

The so-called hypertrophic form of tuberculous glands most often disappears by conservative treatment, but it comes on very slowly and its course is contrary to the one here described. It is afebril, and other symptoms tending to tuberculosis will not be missing. In this case there was sudden onset of fever, weak feeling, headache, backache, and then the sudden and large swelling of the cervical glands, which are not painful, but only slightly tender, and hard in their consistency, swelling of the spleen and of the liver, nephritis, constipation, mouth-breathing, decline of the fever by lysis, slow absorption of the inflamed glands and slow disappearance.

We can not very well call this a case of common tonsillitis, because the pathologic changes which the tonsils and the throat showed, were very little. The sympathetic swelling of the glands in a case of tonsillitis is different, the glands are painful and disappear with the disappearance of the process in the throat or suppurate. Also the affection of the kidneys, spleen, and liver, in so marked a degree, and the long lasting fever are certainly not the symptoms of tonsillitis.

CASE 7.—A woman, aged 34, called on me September 14. She said that on September 9 she felt ill, had a headache, pain in the back, was very weak, and that toward evening she noticed a swelling of the glands on the left side of her neck. She believed that this swelling, which was not painful at all, came from her teeth, but her dentist failed to find any reason for trouble from that source. A physician who paid a friendly visit prescribed a liniment, which was used without result, and the swelling grew constantly, but did not cause any trouble. At no time was there any pain in swallowing, or very much pain in the swollen glands, except in quick movements of the head.

Examination.—When I saw the patient the temperature was 100, pulse 88. On the left side of the neck there was a glandular tumor the size of a child's fist, composed of two distinctly separated glands before and below the proximal part of the sternocleidomastoid. This swelling was hard and elastic and not very tender. The heart and lungs were normal; the liver was somewhat enlarged. The tonsils were enlarged with deep but empty crypts. The palate and pharynx were reddened,

1. The Journal, A. M. A., Aug. 5, 1905, p. 401. The cases reported in this article are numbered consecutively following those reported in the previous article.

there was no skin affection, the ears were normal, urine was normal, and the patient complained of weakness and nausea.

Course of the Disease.—On September 16 the temperature went to 103, and on September 17 to 103.5. The glands were still hard but movable; there was no fluctuation and no marked periadenitis. On September 18 I made a trial puncture and at the depth of more than an inch I found a thick yellow pus, which I removed by incision. That evening the temperature went to 104.4, and then gradually subsided and was normal on September 21. On September 26 the incision was healed, but the glands were still enlarged, though very much reduced in size; the patient felt fine and began to gain.

On the evening of September 26 I was called to her, and, to my surprise, I found the glands just behind the sternocleidomastoid in its upper part swollen, and one gland in the middle of the neck also swollen to about the size of a nut, hard and not very tender. The whole thing came on in a few hours; the temperature rose to 100.6 and the pulse to 96. There was no pain except in moving the head; the throat was normal, but a general weakness was felt.

On September 27 the condition was the same, the highest temperature was 101, and the urine contained traces of albumin. The fever increased and the swelling of the glands was the same.

On September 30 I again made a trial puncture, and found one-third of a Pravatsche syringeful of pus in the gland behind the sternocleidomastoid. I made an incision along the needle, but found no more pus.

The temperature gradually subsided and on October 6 it was normal once more, but the swelling did not decrease in size, though there was no fluctuation. Trial punctures revealed no pus. On October 26 I advised *x*-ray treatments, and after ten treatments with medium hard tubes at 10-inch distance and ten minutes' exposure by Dr. Reichman all the glands disappeared. In the pus of the glands typical influenza bacilli and streptococci were found. The blood examination showed leucocytosis 13,000.

SUMMARY OF CASE 7.

The objection could be raised that the process was nothing but a common tonsillitis. Not all cases of tonsillitis are followed by pain in the throat, the affection in the throat or tonsils is accompanied by large yellow plaques, is very often found there by change, and patients do not always complain of pain there. The changes in the tonsils could have disappeared quickly, but the whole course of this disease is not at all similar to any of the hundred varieties of tonsillitis; the sudden swelling of the glands, their consistency, the slight tenderness, the increase in size after the supposed process in the throat disappeared, the finding of influenza bacilli in the pus, and the lengthy duration of the process are enough to show that we have to deal with a well characterized, distinct disease.

CASE 8.—A girl, aged 2½ years, the daughter of the patient in Case 7, five days after an attack of rhinitis and pharyngitis, which lasted two days, complained of pain in her ears and neck, and vomited once or twice.

Examination.—The tonsils were red and somewhat swollen. There was a seropurulent discharge from the nose; the ear drums were somewhat retracted; the lungs and heart were normal. The child was healthy looking and seemed to be a well nourished, strong baby. In the discharge from the nose staphylococci and large diplococci were found, but no diphtheria bacilli were demonstrated in the specimen taken from the throat.

Course of the Disease.—The next morning the glands on the left side of the neck, on both sides of the upper end of the sternocleidomastoid were swollen to the size of a hazelnut, being hard, not very tender and movable. The child was constipated, breathed through her mouth and was very cross. The redness in the throat disappeared in two days, but there was no change in the course of the disease.

On October 13 a thick pus was removed by an incision from one of the glands, and in the pus were streptococci only. The other glands, which did not suppurate, remained about the same.

By October 20 the incision was healed. Then rather suddenly, without any symptoms other than temperature of 101, the symmetrical glands on the right side began to swell, traces of albumin were found in the urine, and the temperature kept rising until October 30, when the spleen and liver were distinctly enlarged. The glands on the right side were easily movable, hard, elastic, with the skin above them perfectly normal, and they remained about the same.

After the disappearance of the fever the child improved quickly, the glands became smaller and in the beginning of December they were reduced to the size of small peas.

CASE 9.—The servant in the family had a very similar but much milder affection.

CASE 10.—This was a case belonging undoubtedly to this species, but was very mild, though showing all the symptoms.

CASE 11.—This patient, a boy, 7 years old, had had a cold for several days, and suddenly, on the evening of November 8, it became worse. He had headache, felt weak and complained of pains, especially in the abdomen, but also to some extent all over.

Course of the Disease.—Temperature was 100.8, pulse 102. His throat was red, and the next morning the glands on both sides of the neck were swollen, but the right side was the worse. Except for a slight fever and the swelling of the glands, no other symptoms were present, the throat being normal and the highest temperature 100.8. The boy felt well, had a good appetite and did not want to stay indoors. After the fever disappeared the glands became somewhat smaller. There was no exanthema, no peeling of the skin.

On November 24 the boy did not act normally, and the mother observed that there was blood in the urine. A specimen showed all the signs of an acute hemorrhagic nephritis. During the next twenty-four hours 11 ounces of bloody, dirty-looking urine were passed, and the next day 15 ounces. In spite of this the boy felt well and did not believe that he was sick. His temperature was 100; the spleen and liver were enlarged.

On November 26 the urine, 56 ounces, contained albumin, granulated and epithelial casts and cubic fatty degenerated epitheliums.

On November 30 the urine contained traces of albumin, only at this time also the glands were very much reduced in size, and the latter part of December had nearly disappeared.

SUMMARY OF CASE 11.

In this case there was not one symptom of common tonsillitis. Of more importance in this as well as in the case of the little girl is the "cold," which may have been the source of the infection of the glands. The patients hardly felt sick, the only symptom in the beginning of Case 11 was the swelling of the glands and a slight fever, scarlatina could be excluded.

SUMMARY OF ALL CASES.

I have observed eleven cases of a well-characterized disease. The most striking and characteristic symptom of which is the sudden swelling of certain glands of the neck. In Case 1 the swelling of the glands was noticed the evening before any pain in the throat started. The enlarged glands in Case 2 were observed by the mother before the boy complained of any pain in the throat or neck, and in Case 3 immediately after the first chills the glands were observed to be swollen.

In Case 6 the swelling appeared on the fifth day, while in Case 7 the swelling of the glands was observed on the evening of the day when the patient first felt sick; the second swelling of the glands came as a surprise to both patient and doctor, and was the first symptom of the relapse.

In Case 8 the swelling occurred on the second or the

fifth day, respectively. In Case 11 the glands swelled the second or the fifth day—according to whether we count the "cold" in the disease or not. In neither of these cases was the swelling of these glands accompanied by any severe pains. The glands were not tender, but were hard, they showed no marked periadenitis and what must be considered as especially characteristic, the swelling concerned most often the glands anterior and posterior to, and behind the upper end of the sternocleidomastoid only. This rule had only one exception. In Case 7 the disease opened with chills, headache, pains in the abdomen, back, and sometimes vomiting. Complaints of some pain in the throat were present in all cases. In no case were the pains so severe as in a case of real tonsillitis.

The affection of the kidneys in this disease is rather striking. Among eleven cases three patients had acute hemorrhagic nephritis. The nephritis began in one case on the fifth day, in another on the seventh, and in the third on the eleventh day after all symptoms had disappeared and the glands had begun to get smaller. There is no other disease, except perhaps scarlatina, known in the course of which the kidneys become as severely involved as in this disease. Case 7 the patient had, besides small quantities of albumin, white and red blood cells and cubical epithelium in the urine. Traces of albumin were found in nearly all cases, even when the fever was low. The spleen and liver were somewhat enlarged in all cases, the spleen so much so that it was easily palpable, and the liver one inch below the ribs. Pain in the abdomen was a frequent complaint, and constipation a regular one. Adenoid vegetations were found in five of the cases. Characteristic for all cases was the lengthy duration of the swelling and the slow absorption. In three of the cases suppuration of the glands occurred. All cases were accompanied by fever, but in one case only did this reach as high as 105 degrees, while in the other cases it ranged between 100 and 104. It was a continual fever and disappeared by lysis.

The bacteriologic examination of the pus of three cases showed as follows: In one pure cultures of influenza bacilli, in the second influenza bacilli and streptococci, while in the last streptococci only were found. In Case 1 streptococci were found in the throat; in Case 3 influenza bacilli, diplococci and staphylococci; in Case 8 staphylococci and large diplococci; in Case 6 streptococci and diplococci.

The diseases had all the characteristics of an infectious disease, Cases 7, 8 and 9 would even justify one in calling the disease contagious. The prognosis is good in all cases. In Case 2 only, I felt uneasy for several days.

92 State Street.

A SIMPLIFIED HEAT METHOD OF STERILIZING AND STORING CATGUT.

WILLARD BARTLETT, A.M., M.D.

ST. LOUIS, MO.

So many prominent surgeons have adopted my suggestions for the preparation of catgut[1] that I wish to describe methods which make the procedure vastly simpler in its application, and which at the same time remove any element of uncertainty regarding the results likely to be attained.

Catgut prepared according to this formula has been used by the Mayo brothers in almost 5,000 operations and has been adopted by such well-known surgeons as Drs. Burrell, Collins, Cushing, Deaver, Finney, Frazier, Meyer and Murphy, as well as the men on the staff of the Massachusetts General Hospital and on that of the Pennsylvania Hospital and many others. This is a sufficient testimonial to the worth of the procedure, and I am more than certain that the present modification of it here described can not fail to attract new users.

As at present recommended very little time or trouble need be expended in carrying out the preparation of catgut. The materials used are exceedingly cheap, while the requisite apparatus, as shown in the accompanying illustration, is very crude and can be found in any hospital or in any physician's office.

The process can be divided into three steps: (1) The physical preparation of the material, (2) its sterilization, (3) its storage.

1. The ordinary commercial ten-foot catgut strand is divided into four equal lengths, each of which is made into a little coil about one and one-half inches in diameter. By twisting the last free end about four times around this little coil the latter will maintain its shape. These coils in any desired number (I usually take about 120 of them at a time) are strung on a thread like beads on a string in order that the whole number may be handled at once. This string of coils is hung in a metal can, better still in a beaker glass, but is not allowed to touch

the bottom or sides. I suspend them by carrying the two ends of thread through a small opening in a pasteboard cover, which is placed on the receptacle. The same opening serves to admit a thermometer, which is carried down to exactly the point where its mercury bulb is on a level with the topmost coils. Liquid petrolatum is now poured in, the quantity being sufficient to immerse the catgut and the bulb of the thermometer.

2. The vessel is set on a pan of sand, under which is placed a tiny gas flame or merely sufficient intensity to raise the temperature of the oil to 212 F. within from one to two hours. A little practice enables one to guess the size of flame necessary for this purpose. This is best done in the evening, and the temperature allowed to remain at about 212 F. (a few degrees variation does not matter) until morning. The heat is then increased to such an extent that the temperature will run up to 300 F. in an hour; the gas is then turned off and the temperature of the oil allowed to return to about 212 degrees.

3. The pasteboard cover, together with the string of catgut coils, is lifted off, the superfluous oil is allowed to drop off, and then the thread is cut, allowing the coils to drop into the following mixture:

Columbian spirits	100 parts
Iodin flakes	1 part

1 "A Simple Heat Method of Sterilizing and Storing Catgut—Preliminary Report." Interstate Med. Jour.

The catgut is now ready for immediate use and will keep without deteriorating for any length of time. The jar may be opened any number of times, so long as a sterile instrument is used for removing the coils, since the iodin protects the coils that are left behind from accidental contamination.

The physical qualities of catgut so prepared will astonish the surgeon who uses it for the first time. I am very certain that a blind man used to handling catgut prepared by other methods would not recognize this product if it were placed in his hands. It is as supple as silk, highly elastic and almost as strong as the raw material. It is easily seen on account of its color, will not untwist when it gets wet on account of the oil remaining in it, and for the same reason is more than usually resistant to absorption. That the strands are sterile as well as antiseptic goes without saying.

A SIMPLE DEVICE FOR IRRIGATION OF THE BLADDER.

HUGO EHRENFEST, M.D.

Assistant Professor of Obstetrics, St. Louis University.

ST. LOUIS, MO.

The inadequacy of a piston syringe for irrigation of the bladder is a generally appreciated fact. A few of the numerous models of bladder syringes will stand boiling, but they are all rather expensive and easily get out of order. So long as the piston fits tightly, the fluid unavoidably is injected in jerks and not in a continuous stream. In spite of these obvious disadvantages of the piston syringes they are recommended by the majority of text-book writers, because they permit an exact estimation of the amount of fluid injected into the bladder—a point of considerable practical importance. In actual practice, the piston syringe is frequently supplanted by the glass irrigator or the rubber fountain syringe. The glass irrigator, while it permits an exact mensuration of the injected fluid, is not easily sterilized. The fountain syringe can be boiled, but precludes the determination of the amount of fluid which passes into the bladder. For this reason the rubber fountain syringe may prove a dangerous instrument in the hands of the inexperienced. The Pollitzer bag, which is used by some physicians, seems preferable; it can be boiled, at least a few times, and allows a rough estimation of the quantity of fluid injected.

It must be admitted, therefore, that an improvement of our present appliances for bladder irrigation seems desirable.

I present here the description of a simple apparatus, which I constructed some time ago, and which in my hands has proved extremely satisfactory. The principle of the device can be briefly outlined as follows: By means of air pressure fluid is forced out of a bottle, exactly as in Fowler's bottle used for hypodermoclysis. The fluid is conveyed through a rubber tube to the bladder. By the interpolation of a three-way stop-cock the solution can be alternately injected into and removed from the bladder by a corresponding turning of the handle of the stop-cock.

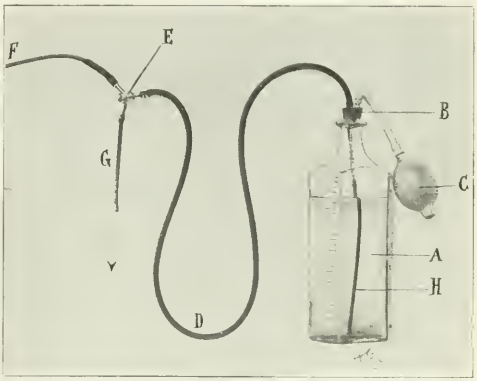
DETAILS OF CONSTRUCTION.

In the accompanying illustration the bottle A is a common one-quart medicine bottle such as can be bought in almost any drug store. These bottles, as a rule, carry a double graduation, on one side in ounces, on the other in cubic centimeters. The bottle is closed with the rubber stopper B. This stopper is perforated by two bores into which are screwed pointed metal tips for the attachment of rubber tubes. To the one tip is connected the air bulb C. The other bore connects on its under end with a rubber tube H reaching to the bottom of the bottle. The rubber tube D connects the bottle with the stop-cock E. This is a three-way metal cock which, I believe, can be bought in any instrument store. To this is attached a No. 10 or 11 Nélaton catheter F. The handling of the stop-cock is facilitated by a shortening of the catheter. Especially in gynecologic work, a catheter of about 7 inches is long enough. To the third tip of the stop-cock is joined a rubber tube G, which leads to the waste jar.

METHOD OF USE.

The apparatus is used in the following manner: The air bulb is detached and the rest boiled; it seems unnecessary to sterilize the bottle every time it is used. Of course, this bottle contains only sterile, as a rule antiseptic, solution. The bottle can be kept sterile and ready for use, if immediately after its use the rubber stopper, together with all the rubber tubing atached to it, is removed, and the bottle closed with another rubber stopper which has been boiled with the tubing.

Into the bottle is poured the fluid to be employed for irrigation. This solution can be kept in stock in a higher concentration, and with the help of the graduation of the bottle may be diluted to the desired concentration by the addition of sterile water. The stopper B is fitted tightly and the air bulb C attached to the corresponding tip. The stop-cock is turned so that it connects tube D with catheter F. Air is pumped into the bottle until the fluid escapes from the eye of the catheter. In this way the whole system is freed of air. If the apparatus is used preceding a cystoscopic examination, the stop-cock is set to connect tube D with G. The air is thus removed only from tube D, while the air within the catheter is permitted to pass into the bladder, where it forms the bubble which, during the cystoscopic examination, marks the vertex of the bladder.



The stop-cock is set into a middle position, which shuts off all three ways, while the catheter is introduced into the bladder. By turning the handle of the stop-cock with the thumb of that hand which holds the catheter between the first and second finger, the catheter is placed into communication with the waste tube G and the urine drawn from the bladder. The handle is then turned 90 degrees upward and tube D will be connected with the catheter. The other hand (usually the right one), now grasps the air bulb and slowly pumps air into the bottle. The escape of the fluid, both its celerity and quantity, are exactly observed on the graduation of the bottle. It may be mentioned in this connection that in this manner the capacity of the bladder can be ascertained in a most convenient way. If enough fluid is injected into the bladder the stop-cock is turned another 90 degrees with the thumb of the left hand, and the solution escapes from the bladder into the waste jar. This procedure can be repeated *ad libitum*.

I have given the description of the construction and technic of this little device for irrigation of the bladder in this detailed form, in order to prove that this apparatus can be reliably sterilized, is not likely to get out of order, permits the aspetic irrigation of the bladder under exact control of the flow, and can be used without the help of an assistant, practically without any preparations. It is obvious that the apparatus is cheap and can be put together by every physician. In an up-to-date office building, in which every room is supplied with compressed air, an appropriate hose attachment such as that commonly used by laryngologists for sprays can be connected directly with the bottle.

Of late convincing proof has been furnished that the cystitis subsequent to catheterization can most effectively be prevented (as first demonstrated by Baisch) if the bladder is irrigated with an antiseptic solution after every catheterization. The appliance described here is extremely suitable for such a routine combination of catheterization with bladder irrigation.

PYONEPHROSIS.

REPORT OF A CASE IN A NURSING CHILD OF SIX MONTHS. OPERATION, RECOVERY.*

CHARLES P. STACKHOUSE, M. D.
WILKESBARRE, PA.

History.—Charles S. was born Sept. 8, 1904, was entirely breast fed and was a typical healthy babe. As far as can be ascertained, no solid food had entered his stomach until the morning of the attack, when he was given a small piece of cracker. The bowels were regular and there was free excretion of apparently healthy urine.

On Monday morning, March 6, 1905, about 10 o'clock, he began to cry loudly, as if in intense pain. A laxative and some colic cure were at once administered, and after a couple of hours he was cooing as if nothing unusual had occurred. In the afternoon he was somewhat restless, and all night he was feverish. A laxative and a dose of niter were administered and a moderate response was obtained, with little or no diminution of restlessness.

Examination.—I saw him on the afternoon of the second day and found him very restless. His hands were in constant motion from the wrist, there was a continual closing and opening of the fists, some tossing of the head from side to side, and a slight grunt accompanied each expiration—all indicating severe pain.

The lungs were normal, the pulse was 130 and of good quality, and the temperature 102.6.

The abdomen was distended and tympanitic above the umbilicus, with considerable resistance and tenderness in the right hypochondriac and lumbar regions, while below the umbilicus there was little or no distention, resistance or tenderness, permitting careful examination of the lower abdomen without discomfort.

An enema of olive oil was immediately followed by a very free, normal bowel movement, and fractional doses of calomel given during the night gave free action of the bowels and kidneys, which resulted in a marked improvement in all his symptoms, although the temperature was still 101.4 and pulse 130.

On the fourth day his temperature and pulse became normal and apparently he had returned to his usual healthy condition.

Second Attack.—One week from the onset of this attack occurred a second, which differed somewhat from the first. After a few hours of restlessness and evident distress he began to retract the head and body, roll the eyes back, and appeared to be going into convulsions. There was the same pinched, anxious expression on the face, and each expiration was accompanied by a pathetic moaning cry. Examination found no trouble in the lungs; pulse was 130 and of good volume and temperature 103. There was now no distension or tenderness in the right hypochondriac region as in the first attack, while in the right iliac region the muscles were rigid and exquisitely tender, the slightest touch eliciting cries of pain. The same peculiar action of the wrists and hands was present at this time and continued until the operation.

After a very restless night the disturbance in the appendiceal region seemed accentuated, and there was added to the symptoms already described flexion of both thighs on the abdomen. At this time it was first noticed that he would cry just before micturating and that the urine had a strong odor and left a dark stain.

Wednesday, the third day of the second attack, he was decidedly weaker and the temperature was higher, while the pulse still remained 130 and of good volume. The facial expression was one of general misery. He had passed a very restless night, apparently in constant pain. Believing pus to be present, I asked for a consultation and Dr. Wolfe saw him with me, but as no mass was outlined it was decided to tarry a day or two, seeking, if possible, to avoid subjecting the little fellow to so dangerous an operation.

On Thursday he was restless and weaker, the temperature was higher, going to 104.2 toward night. There was extreme pain in the hypogastric and lumbar regions.

On Friday his condition was one of extreme prostration; the abdomen was distended and tender, the face was anxious and pinched, both legs were flexed, temperature was 103.4 and pulse 150. Dr. Wolfe was again summoned and the patient was examined under chloroform, when it was thought a small mass could be felt in the right iliac region.

Operation.—The condition was considered so urgent that operation was performed the same afternoon at the Mercy Hospital, Dr. Wolfe assisting. Through a small incision over McBurney's point, an abnormally long appendix was delivered and removed, but presented only slight thickening and congestion of the mucous membrane near the base and for the last inch of the distal extremity. Feeling positive that the severe symptoms could not have been produced by an appendix so little damaged, careful examination was made and a mass found posterior to the colon, lying on the lumbar vertebræ and extending below the crest of the ileum, which proved to be the greatly distended right kidney. The incision was extended upward, a small cross incision made on the lumbar side, and the kidney, which was freely movable, was delivered out of the abdomen. It was almost the size of the acute parenchymatous kidney of an adult, irregular, almost lobulated in shape, of bluish red color and fluctuated on pressure. On puncture nearly a teacupful of thin, brownish-yellow, offensive pus was obtained.

The parenchyma was about three-fourths of an inch thick and of a dark red, congested appearance. The fluid appeared to be chiefly in the pelvis of the kidney, but extended by at least two openings, into the kidney substance. The ureter was followed with the finger to the bladder and no obstruction was discovered, but as there was no sterile instrument small enough to pass from the kidney through the ureter into the bladder, and the condition of the patient did not justify waiting for one to be prepared, the kidney was anchored to the abdominal wall and the abdomen closed, leaving free drainage into the pelvis of the kidney.

Postoperative History.—For a week following the operation the condition was precarious. There was very free drainage of urine from the wound, but we had no evidence that the ureter was patulous. On the fourth day an aqueous solution of methylene blue was injected into the pelvis of the kidney, but no trace of it was found on the diaper.

One week after the operation, March 24, the patient was anesthetized and two filiform bougies were passed through the kidney and ureter into the bladder, when there was an immediate gush of urinous fluid from the wound. The ureter was apparently occluded for at least an inch. The bougies were left in place for two days, during which time no urine was voided naturally, but both kidneys were drained through the wound. After the filiforms were removed, both kidneys were drained through the bladder and the urinous discharge gradually disappeared from the wound. There was still a slight amount of pus on the dressings and occasionally there would be some urinous discharge, but by April 10 the wound had almost entirely closed.

On April 13 the temperature and pulse increased and there seemed to be swelling and distress over the kidney, indicating a blocking up of something. On inserting a probe considerable pus oozed out and he had immediate relief, with prompt closing of the wound.

From April 20 to 25 the kidney was apparently drained entirely through the wound. On April 25 he voided from the bladder, with very highly colored urine, about an ounce of thick, creamy or caseous material, resembling thick pap, after which he voided urine normally and the wound closed at once.

The wound opened again on May 7 and drained the kidney

* Read before the Luzerne County (Pa.) Medical Society.

until May 11, when he again passed the caseous material, followed by immediate closing of the wound, which has not been open since—now over six months ago.

It was interesting to watch the return of the kidney to its normal condition. The microscopic appearance of the urine was especially interesting, as it showed the gradual opening up of the individual tubules by the presence of hyaline casts, of red blood casts and of hyaline casts stained blue by the methylene blue used in testing patulency of the ureter. These, apparently, were casts of the entire tubule, some of them extending entirely across the field of the two-thirds-inch lens. These were observed as late as six months after the operation. At present the urine contains a trace of albumin, some pus cells and a few hyaline casts.

REMARKS.

As to the etiology of this condition I have reached no conclusions. It may have been the result of a congenital hydronephrosis; it may have resulted from torsion of the ureter from floating kidney; there may have been occlusion of the ureter from uric-acid infarct, or there may have been an acute pyelitis,[1] followed by occlusion of the ureter from the resulting detritus. The child has a slight phimosis, but I hardly think that could have caused the difficulty, except that it might have been a possible cause of the pyelitis.

The treatment following the operation was largely symptomatic. For the first week he was given enemeta of salt water with stimulants. Hexamethylenamin (urotropin), potassium acetate and Basham's mixture were tried, but neither of them was as satisfactory as potassium citrate.

210 Parrish Street.

A NEEDLE HOLDER, WHICH CARRIES A CONSTANTLY THREADED NEEDLE.

SELDEN I. RAINFORTH, A.M., M.D.

NEW YORK.

The necessity of repeatedly threading the needles that are commonly used and of inserting them in holders, when many sutures have to be placed, led me to devise an instrument which I have used for over a year with great satisfaction. The needle is set at right angles to the shank of the holder, is fastened in its socket by a small thumbscrew, and need be released only when the operator desires to replace it by another needle of different size or shape. The eye is near the point of the needle. Suture material, silk or catgut, is sterilized on a bobbin made to fit into the handle of the instrument and the thread unwinds as it is used. From the bobbin the suture passes through the hollow shank of the holder to an opening near its distal end, then across to and through the eye of the needle.

Fig. 1.—A needle holder which carries a constantly threaded needle.

Fig. 2.—Needle holder opened for threading.

Sutures are placed just as ligatures are passed with an aneurism needle. The two edges of a wound are pierced successively by the needle, the end of the suture is then grasped and the needle withdrawn. If the thread is now cut near the needle a single interrupted suture has been placed, and the needle, still threaded, is ready for the insertion of another suture. Similarly, any form of interrupted suture, plain, Czerny's or Lembert's, can be very rapidly put in, and even a Halsted's quilt suture, by introducing the needle a second time through the lips of the wound before the thread is cut. A continuous suture, except a continuous quilted suture, can not be made, of course, with a fixed needle.

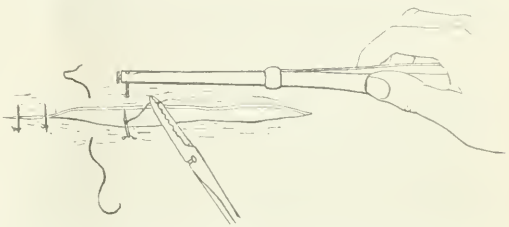


Fig. 3.—Needle passed through two edges of wound, forceps grasping the end of the suture to hold it while the needle is withdrawn.

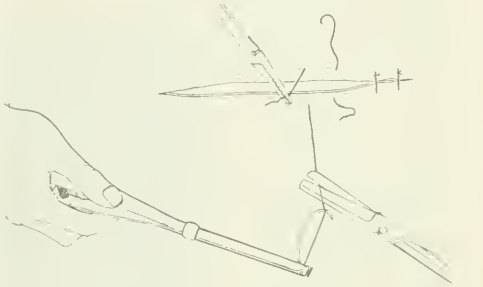


Fig. 4.—Needle withdrawn, still threaded, leaving suture in place ready to be cut off at the desired length.

An important point is the simplicity of construction of the needle holder and the ease with which it may be cleaned.

In laparotomy the proper closing of the abdominal wound in layers is tedious, but by the employment of this instrument the time required for that part of the operation is shortened at least one-half. The value of the needle holder as a time saver in perineorrhaphy, radical cure for hernia, and all operations of a similar character, needs no comment.

Broadway and Sixty-first Street.

1. Marcel Hartwig: Berliner Klin. Woch., Nov. 30, 1903.

The Record of the Schoolchild. When school opened last fall at Nice, France, a small blank book was given to each child, in which was recorded his name, age, residence, birthplace, date of vaccination, weight, height, chest measure, aptitude for games, and other particulars. Brief notes on hygiene are also contained in the little book. A corresponding card is made out for each pupil, which is kept by the medical inspector of the school on the card catalogue system. The book and card are to be brought down to date each year, and the physician can thus have an oversight of the growth and development of all the children in the school. The parents also can see from the booklet the physical progress their children are making. Morbid tendencies will be detected early, allowing a chance for correction. This combined system of cards and booklets was originated by Dr. C. Roux of Nice, and has been formally adopted by the municipal authorities.

AUTOMOBILES FOR PHYSICIANS' USE

ARE THEY PRACTICAL? ARE THEY DESIRABLE? ARE THEY ECONOMICAL? ARE THEY BETTER THAN HORSES?

THE AUTOMOBILE A GREAT ADVANTAGE TO ANY PHYSICIAN.

JOSEPH B. EARLE, M.D.
GREENVILLE, S. C.

THERE is no question about the usefulness of an automobile to a physician. It is so much quicker and can be left standing anywhere without an attendant. It can easily cover twice the ground in a day that a horse can, and in the summer, when the warm weather is hard on a horse, the auto is a great advantage, as both machine and driver are cooler when going fast.

Twice the Work of the Horse for the Same Cost.

The cost of running just about equals that of a horse and buggy ($12 to $15 a month)—and this is in favor of the machine, when everything is taken into consideration, as it will cover twice the ground and save much valuable time.

Every physician should equip his car with a good acetylene headlight for night driving. He should also have a pair of chain tire grips for muddy roads. During winter some of the roads here are at times impassable for a few days. Still, there are very few days during the winter that I can not go almost anywhere. I can always go within the city limits.

I have been using an automobile in my practice for about two years. I operate it myself and look after everything necessary to keep it in order unless I have an accident or want it overhauled—which I have done in the spring. I am using a single cylinder, 5x6 seven-horsepower runabout (103*), hung on side springs, and have a top and curtains and storm apron to protect from the rain. It cost $650 with $25 additional for rubber top.

My little car has surely done noble work, and it would be very difficult for me to keep up without it.

Fig. 1.—What one country practitioner calls the best investment he ever made.

THE AUTO AS A PHYSICIAN'S VEHICLE.

F. M. CRAIN, M.D.
REDFIELD, S. DAK.

DISCARDING the old reliable horse for the automobile requires so much expenditure of money, and involves so much uncertainty of success that many physicians are deterred from making the change. The experience of those physicians who have been pioneers in the use of the motor car, in their practice, scattered as they are throughout every state in the Union, ought to be a fairly reliable test as to the merits of the automobile as a physician's vehicle.

The testimony of those who have tried the automobile will undoubtedly differ widely. I have no doubt the difference is not in the machine, but in the men who run them. Some men are incapable of running machines of any kind, while others possess mechanical ability, either natural or acquired. To the latter class the automobile will prove reasonably satisfactory after they have studied the mechanism of their car and learned from actual experience those valuable lessons that come only from practical use and which may be learned at considerable cost and annoyance.

The Carburetor the Heart of a Gasoline Machine.

The trained ear of a physician, which quickly detects the least departure from normal heart sounds, serves him well as an automobilist. The normal sounds and pulsations of a gasoline engine are as characteristic as normal heart sounds, and when the regularity of these sounds become intermittent in character he quickly diagnoses the trouble.

An automobile is capable of doing the work of three good driving teams, and the driver can accomplish three times the amount of work, with more ease and comfort, than with horses. The auto enables the physician to spend more time in his office, that can be profitably employed in studying or recreation, the value of which can not be computed in dollars and cents. While it is a pleasure to drive a good team, their endurance is soon taxed to the limit under the pressure of long drives. Not so with the automobile. It is true that it has a limit of endurance, but so long as it is in working order and properly cared for, it is ready to do your bidding.

I have made over a hundred miles in eight hours, including eight professional calls, and the machine was capable of duplicating the trip without any extra work except replenishing the gas and oil. A machine that is capable of running continually for an indefinite period certainly commends itself to the busy physician. In country practice, where physicians are often times compelled to make from 50 to 100 miles a day, the horse can never compete with an automobile in the hands of an intelligent operator.

My troubles have grown less as I became familiar with my machine. During three seasons I have had to be towed in only twice, once on account of a broken chain and once a broken gas pipe. Last season I had practically no trouble, except a little tire trouble, the expense of which did not exceed $6. My necessary repair account during the entire season did not exceed $20.

Graft and Robbery.

There are combinations, however, that are operating not only to keep up the price of the automobile, but to make it expensive to procure repairs. Take for instance the cost of tires. It cost me over $200 to change my car from 3x28 to 3½x30 tire. This cost, without a doubt, represents a big graft, made possible by the rubber trust that controls every department of the rubber industry. Even the railroad companies seem to think the automobilist is a legitimate subject

* Reference numbers are explained editorially

for plunder, and proceed to work their graft, charging double first-class rates on automobile parts.

The Features of an Ideal Car.

An ideal physician's car has not yet been placed on the market. The nearest approach to it, in my opinion, is the car that combines: 1, Simplicity of construction; 2, accessibility to all the vital parts; 3, the minimum cost of operating; 4, superior material and workmanship in its construction; 5, the least amount of labor required to operate. To be more explicit, a 10-horsepower, single cylinder, gas engine runabout, water cooled, chain drive, two speed ahead, one reverse, geared to a speed not to exceed 25 miles an hour, equipped with a standard double-tube tire not less than 3½x30. After operating a single cylinder, 10-horsepower, for three years, and comparing my experience with those who have driven multiple cylinder cars, my opinion as to the superior merits of a single cylinder has become thoroughly fixed. A 10-horsepower single cylinder develops sufficient power for a tonneau attachment, whereby a physician's runabout may become a family vehicle.

I care for and operate my car (128). I usually spend half an hour before breakfast getting it ready for the day's work. I enjoy caring for and keeping it in order, but the height of enjoyment is reached when I operate the throttle on a good stretch of road. I frequently take my family on long country drives and they all enjoy the exhilerating influence of an automobile ride. My son, 12 years old, operates my machine with the confidence of an expert operator.

Permit me to relate the following to illustrate the confidence I place in my machine: Late one Saturday night I got a call to a town 38 miles distant. The entire trip would have to be made after 10 o'clock, and as the night was dark and the roads bad, I concluded to take the night train. I could not return before Monday morning. I told my daughter (17 years old) that she could drive out for me Sunday morning. About 10 a. m. she drove into town accompanied by another young lady. They were unacquainted with the roads and went 6 miles out of their way, making the 44 miles in three hours. I was at home at 3 p. m., ready for more long drives.

Fig. 2.—The car of a southern physician who lives in a region of very bad roads.

The greatest problem in automobiling is the tire question. The cost of keeping the car equipped with serviceable tires is far in excess of all other expenses.

One of the beneficial results of the use of the automobile as a means of travel is the effect it will have on the good road movement, thereby benefiting the general public as well as the automobilist.

DETAILS FROM EXPERIENCE.

C. H. BRYAN, M.D.
CHICAGO.

THE practicability of the automobile for business purposes is, I think, well established. In my five years' experience with several types of gasoline automobiles I have come to the following general conclusions:

1. The simpler the machine and the less parts, the less is the possibility of trouble.

2. The lighter the weight, the longer will be the life of all parts.

3. To be in the range of practicability at all, it must not have pneumatic tires.

4. It must be air cooled.

5. For city use it must be able to run in street-car tracks without damage to tires.

6. It should be high enough from the ground to prevent the vacuum from sucking up dust into the machinery and car and to clear obstacles, such as large stones and high centered roads.

7. It should have at least two cylinders.

A car possessing the above qualities and in the hands of a man who is willing to learn a few things about how to adjust it, is a great saver of money, time and physical energy.

Trouble Galore.

About five years ago I purchased a second-hand runabout with the idea that I could have it overhauled and made into a practical doctor's vehicle. After spending about $900 I found that I could not make it practical. Every change I made in any part would necessitate a change of other parts, from motor to tire. I soon abandoned this idea and purchased a cheap runabout, water cooled, pneumatic tired, with single cylinder and planetary transmission. It was fine for one day, then I hit a spike and put a tire out, then in rapid succession came pump trouble, leak in radiator, leak in gasoline pipe, broken spring, flooding carburetor, bent axle, broken balls, cutout cones, broken connecting rod, short-circuited coil, broken commutator and other troubles.

My average was about three professional calls to one to repair shop or tire store, with big bills in proportion, and a horse in the stable to pay for besides.

A large part of my trouble, as I know now, was due to cheap material and construction and to the fact that properly designed parts were not to be had at that time. In about five months this machine was down and out.

Trouble with Water Cooling.

My next experience was with a larger and heavier single cylinder car, with a detachable tonneau. It was rated at about 8 horsepower, water cooled clincher pneumatic tires, and altogether was a very respectable looking car. I had success with this for two months, after that I went over the same old route, except that my repair bills were larger. In winter I used all recommended drugs in the water to prevent freezing, with poor success, and when winter was over calcium chlorid had eaten up my water tank and radiator, all assurances from dealers notwithstanding. I think a galvanic circuit was formed between the different metals used in the construction of the water circulation. The principal trouble with this car was with pneumatic tires. After running the car a year and spending about $250 for tires, I devised a resilient solid rubber tire (106). After this I had very little trouble, and sold the car, after having used it two years, to try a new kind which looked more economical and practical. The old car, however, after three and one-half years, is still running in the hands of its new owner and the tires are still good.

Success at Last.

About a year and half ago I got my fourth machine (105), a high-wheeled affair, looking like a buggy. It had a double

equipped with roller bearings in every place possible to reduce wear. This buggy automobile I have found to be the most practical of all, for business or pleasure. It has very few parts to get out of order; no water to freeze, no puncturable tires, rollers in the wheels, consequently no axles to grease. The engine is well made and reliable. The air cooling actually cools. It will run in street-car tracks without injury to the tires; it is noiseless and speedy. On long country runs it does not raise dust or give any other trouble. Some object to it on account of its looks, but I find it so practicable as to remove this objection.

I find that with a good practical machine a physician can make better time and do more business with less physical effort than by the horse route. If a horse goes lame it may be weeks before the trouble can be fixed. If the machine breaks it can be replaced much quicker and easier. A machine will not suffer out doors in cold and stormy weather. It will not wander away and can be cared for by oneself much easier than a horse.

This machine is cheaper than a horse in the city and much more satisfactory in every way.

I now use my auto for all my work and pleasure and do not find it necessary to keep a horse or to take the street car.

THE AUTO TOO MUCH TROUBLE TO KEEP IN ORDER.

F. A. SWEZEY, M.D.
WAKONDA, S. DAK.

IN my practice, which is entirely country work, I have used, for two seasons, an 8-H.P., one cylinder, water-cooled, gasoline runabout (1111), and I find that the automobile is not practical for such work, owing to bad roads and inclement weather. They are more for pleasure than for general business use, and I would not advise any physician in country work to buy one and to rely entirely on it. In night work or in wet or cold weather an auto is very annoying; in fact, I have sold mine, and will never buy another. As my friend, Dr. Jepson, of Sioux City, expressed it, in reply to my question as to whether or not he was using his much, "I am not, as I do not get time to run it." The worst drawback is keeping them "tinkered" up every day before using, with the dirt and grease that goes with it. The expense for repairs is very little, but the time put on it is valuable.

IT ALL DEPENDS.

H. A. RODEBAUGH, M.D.
COLUMBUS, OHIO.

THE automobile consists of many working parts and, like all other delicate machinery, requires frequent, intelligent inspection, and prompt correction of little wrongs in order to secure efficient and economical service.

The physician who keeps his horse and buggy in the pink of condition by looking after the food, drink, shoeing, etc., of the former, the oiling, tightening of nuts and other little repairs of the latter, and whose office equipment, batteries, instruments and all other appliances are always ready for instant use, will have no difficulty in operating an automobile as economically as he would maintain horse-drawn vehicles for the same service ($20 to $30 a month).

The Careless Physician Will Have Trouble.

On the other hand, the doctor whose horse is always lame or sick, whose buggy rattles and looks rusty, whose office batteries are always out of order, whose instruments are often about, sandwiched between books and bottles, one, in short whose office resembles a jungled-up junk shop, will be easily disappointed in his effort to use an automobile unless he is willing to employ a chauffeur.

To use an automobile successfully the physician requires a first class machine. The cheaply constructed auto of any kind can not be operated economically nor efficiently.

For the physician's use, an automobile should be light, strong, speedy and easily operated. To conform to these requirements it is necessary to have an air-cooled cylinder to diminish weight and to eliminate plumbing troubles. My machine is representative of this type, and it is extensively used by physicians (101).

One Way to Swell Expense Account.

Next in importance is a thorough knowledge of the mechanism of operation. A physician who was condemning automobiles because of the cost of fuel was found, on investigation, to be running his machine with the throttle wide open, regulating the speed by the ignition lever, thus entailing enormous loss. He was astounded at the result when this error was corrected. It is estimated that 90 per cent. of the motorist's difficulties are due to ignition troubles.

In the case of physicians who are supposed to be familiar with electricity and batteries, these annoyances should be reduced to a minimum.

AN OUTLINE OF THE IDEAL CAR.

C. P. THOMAS, M.D.
SPOKANE, WASH.

I BEGAN using automobiles exclusively four years ago, giving up two horses. I have spent a considerable amount of money in trying and discarding rigs, having owned seven (196).

I am unequivocally in favor of the automobile for the physician in any country where one can be used. It would pay the majority of busy country practitioners to have autos for use at the time of the year when roads are passable, discarding horses except when the mud is so deep that it is impossible to travel in an auto. My auto costs me about $24 a month. To keep two horses cost me $36 a month.

It is necessary, however, to buy the right kind of a car. I would exclude altogether any other motor power than the gasoline engine with electric explosion. Steam and electric cars are very heavy, bunglesome, more dangerous, shorter lived and less satisfactory in many respects.

Four Cylinders Best.

I would advise wheel steer and multiple cylinders (in front and not under the car where they are inaccessible). Four is the best number, since they may be small, causing less car vibration during explosion, and the pull is steadier, thus greatly lengthening the life of the rig. Another marked advantage in multiple cylinders is that if one goes out of commission for a few minutes the others will take it along comfortably until the dead one comes in again. I believe upright cylinders to be more satisfactory, the wear of the rings is more even and the machinery less complicated. Chain drive with planetary transmission is satisfactory if well protected from dirt. The shaft drive, if well made is all right, and permits three speeds forward, which is of marked advantage, allowing hills of considerable grade to be taken with ease in the intermediate speed.

Advises Air-Cooled Engines.

Air cooled engines are far superior to water cooled ones, because they cost less to build, permit great reduction of weight (involving less fuel and tire expense), save much expense for repairing of plumbing (the water radiating system being delicate and easily deranged), and do not freeze up in cold weather. I know from two and one half years' personal experience that the air cooled engines are sufficiently cool for good service. Large cars should have fans attached to increase the circulation of air.

The physician should buy an automobile with at least two horsepower (actual, not estimated) more than there are hundreds of pounds weight of the rig. For comfort in riding over rough roads, speed and durability, the car should not much exceed 1,000 pounds weight, having preferably 12 horsepower. There should be seats for two and only two.

Two Weeks' Course of Instruction.

The next most important factor is that the driver must know his car. It is unsafe for any man unfamiliar with gasoline engineering to attempt long trips until he has spent at least two weeks with a good skilled demonstrator, who has shown him why and where everything works. Many little matters can be adjusted in a minute if understood, but they can lay one up for a day if one does not know how to find them. This lack of knowledge on the part of operators has tended to make the use of automobiles less popular.

Any busy practitioner in city or country can do three times as much work, if he has it to do, with a good auto than with the best team. It is more comfortable, more cleanly, more pleasant and less nerve wracking and not more expensive than the use of horses.

Autos Used Every Day in the Year.

In this climate in the city, even off the pavements, I operate my wagons (197) every day in the year, having them washed and oiled daily at the garage. I also have all adjustments done there, but most of them I could do if I cared to take the time. The weather is never too wet, or too cold or too hot or too dry to leave the auto out in front of your office, hospital or patient's residence while you attend to your business, unconcerned about the welfare of some poor beast of burden.

It must be remembered that a wagon filling the above description (which should, by the way, have a canopy top with glass front for the winter use, the glass being removed if preferred during the summer) can not be purchased in the market for much less than $1,500. While there are a number of small single cylinder rigs for sale cheaper, some of which give very good service on good roads and in good weather, I do not believe it wise to purchase them, the cheaper rig being more expensive in the long run.

A HIGHLY COMMENDATORY STATEMENT.

A. N. COLLINS, M.D.
DETROIT.

My experience has been with two small one-cylinder cars, weighing 750 and 1,150 pounds. I have used them constantly for over four years in my practice, which is largely limited to the city of Detroit. I have cared for my machine nearly all the time. The first year I ran my light runabout one year at an expense of $20 per month. The machine enabled me to do much more work, to have more leisure than with two single rigs, to dispense with the coachman and to have much pleasure and satisfaction. The drawbacks were an occasional let down at an inopportune moment, greasy clothes and, at times, disappointed patients.

Auto Far Cheaper Than Horses.

Covering a period of twelve years, my expenses for two single horses and rigs with man, board, etc., figured $113 per month, $1,350 per year. I paid for my machine (107), paid all its expenses and was $175 under the cost of horses the first year. Owing to the tire and other delays, I decided that two machines would be the only solution of the difficulty. In March, 1904, I purchased a second runabout (108) which I now use. Largely owing to the uncertainty of tires, I was still annoyed by the uncertainty of getting to my patients. I nearly always had a machine in reserve, but that helped me little when a tire went down in the middle of my rounds.

Solid Tires Solved the Difficulty.

In May, 1904, I equipped my latest purchase with four-inch solid tires (109), on which I have run constantly with perfect comfort since, now nearly twenty-three months. After putting on solid tires, I found little or no use for a second machine. I sold my first purchase for $220 in June, 1905. Since that time have had as little inconvenience and delay with my machine as I would experience with horses. My monthly expense for twenty-three months has been under $18 per month for all expenses. I have entirely eliminated the tire expense and delay, having had not one cent's expense during this time. Aside from gasoline, oil, alcohol and batteries, the main expense has been one repainting and three overhaulings to put on new sprocket, gears and chains. I have worn out three sets of sprockets, gears and chains. The expense of these replacements has averaged about $50 each time for labor and new parts. I have had no breaks that are not common to the same machine equipped with pneumatic tires.

Twenty Thousand Miles on Solid Tires with Comfort and Economy.

A modern well-made machine should run at very small expense when one eliminates the tire expense, as can be done by using solid tires. I have demonstrated this beyond any question, the machine men and tire men to the contrary notwithstanding. Solid tires can be used with perfect comfort, and are a much better winter tire than pneumatics. My machine has made over 20,000 miles, and the tires look good for another year. The most helpful experience I can contribute is this feature of having demonstrated the practicability and comfort of using solid tires for daily work. To have a tire that never goes down or gives trouble or expense does away with 95 per cent. of the uncertainty of the auto.

No Trouble with Water-Cooling Device.

I can not speak for country work, but for city use there can be no question as to the economy and efficiency of the auto in our work. We need a strong, light machine, well wired, with strong axles and easy springs. I have for three seasons used for an antifreezing mixture, simply water with 25 per cent. wood alcohol. I have never had any trouble with it, never burst a radiator or broken a pump. At first I added glycerin. I found no benefit from it. One-half the usual quantity of cooling solution is ample in cold weather. Keep the solution well down in the tank. The proportion of alcohol should be kept up.

Auto Ranks Next to Fishing as Recreation.

My machine is kept in my basement, where I have my work bench and tools. If one is inclined at all to mechanics, the few minutes each day or the occasional hour or two spent at putting the machine in shape is a pleasant diversion and gives a perfect rest from the line of thought ever in our minds. I look on it as next to fishing for forgetting other work. A few moments before breakfast is sufficient to oil it, inspect it and put it in order for the next twenty-four-hour run. It seldom needs anything further. In this way you become a part of your machine and it becomes a part of you. I no sooner think of my machine not going than I do of my legs not going. My whole experience is wholly in favor of the auto as compared with horse power in our work.

THE DIFFICULTIES OF EXPERIMENTATION WITH AUTOS.

C. B. MILLER, M.D.
HELENA, MONT.

In the spring of 1903 my son, while East brushing up on professional topics, became interested in the automobile, investigated a number, and finally ordered one, which was to be shipped in a month. A month's interest on the money did not look large to him, so he paid full price and the vehicle was shipped *four* months later. In the meantime, he concluded not to remain here, and, when the machine arrived, *my* experience began. The first evening I drove about 2 miles, up and down some pretty steep grades, and was well pleased. The next evening I went to see a patient 6 miles in the country (having my horse and buggy follow). I made the trip out in excellent time, but on the return a carburetor trouble developed (as was afterward discovered from a lump of solder lodging on top of float) and much gasoline leaked out.

When we got well into town the commutator loop had worn through and was giving a spark that would have done credit to the best *x*-ray machine. This set the gasoline on fire, and but for a lawn hose that was being used near by my subsequent trials might have been avoided. The manufacturers promptly sent me a new commutator and ignition cords, for which they charged full price. Being about as good mechanic as doctor, I repaired the old loop, making it much better than when new, wrapped the burned wires with adhesive plaster and soon had the thing going again. I tried two other carburetors before getting one that was a success and had several so-called experts working on the machine while I was daily acquiring experience—and possibly losing religion. I never started out with the certainty that I should not have to be hauled home, as frequently happened. I returned the motor to the factory in December, 1903, but it did not do any better, and in January, 1905, after an accident, the manufacturers said it would cost $40 or $50 to repair the motor, and I shipped it to them again. They returned it *in five months* with a bill of $75, but after an exchange of a few pleasantries, they generously threw off $10. By this time the expense had reached the sum of $223.40, not counting original cost or freight, and I had driven less than 200 miles, and kept my horse and buggy as before.

Fig. 3.—The car of an Indiana practitioner.

Runs Through a Montana Winter.

In reconstructing the motor the company greatly improved it, and since that time I have driven 405 miles, through snow, mud and on ice without the slightest fear of having to be hauled home. One trip was 14 miles in the country and back, through from two to eighteen inches of snow, considerable of the distance drifted and unbroken. I dispensed with a horse and have done all my work with the machine, out every day and frequently at night. We have had an unusual snowfall this year and two months of nearly continuous sleighing, and no other auto has been on the streets except occasionally on a fine day. We have no level streets, all have grades of from 2 to 25 per cent., and this makes the use of a machine more difficult than in most cities.

All Expense Less Than Five Dollars a Month.

My total expense since September 24 has been $25.25, which includes an improvement on the brake, change in connecting rod and cover over rear of body, in all, $8.25, $5 rent of ground, two sets of batteries, a few minor repairs and 25 gallons of gasoline, of which I have 5 gallons on hand. My horse cost $25 per month for board, besides shoeing and repairs to buggy and harness, and I would dislike very much to return to the use of one. I use a vehicle (110) with 44- and 48-inch wheels, solid rubber tires, stationary roller-bearing axles, double opposed cylinders, air-cooled, sliding-gear transmission, with two speeds forward and reverse, chain-driven counter shaft, rope drive to rear rims of wheels, maximum speed of about 20 miles. I believe this is the best kind of a machine for a physician who does his own driving and care taking. It is easily controlled, clears the ground 18 inches (a great advantage on country roads), runs as fast as the laws of most states permit, is not high priced, and under ordinary circumstances is not expensive to maintain. Being air cooled, it can be used in the coldest weather, may be left standing out all night—as mine has frequently—without fear or sympathy for the horse, and does not cost anything when not in use. For use in daily practice of medicine, I would not exchange mine for any of the numerous cars in the city costing from $650 to $3,500.

Enjoys Repairing in Leisure Moments.

As to housing, I leased a part of a vacant lot near my office and had a corrugated iron building 10x12 constructed. It contains a bench, vise and necessary tools for ordinary repairs, and I can do most of them in my leisure moments and enjoy the diversion. I have washed out crank case once and cleaned spark plugs twice in five months, and it requires little time to fill gasoline tank and oil cup occasionally. I can run the machine out and make an ordinary call in the time I waited for my horse.

Simple things often cause great annoyance, none more frequently than electrical disconnections. I have known autoists to have to be hauled home, and it once happened to me, on account of a broken or loose battery connection. While a volt-ammeter is valuable in ascertaining condition of battery cells, a much more useful article is an ordinary buzzer, such as is used as a substitute for an electric bell. By attaching two short cords which can be applied to the elements, any break in the circuit can be readily ascertained. The strength of the battery or of different cells can also be sufficiently determined. It is inexpensive and worth its weight in silver, at least, to the automobilist, and one should always accompany the machine.

If I desired a machine for pleasure or touring I should want one with three to six cylinders, 30 to 40 horsepower, air cooled and shaft drive, but such are too expensive for ordinary practice.

Manufacturers Do Not Deal Fairly.

The trouble is that many manufacturers, after getting your money, do not seem to care at all whether the machine meets your expectations or not. If living at a distance you pay for it without knowing whether it is properly assembled or will turn a wheel, and the guarantee is practically valueless. No one should buy an automobile of any kind or make without expecting "a heap of trouble on the old man's mind."

AN EXPERIENCE OF FOUR YEARS WITH ONE CAR.

IRA M. COMSTOCK, M.D.
NEW YORK MILLS, N. Y.

AFTER four years' experience with the same motor vehicle (125), getting better service each year from it, and a twenty-five years' experience with horses, I prefer the automobile for my use. The vehicle that can shorten distance from one-third to one-half is pre-eminently the doctor's best transportation.

The requirements in a motor vehicle for a physician's use are light weight, high power, simple mechanism, large wheels, long springs, few bearings, and equipped with both batteries and magneto, as a little mud, water or oil will queer the magneto at times, and if you have a set of live batteries, switch them on and go on without loss of time. My machine has 10 horsepower, triple-cylinder motor and weighs 950 pounds.

Sent His Man to Factory to Learn Care of Auto.

My machine is kept in the barn with my carriages, and is cared for by my man of all work, whom I sent to the factory for two weeks to familiarize him with the construction of the vehicle from the ground up, to learn how to keep the machine in the most serviceable condition, to make ordinary

repairs and adjustments; in fact, to see that it is always ready for use.

The cost of the motor carriage was $1,250 at the factory. The total expense of maintenance for four years, including freight and express charges on machine and parts, accessories, repairs, new rims and tires, gasoline, cylinder and lubricating oils, batteries, magneto, insurance, registration fee, tags and number, expense of sending man to the factory for two weeks' instruction, the expense of an expert from the factory to start and give me instructions, in fact, every expense caused by the ownership of the machine, $749.28, a yearly average of $187.32, which is very close to the cost of maintaining my horse and carriage for the same time, and the auto has done the work of two horses.

Cheerful Audiences at Roadside Repairs.

The tires have been the most troublesome part of the machine. The disadvantages are the frightening of some horses and their timid drivers, the occasional necessity of making roadside repairs in the presence of an audience of guying smart Alecks, dodging missiles thrown by hoodlums and the discovery that there are some "road hogs" who are not automobilists.

THE PHYSICIAN'S AUTOMOBILE INDISPENSABLE.

HENRY ENOS TULEY, M.D.
LOUISVILLE, KY.

THE question must be approached from several standpoints: cost, maintenance, repairs, and finally comparison with horse and buggy. For ordinary city use the air-cooled machine probably has some advantages, as no trouble is had with antifreezing solutions made necessary in winter in the water-cooled cars. In my judgment the water-cooled car has many advantages in long-distance driving and touring.

Tires the Chief Source of Trouble.

Eliminating tire troubles, which on city streets will continue to be the principal and greatest source of trouble, the automobile is the decidedly best method of transportation for the busy doctor. I have been driving a single cylinder, water cooled, 1905, machine (102) for a year, at a cost in repairs and maintenance decidedly less than for the keeping of one horse. My machine is oiled and washed in my own stable, and a garage is not visited except for the repair of punctured tires (I find it decidedly more convenient and less troublesome to have this repair made by men of experience than to attempt it myself). For those who have the time and inclination a great deal of troublesome tire difficulties would be obviated by the use of the quick detachable tire devices put on the market during the past year.

The runabouts, or the small, four-seated touring cars, such as mine, are the only practical machines for the every-day use of the physician. I look on my machine as indispensable to my work, and even at a cost decidedly greater than the horse and buggy, I would still be in favor of its use.

SYNOPSIS OF A CHICAGO EXPERIENCE.

ARTHUR R. EDWARDS, M.D.
CHICAGO.

WHEN I bought an automobile over three years ago some friends laughed rather indulgently, but the machine has done exactly what I hoped for. The first months were full of surprises, stops and suppressed—as well as distinctly voiced—invectives.

Some annoyances were due to mechanical imperfections which have been removed by recent improvements, but most were due to my own ignorance of the simplest mechanics. The grinning spectators of my initial troubles were rather irritating, because I was never certain that I could locate the trouble. Nowadays nothing stops the tried autoist for more than a few minutes. The tyro doubts such optimism because of unhappy experiences with the dealer, repair man and garage keeper, who too frequently impose on his helplessness. The autoist is never happy till he knows exactly what the difficulty with his engine is; long delays and longer bills are the price of his ignorance, which is often not much less than that of the so-called mechanic.

Advantages of Air-Cooled Motor.

There are many splendid water-cooled machines on the market, but I believe that the following advantages are proved in favor of the air-cooled motors for a physician who wants to run his own car:

1. *They can not freeze.* I have run every day for three winters, through snow and at as low as 20 degrees below zero. The car can stand out of doors for hours during office hours, or even over night. No shelter is needed nor a driver to keep the engine moving lest it freeze.

2. *They do not heat.* With accessory exhausts they climb long hills and traverse muddy or difficult roads fully as well as water-cooled cars.

3. *They are lighter.* Since the heavy water jackets are unnecessary, they are easier on tires.

4. *They are more simple.*

Fig. 4.—A city physician in one of the parks.

Good Service on Roads of All Kinds.

1. *Service.*—I have done all my work with my machine (136). The only time it was out of service was two half days when improved auxiliary valves were installed—a voluntary, not an enforced, interruption. Our city roads are fairly good, but I have gone through deep mud and horrible roads in town. In addition, with my wife and small boy I went to New York and back, going over every kind of road, some equaling the artillery roads of France and others full of stones, ruts, piles of gravel and huge masses of plowed turf, thrown on the roads to "improve" them. We went up steep hills, through washout, sand, deep mud and water axle-deep.

2. *Expense.*—Reviewing my closely kept expense account, my total expense for the year has been $336, an average of $28 a month. This includes $15 a month at the garage (rent, washing and polishing but not delivery, for I call for it), oil, gasoline, charging batteries, $75 for new tires or vulcanizing, and $25 for new or extra parts, accessories, tools, etc.

3. *The Daily Attention Required.*—This I figure at fifteen minutes. The machine should be well oiled every two or three days and once daily flooded—while the motor is running—with kerosene to cut out the thickened oil, carbon and dirt. The vibrator points and springs in the coil need a few minutes' attention about three times weekly, to keep the platinum surfaces even. Once or twice a week every bolt should be looked after.

How to Eliminate Sources of Trouble.

4. *Troubles.*—a) Plugs: I have not touched a plug for [illegible] months, the accessory valves carrying off contaminating oil and carbon. (b) Vibrators: (See above). (c) A dead battery: One should always carry an extra battery. (d) Tires: Punctures are few with tires of foreign make, though the American product seems better in the last year. There are vulcanizing preparations with which the punctured tube can be made good as new when one returns home. Two or three extra inner tubes should always be carried. I have gone eleven months without a puncture and then had eight in one afternoon! (e) Chain: A broken chain may be repaired in fifteen minutes if there are always some master links in the tool box. Breaks are positive "heart blocks" without these links, a cold chisel and a hammer. (f) Slipping, skidding and spinning in mud, ice or snow are prevented by using detachable chains on the rear wheels. Loamy roads are very hard to travel. Much trouble is due to other meddling with or actually running the machine. Switch locks prevent any one else from starting the car.

5. *Time Saved.*—On short trips one saves half his time and even more on longer courses.

6. *Accessories.*—The auto driver must carry extra plugs, inner tubes, a few master links, an extra battery, and extra float (for the carburetor), a pump, jack and set of tools well secured under lock and key and, therefore, always at hand.

7. *Health and Recreation.*—The saving of time, the fresh air, the absorption in the car in motion and the possessing of a hobby which one enjoys while actually doing the work brings one home at night fresh and ready for his reading.

THE AUTOMOBILE IN MAINE.

LANGDON T. SNIPE, M.D.
BATH, MAINE.

CHIEF among the questions which confront a prospective buyer of an automobile are: "Can I afford it?" and "Can the machine do the work of the horse?" The first question each man can easily decide for himself after studying the cost of the machine and of the upkeep.

Uses Horses in Winter.

The second question is largely one of roads. In some localities the machine can be used with pleasure all the year, while in others a very satisfactory solution of the problem is found by using a machine in summer and fall and a horse in winter and early spring. I belong to the latter class, and after one year's trial of this plan I would be sorry to return to the permanent use of the horse.

I began using my gasoline machine (120), May 20, 1905, and continued using it till December 14, when I returned to a horse. In this period the machine never failed me, and as I was ignorant when I started and still am for that matter, this is an excellent recommendation for the machine.

An Itemized Expense Account.

I [illegible] has been as follows:

FIRST COST.	
Cost of machine	$1,300.00
Freight	30.00
Insurance [illegible]	20.00
RUNNING EXPENSES.	
Gasoline	$42.76
Lubricant	5.90
Batteries	0.65
Repairs	4.65
Labor	8.16
Accessories	18.57
Repairing tires	2.10
Total	$88.79

SUMMARY.	
Running cost per mile (2,744 miles)	$ .032
Running cost per mile (omitting accessories)	.025
Building automobile house	160.62
Registration and license fees	4.00

It is almost unnecessary to say that an expense account for a single year is liable to be deceptive, as the experience of a series of years is necessary for real comparison and economy.

Great Diversion to Care for the Machine.

I keep the machine in a house 16x14½ feet, built for the purpose, and I care for the machine myself. This I find a great pleasure, and as a mental and physical diversion it is of much value. If one chooses to have a man care for the machine much time is saved compared with the use of the horse.

The simple fact that an automobile is not used the whole winter is no argument against the advisability of a physician's owning one. With a winter like the present one the use of the automobile or the horse is largely, if not entirely, a matter of personal choice. In city practice or in the country if there is little snow, an automobile in which the driver is well protected would be all that could be desired, but in Maine the horse will continue to be superior in winter. It may be on account of this fact or it may be notwithstanding this fact my enthusiasm for the machine is as great as ever, and I anticipate the enjoyable and satisfactory use of it when the roads are once more in good condition.

Unless a man expects to buy a new machine each year he should avoid the cheaper grades. If used for a series of years the higher priced runabouts are in the end cheaper. For the greater part of the year, though a machine costs a little more than a horse, it is much more comfortable and enjoyable and a great time saver.

AN OUTLINE OF THE PHYSICIAN'S IDEAL CAR.

C. E. ROGERS, M.D.
MONTEVIDEO, MINN.

I HAVE owned three cars and have traveled enough miles in them to equal more than twice around the world. My observation along the lines of design, construction, operation, etc., has been extensive, but my affirmations must be accepted as my personal opinions.

The engine should have multiple cylinders; gasoline is best and cheapest fuel; sliding-gear transmission, best type; drive, of the shaft pattern; cooling system, water (alcohol, glycerin and water for winter use); half elliptical springs; double tube tires; storage battery for spark or ignition; acetylene lamps (lens mirrors and gas tank), etc. An ideal car for a physician should be single seated (capacity two persons only); have plenty of carrying space; weigh not more than 1,000 pounds (less if possible); possess 12 H. P.; have a ground clearance of not less than 12 inches; have a full top; a speed of 40 miles per hour and cost not more than $1,000. Type of engine, transmission and drive, mentioned above, allows of easy access from upper side of car to all working parts and is easy to care for. Gloves only need be soiled in care of car, such as oiling, filling gasoline tank, etc. Wheel steer is generally adopted.

Price, weight, ground clearance, etc., mentioned above, are the lacking essentials at present of my idea of a model car, but leaving these questions out, several cars made at the present time correspond closely to my ideal.

Would Not Accept a Team as a Gift.

I have never been stalled on the road with my present car (123), and it has given me no trouble whatever. I have never paid out a cent for repairs, and have covered nearly 3,000 miles with it in all kinds of weather and on all kinds of roads. I can make twice the number of miles with it on good roads that a team can make and with more comfort and at an expense not to exceed one-fourth of what a team would cost. A team would not be accepted by me as a gift for use in practice. I do not mean to say a team is useless, because when the snow is deep and drifted badly, it discounts any automobile yet made. The fact is, under such conditions, an automobile is worse than nothing, but exclude snow and snow drifts, and the horse is simply "not in it" with the automobile.

A word about sliding transmission, three speeds forward

What is known as the intermediate gear is of incalculable value for time making as compared with a two-speed forward transmission. Many times when the roads are too muddy or rough to run on fast gear the intermediate works beautifully. Also, when a hill can not be made on fast gear. Shifting from a fast to slow gear on a two-speed forward transmission makes too much difference in speed of car. Here is where the intermediate gear shines.

Members of the profession, feeling the need of better help in time making, get rid of your horses and buy an up-to-date automobile. If you desire to take your family or neighbors out for pleasure, buy a touring car, but for the practice of medicine, a runabout.

THE CITY PHYSICIAN SHOULD HAVE AN AUTOMOBILE.

J. B. BOUCHER, M.D.
HARTFORD, CONN.

I WAS a great lover of the horse until two years ago, when I transferred my affections to an automobile. The first year I ran a single cylinder air-cooled machine 5,000 miles. It was out of commission but one day. I then sold it and bought a two cylinder of same make (117). This covered 5,000 miles during the past season and was out of commission about two days. It has been on the road all winter, excepting about two weeks in deep snow. There is no comparison between it and the horse for convenience. I keep it in a barn back of my office, it is ready night and day, it is cared for by my man—I believe that's one reason why I have had such good success with it. It may be my notion, but I have little faith in the garage.

Costs Same as Horse in Long Run.

Now for trouble. Last year I had only one tire puncture, this year three or four. I believe the large tire is more economical. There are a number of little things that must be looked after; small adjustments, etc., most of which I think can be done under the instruction of the owner if he understands his machine. I would advise the physician to learn to know his machine thoroughly, and not to depend on others or he will have many an annoying stop. As to economy, during the season repairs, gasoline, oil, etc., cost about one-half as much as a barn bill when you require two horses, but when you take into consideration tire trouble (ordinary wear) and the depreciation in the value of a macine from year to year, realizing that on a $1,600 machine run one season you would have to sacrifice five or six hunderd dollars if you sold it, I question if there would be much difference in the price of automobile and two horses at the end of five years. I believe the balance, if any, would be in favor of the auto, but, as I said, the convenience far surpasses the trouble.

Far More Pleasant Riding in Auto.

There is another side to it: You can accomplish much more work in a day with the auto. There is a fascination about the machine that grows and makes the work of travel a pleasure instead of labor, as is often the case with a poor tired horse. I believe the city doctor can run a machine with better success than the country doctor. I also believe that if I practiced in the rural districts I would not change the faithful horse that is always sure, although a little slow.

TESTIMONY FROM THE SOUTHWEST.

J. A. BOWLING, M.D.
ALVA, OKLA.

I AM an enthusiastic advocate of the auto for the physician. I live on the Salt Fork of the Arkansas River, and up and down stream the roads are sandy and very hilly, but away from the river the roads are generally good, except after going west and south 15 miles, then the country is sandy and hilly again. But I have not had any trouble yet on any of these roads.

I have a single-cylinder, copper-jacket, water-cooled gasoline engine, rated at 10 horsepower, chain drive with detachable tonneau, planetary gear, two speeds forward and reverse (132). By spending one-half to one hour each day, looking over and making any adjustment that may be needed, I am always ready for emergency calls. I have two oil lamps and one large acetylene lamp, which give ample light for night driving.

The cost of running my machine has been less than keeping one horse so far. I have 3x30 pneumatic tires, but I believe solid cushion tires would be best, for they would last longer and do away with puncture troubles.

Cold Weather Stole a March on Him.

About the only trouble that has amounted to anything was a freeze-up this winter. I made up some antifreezing solution, but waited for cold weather before putting it in; but the cold weather came in the night, and when I arose in the morning, behold, my radiator was frozen and bursted. I sent for a new radiator, but before it came a repair man fixed the old one. I am reserving my new radiator until after freezing weather is over.

Had it not been for the freeze-up I would not be out one cent for repairs, except I broke one leaf in my front spring, which I had to have welded.

A doctor should study his car and understand its anatomy and physiology; then if something goes wrong on the road he can remedy the defect and go on, and will not be compelled to send for the repair man and to suffer delays and expenses.

Saves Him Time for His Practice.

I received my car Oct. 11, 1905, and have run about all the time since, except when the roads were very muddy. I do not believe it pays to run an auto when the roads are muddy and slippery, because if you try to go fast you are liable to skid into the ditch or into the fence. I often make drives into the country of 25 to 30 miles, and if I use a team it will take me all day or all night, and the team is nearly played out and so am I. But with the auto I can easily make the trip in one-half of the time, and thus I do not have to neglect my patients at home so long.

Taking it all in all, I would not like to be deprived of my auto. Besides making calls in one-half the time, there is something about the auto that is infatuating, and the more you ride the more you want to ride.

THE QUESTION OF ROADS.

A. A. BONDURANT, M.D.
CAIRO, ILL.

THE practicability of the automobile as a vehicle for physicians should be discussed honestly and fairly from every viewpoint. One should weigh well the opinions of all, both of the enthusiast who has money to waste, of the other extremist who either has little means or from custom will not release a dollar until sure of its return with compound interest. I have had four years' experience with cars (using two since last July).

The Auto Will Not Succeed in Deep Mud or Sand.

If this was for a newspaper I should be tempted to evade the truth in deference to our city, but as only doctors will see it, and as they are educated to overlook the shortcomings of people, I will say we have as few good roads as any place I ever saw of its age, size and amount of business. More than half of our streets are not graded, and those that are are poorly kept. They are uneven; crossings are above the surface and mud is brought on them by vehicles from other streets. With our variable seasons, this is for its size about as undesirable a place for autos as one could easily find. An automobile will not do good work in sand or mud. A car with sufficient power can go in some mud and sand, but if I expect to encounter very much of either I leave my car at home, as the wear of machinery and worry of such travel does not justify the attempt.

A physician with no mechanical taste shouldn't buy an automobile unless he wishes to keep a chauffeur.

My experience is with gasoline, water-cooled cars with good tops, and yet they are very unpleasant things to handle in cold weather, often hard to start and requiring too much exposure to the cold if they need adjusting away from barn.

Expense has been about the same as that of my horse and cab. I do the oiling and some minor repairing. I keep the machine at home and run it myself for the convenience of having it ready at all times. I use it about nine months in the year, depending on the winter. I have thus spoken plainly of the disadvantages, but I will not be without one, for when not in use there is no expense and attention required.

Can Do More Work with an Auto.

My first car was accidentally burned and cost me $220 to rebuild. Not long before that my $300 horse sickened and died, so I eliminate possibilities. I have had no serious accident from an auto, but several slight injuries, with narrow escapes, from severe results from horses; chances probably about even. I can do more work with a car than any other way. It starts quicker, goes more rapidly, stops on shorter notice and requires no hitching or unhitching. I have made well-paying calls at a distance which would not have been

Fig. 5. In winter, in front of the office. No need of sympathy for the poor horse.

conveniently made in any other manner. The car does not fret at flies or mosquitoes, neither is it punished by heat, cold or rain.

I not infrequently make a call and return to my office by the time the livery man would have gotten my horse to the office. It being easy to make calls, I am more apt to do it at the desired time. I do not have to wait for the car to eat and rest. With good streets and roads distance is practically eliminated. My first car is single vertical cylinder, of 3½ H. P., weight 800 pounds (121). It was a high-priced car and is doing good work now when needed, but the reach is not great enough for comfort on rough streets. But few times in four years' hard service was that car brought in by other than its own power.

My second car, running since last July, including 400-mile trip from the factory, has never been assisted home. It is a double horizontal cylinder of 16 to 18 H. P. (122), weight about 1,400 pounds, rides with more comfort and I feel safer in it at a distance from home than in the small car, because of its greater power and second cylinder, but it is not as convenient in narrow streets, where short turns are desirable at times. Gasoline averages about three-fourths of a gallon a day (11 or 12 cents) for old car and about twice that for the new.

AN IOWA EXPERIENCE.

M. G. SLOAN, M.D.

DES MOINES, IOWA.

A VERY expensive experience has convinced me that it decidedly doesn't pay to buy a "cheap" machine. My present machine (114) is almost two years old, but as nearly as I can tell is just as good as new. I tried a cheap auto (115) for two years previously, and an account of the grief of all sorts that I had would fill a good-sized book.

In country practice—in Iowa at least—it is simply impossible to use an auto a certain portion of the year on account of the deep mud. Makers may make all the claims they choose to the contrary, but it isn't so that they can be used successfully in deep mud. On paved streets there is no trouble in running a good machine every day in the year, regardless of the weather, unless the snow is deep enough to stop street-car traffic.

I am sure an auto is less expensive to keep and run than is a team of horses; it is very much more satisfactory because of the constant readiness for a quick start and the speed with which a call can be made. Very often I have been able to get to a patient two miles from my house in less time than would be consumed in getting a team ready to go.

I would advise no physician to buy an auto unless he has some mechanical genius in his make-up. The most simple derangement of the mechanism will prove his undoing. Tire troubles are most vexatious of all. Lately I have placed solid rubber tires on my rear wheels, and, although they do not ride quite as easily as pneumatic tires, they are so decidedly superior in every other way that I consider them a success.

THE ELECTRIC AUTOMOBILE.

GEORGE D. KAHLO, M.D.

INDIANAPOLIS.

FOR physicians' use the automobile is no longer an experiment; it is a practical utility. In a city with comparatively level roads, good pavements, and where a limited distance is covered, the electric machine, in my judgment, is the most practical vehicle which one can have. Its particular advantages are simplicity of operation, cleanliness and absence of noise.

My experience with this type of vehicle covers a period of about eight years. My first machine (118) was one of the earliest models and was not a complete success because the electric machine had not at that time been fully perfected and because so few persons understood its mechanism that it was almost impossible to have it properly cared for. After returning to horses for a period of two or three years, I bought another machine (119), which has always given me most excellent satisfaction.

Comparison of Electric with Gasoline.

Such a machine sells for about $1,000, and its cost for maintenance in a garage is somewhere in the neighborhood of $35 per month, the principal items being: Storage, cleaning and delivery, $20; tires, $8 to $10; and incidental repairs, $3 to $5. The life of a battery in constant use is usually from fifteen to eighteen months, and the cost of new plates will be from $100 to $150, depending on the number of cells.

The initial cost of a gasoline runabout is somewhat less and the expense of maintenance is less, but such a machine is not always to be depended on, and styles in gasoline machines have undergone so many changes that when one takes into account the loss in replacing an old machine with one of a late model the total outlay is considerably more. On the other hand, very few changes have been made during the past four or five years in the style of the electric machine, and these have been largely in improvements, the installation of which involves but comparatively slight expense.

The gasoline touring car is undoubtedly the most luxurious of all vehicles, but to the majority of physicians it is almost too much of a luxury, for not only is the original outlay considerable, but the cost of maintenance is correspondingly great, and besides, for making a professional visit, a lighter and simpler machine is more convenient.

Compared with horses, automobiles of all types offer many advantages, especially in a city practice. One can get about so much more quickly and one has not to consider whether the horses are going to run away, whether the driver is having his ears frozen and, last but not least, one is relieved of the constant companionship of a coachman. In a country practice, where long distances must be covered over rough roads, I can readily see how horses would be more serviceable.

My machine is delivered at my residence at 8 o'clock in the morning and is rarely back in the garage before midnight. Whether I am at home, in my office or visiting a patient it is always at the door, and it would take three or four horses and two coachmen to do the equivalent amount of work, to say nothing of the greater convenience and comfort in getting about.

FOUR YEARS' SUCCESS WITH A STEAM CAR.

J. G. HENRY, M.D.
WINCHENDON, MASS.

My interest in the development of the horseless carriage was greatly stimulated in the spring of 1900 by a friend who purchased a small steam runabout, the first automobile in town and one of the first in this section of the state.

During the ensuing winter I placed an order for a two-seated runabout (165) with a firm who have since become one of the best known makers of steam cars in this country. After a vexatious delay of several months, I secured my car late in the fall of 1901, and have used the same machine since, doing practically all of my work with it for about half of each year.

For some years before getting the auto I had kept three horses all the time. Since then, from about May 1 till late in October, I have kept only one in the stable. I have kept a careful expense account during this time, and know exactly how much it has cost each year for operating expenses and repairs.

The first cost of my car was $600. I have since spent $180 for various improvements and changes that can not be properly charged to the repair account. These items include lamps, improved steering gear, extension front and dash, clock, odometer, touring basket, etc., and also the very important item of changing from a chain to a gear drive. My engine is now geared directly to the differential and being entirely enclosed, is much easier to keep in order and there is no chain to bother with.

I take the entire care of my machine and make all of the minor repairs that I can and thus obtain a better knowledge of the machine and its capabilities, besides keeping my repair bill down. Each morning I spend from twenty to thirty minutes in getting it ready, filling tanks, oiling machinery and firing up.

Steam Up All Day.

After making my round of calls, the car stands in the stable with the pilot light on the remainder of the day and at any time can be made ready in two minutes for a fresh start. During most of the season it is under steam from 6:30 a. m. till bedtime. As I usually have one horse in the stable I plan to use that in bad weather and for night calls, but my long trips I do with my auto, day or night. I consider this machine as reliable as a horse, and only twice in the four years has it been necessary to be towed home. It has proved a great time saver, especially on my long trips which I can do in about half the time required with horses, and my long rides in hot weather are delightful and never tiresome.

The gasoline consumption I rate at about one gallon for 10 miles. As my gasoline tank holds 13 gallons I can run at least 125 miles without refilling. The water tank holds enough for 20 or 25 miles on ordinary roads. Taking water with the syphon at any tub is a very simple matter and requires but three or four minutes which is a convenient time for oiling the engine.

I have made it a rule to replace any part of the machinery as soon as it showed signs of wear, and I think this plan has saved me some expense, and now after four years of hard service the car looks like new, runs as smoothly as ever, and all vital parts are in excellent condition. I am now putting on artillery wheels, with 3-inch clincher tires in place of the old 2½-inch single tube, and am also adding a folding top. With these improvements I expect to find it a much more comfortable vehicle in bad weather, easier to clean and hope that my tire bill will be less. The machine weighs about 1,100 pounds with the tanks filled, and easily carries my family (combined weight of four, 475 pounds) over all roads we have yet encountered. It is very smooth and quiet in operation, rides easily, is very fast and a great hill climber.

Carries a Fire Extinguisher on His Auto.

Perhaps the principal objection to any steamer is the ever-present possibility of fire. I am blessed with a large bump of caution and early added a fire extinguisher to my boiler, consisting of about 5 feet of hose connected to the blow-off and carried coiled under the rear seat. In case of need I can instantly turn a jet of steam under my full boiler pressure on any part of the vehicle. Another defect is the occasional blowing out of the pilot light when the car is standing on a windy day. It is annoying when in a hurry to find the fire out and raw gasoline dripping from the burner.

Fig. 6.—A South Dakota physician about to start for his country calls.

The automobile has not only proved a decided help in my business, but has been a great source of pleasure to my family. With it we have had many delightful trips each summer, sometimes going 150 miles in a day and sometimes but a short distance to some pretty lake or other point of interest. As a means of summer recreation I consider the automobile ahead of anything else.

I stable my car in a small house 10x12 that stands in my back yard, about 50 feet from the house and stable. This is fitted with a small work bench and vise and is a safe and convenient house for summer use. A year ago, in making an addition to my office, I made a basement room for winter storage. This is 15x9 feet with cement floor. It is steam-

heated, has running water and electric lights and makes a nice work room in cold weather.

I have had but little trouble with horses and do not think anyone need be deterred from getting an automobile on that account, provided that he is willing to exercise proper care and a little judgment while on the road. If I meet a horse that shows signs of fright I make it a rule to stop at once, and if necessary I lead the horse by and thus have obtained the good will of many drivers.

Two Hundred and Twenty-five Dollars a Year Expense.

As the operating expense is to the most of us an important consideration, I hereby append my full account for repairs and gasoline for the four years, during which I figure my mileage at something over 16,000.

The first year my repairs and new parts amounted to $36.60; second year, $46.07; third year, $27.30; fourth year, $11.04, making a total of $121.01. Add to this for retouching, paint and varnish three times, $26.42, makes a total of $147.43. For new tires I have paid $110.70 and for tire repairs $20.25, making a total tire bill of $130.95, making a total for repairs and tire expenses of $278.38.

The amount paid for gasoline for the four years was $207.52, and for oil $3.75, making the total cost for all operating expenses for four years of $489.65, an average of $122.41 for each year.

This is the debit side. To offset this the machine has saved me the board and care of two horses for twenty-two or twenty-three weeks each year. Ten dollars per week is certainly a conservative estimate of the cost of board, care and repair of equipment for two horses, or an average of $225 a year. Deducting from this the cost of operating the machine, leaves a net saving in favor of the auto of a little over $100 per year. It has also saved considerable in railroad fares, and the amount of enjoyment it has afforded I can not compute.

I am still looking for the ideal doctor's car, and as there seem to be many minds on the subject, will briefly give my idea of what it should embody. I think it will be a gasoline machine of four cylinders, 12 to 15 H. P., air-cooled motor, long wheel base, solid rear axle, and most important of all, have wheels at least 40 inches, with solid tires. It should not weigh over 1,200 pounds, and the cost ought not to exceed $600. Such a car, if honestly built, will be a boon to the country physician, and with it he ought to be independent of horses all the year round, except perhaps in the deepest snows. After nearly five years' experience with small wheels and pneumatic tires, I predict that the car of the near future will be equipped with large wheels and solid tires.

I hope that none of my readers who are thinking of discarding the horse and taking up the automobile will be too much influenced by my experience. My advice to such is that unless they have had a mechanical training, or a natural taste for machinery, it would be well to get with the car they purchase, of whatever kind, a written guarantee that it will afford all the trouble they want.

TIRES AND ROADS ARE THE CHIEF AUTOMOBILE TROUBLES.

W. A. PUSEY, M.D.
CHICAGO.

My experience with the automobile has extended over five years, and has made me an earnest supporter of it as a means of recreation and as a time saver. When I can use my automobile instead of the cars it converts my traveling about the city from a laborious task to a distinct recreation, so that when I am confronted with an automobile expense account that rather hurts my conscience, I try to console myself that I have had the worth of my money.

The difficulties about automobiling are the initial expense of the machine, the expense of maintenance and roads.

I began automobiling with a large, two-cylinder runabout (129), of the best make, which I used for four years, and I have since used a standard four-cylinder touring car (130). I believe now that neither machine was a good purchase from the standpoint of economy. As far as I can see, a runabout, such as is sold at from $700 to $1,000, would have answered all of my purposes just as well and saved me a good deal of money. For the doctor's use on good roads I believe such runabouts are the best machines, and that his chance of getting satisfactory service out of such machines is quite as good as with the higher-priced machines. He won't get as much speed and he won't get as much style, but he will get all the speed he can use and escape the police, and his machine won't look very stylish after the first year, anyway.

Another Endorsement of Solid Tires.

My expense of maintenance has been high; but with care and intelligent use I think I can see how a runabout could be maintained at an expense of about $100 per annum. The most uncertain factor in expense, as it is in reliability, is tires. I eliminated that four years ago by putting solid tires on my machines; not any of the patent tires, but plain soft rubber tires (131), with a width at the base of 2½ inches and a height of about 2 inches. I had them first on my runabout of about a ton weight, and I have them now on a little heavier touring car, and I wouldn't have any other kind. As far as I can see there is no difference in the way the machines rides and no difference in the wear and tear on the machinery, and none of the other things happen that are urged as objections to solid tires. They are really softer than well-inflated pneumatic tires. I don't know how they would work on small wheels, say 28-inch wheels. Fortunately for my experiment, the wheels of my machines have been 34 and 36 inches in diameter and my machines have been very heavy and strong. I would be afraid to put solid tires on a machine if I had any uncertainty about the strength of the front axle.

Mud a Waterloo for the Auto.

In the use of an automobile you have to consider the roads. Over roads that are solid and even fairly smooth, the automobile is all right, but the ordinary automobile is impracticable in mud or in deep sand. You can pull through mud or sand six inches deep for an indefinite number of miles, but it is a procedure that you don't want to repeat often, and you are liable to get into trouble every time you try it. When it comes to bad country roads in winter time, such roads that you have to let a horse go at a walk in a buggy, the automobile is practically out of consideration. A horse can easily pull a buggy through mud that puts an auto completely out of service. In country practice as I have known it, I am sure most of the trips could be made to good advantage with an automobile during the season of dry roads. From the time the roads get bad in winter until the time they dry up in the spring, I should not expect an automobile to be of any service over dirt roads.

THE MERITS OF THE SINGLE CYLINDER CAR.

J. P. HETHERINGTON, M.D.
LOGANSPORT, IND.

In July, 1903, I purchased my runabout and have used it continuously every day in the year—except when in the paint shop—since that time. I never rode behind my horse since purchasing the machine, and have not owned a horse for over two and a half years, depending on the machine except for an occasional livery horse when the roads are too muddy.

I watch the machine closely, am careful with it, and as a result it has never had a horse hitched to it. It is in use every day in the year, and I find it as reliable as a horse. It is a little more expensive to maintain—counting repairs, garage, etc.—than one horse, but it will do the work of two or three, is swift, tireless and needs less care.

The first two years I kept it in an ordinary livery stable—hot in summer and cold in winter. The last year we have had a garage where it is washed and oiled, but I never allow it to be repaired or to have anything done to it unless I am present. I know its peculiarities, and by watching it closely, it needs few repairs.

Comparison of Single Cylinder Cars and Others.

Being a single cylinder engine it is very simple. A double cylinder runs more nicely, but a four cylinder is still better. If one does not care for complication, the four cylinder would be very desirable. It is about the same with the transmission. The planetary is easier handled, but allows only two forward speeds. The sliding gear or individual clutch gives a third forward speed, which is very desirable. One of my colleagues has a sliding gear. The transmission is completely worn out in less than a year, and his machine is now in the garage useless, waiting for a new transmission that will probably cost more than my repairs for a year, while I am using the same old one. My machine is light, with lower power and lower speed. I can go as fast as any man should on our roads. If I get stuck in the mud or snow I can push it out because it is light. If he gets stuck his is too heavy to get out without help. His power increases wear, uses more gasoline and is more liable to break something. His machine is heavier and harder on tires. My machine, after nearly three years' use, seems to be as good as ever.

In deep sand, snow or mud a machine is almost useless. In shallow sand or mud it pulls hard. Slick mud requires a chain wrapped around the rear tires so they will stick. Shallow, dry snow or dry ice is no impediment. Wet snow or wet slick ice or wet streets make the wheels slip and require care in swift running. Rubber will not stick well to anything wet. I never hesitate to run fast on slick ice if it is dry.

Never Expects to Own Another Horse.

In choosing a machine a physician should, above all else, get one that has an engine that will start promptly in cold weather. Nothing will disgust a man quicker than pumping and wearing himself out on a cold or rainy day trying to start a balky engine. My single cylinder, planetary transmission, tiller-steered, black-colored car (124) has done good service for nearly three years, and will soon be put in the paint shop to prepare for another year. I never expect to own another horse.

THE KIND OF AUTO THE PHYSICIAN NEEDS.

LOUIS LEROY, M.D.
NASHVILLE, TENN.

BEFORE purchasing an auto the first thing to be decided is the use to which it is to be put, for a machine is in a measure a carriage, and it is obvious that a surrey is not calculated to meet the requirements of a man needing a buggy or phaeton. It is therefore presumed that to practice medicine a physician will desire a machine to take the place of a buggy or phaeton. That point being settled, he is at once in a position to exclude any consideration of the heavy and expensive touring cars. As the auto may be used as a pleasure vehicle, there are a number of cars which have been made with a detachable tonneau, which can be attached in a very few minutes, thereby converting a runabout into a car capable of carrying four passengers very satisfactorily, and still not requiring the extra weight to be carried nor the tonneau to be exposed to the inclemency of the weather during the work-a-day use of the machine.

Must Be Kept in Good Order.

I should emphatically advise against any physician buying a car who lived at any distance from a well-equipped repair shop, as the life and satisfactory service of the car depend more on keeping it properly adjusted and "trued up" than on any inherent quality of the mechanism. With the present development an auto will give better and more satisfactory service than horses, at a lower price, provided it is driven with the same degree of care and intelligence, and the more a man has been in the habit of using a whip with his horse the less satisfaction he may hope to enjoy from an auto unless he decides early to change his tactics. The average cost of keeping an auto in this city is $20 each month. That figure will vary according to the amount of use demanded, and of course the current prices of repairs and storage differ much in different locations. In Nashville the most satisfactory arrangement is to pay a moderate amount—$5 a month—for storage, and extra for washing, polishing, oiling, etc., so that the cost is in exact ratio to the service obtained.

Independent of Railroads and Trolleys.

Many prefer to stable the car at home, and there is no doubt that this is better, especially where any amount of night work has to be done, for, with a gasoline machine, one can be at his destination in about the time required to harness a horse, a feature of some importance, especially in emergency calls. Again, if a man will take the trouble to familiarize himself with his machine, he can very readily dispense with a driver, thereby saving nearly the cost of maintenance. Where the work is more or less scattered and the distances are moderate, a good deal of time can be saved, at least an hour a day, and in a country where the roads are good and the railroad or trolley service only fairly convenient, an auto renders the physician entirely independent of them for consultations or occasional visits up to 15 miles or so.

In the case of the large touring cars, the question of steam or gasoline motors is a debatable one, but for a physician's runabout there seems to me to be no chance for argument. The gasoline motor has every advantage, and the one point of having to wait fifteen minutes sitting around in the cold

Fig. 7.—The comfortable electric.

waiting to "get up steam" before being able to start on a night call is in itself prohibitive, not to mention about double the consumption of gasoline when it is used as a fuel or the danger from fire when gasoline is confined under pressure in the neighborhood of a flame.

With heavy cars, say 1,800 pounds and over, the sliding gear type of transmission with three speeds forward gives the only satisfactory means of transmitting the power to the driving mechanism, but a good type of planetary transmission is far more convenient to manipulate, and as made now by several of the good manufacturers, wears as well, if not better than the sliding gear, especially in cars of about 1,200 or 1,400 pounds weight.

Water-Cooled Cars Are Best.

A water-cooled car is superior to the air-cooled system, as since the discovery of the value of wood alcohol as antifreezing mixture, there is no danger of trouble from any degree of cold, and there is no doubt that machinery will wear better at a temperature of 200 F. or less than it will at 400 F. or over, as is sometimes reached by the air-cooled type. With tire chains to prevent skidding in the mud and 10 per cent. wood alcohol and 10 per cent. glycerin to prevent freezing, a motor car is a practical proposition over any road or climate that a horse and buggy can travel.

THE AUTO SUPERIOR TO THE FINEST BLUE-GRASS STEED.

CHARLES MOIR, M.D.
LOUISVILLE, KY.

FOR two years I have been using an automobile, and my opinion of the difference in the two methods of getting to my patients is best described in the following sentence: If some one were to make me a present of one of the finest horses in our blue-grass state; add to that one of the finest vehicles that could be built; and then add a promise to maintain the outfit on condition that I use it in preference to my automobile, I would certainly refuse it.

Why the Auto Is Superior.

My reasons for this extreme preference are:

1. *The Rapidity of Getting Around.*—I can see more patients in one-third the time and devote more time at the bedside of my patients than I could when using a horse and buggy. I also get more time at home for study and for enjoying the home comforts.

2. *Cost of Maintenance.*—This is less than for the horse. The day is never too cold nor too hot, and no degree of inclement weather ever stirs up that humane spirit for an auto that would naturally appeal to anyone in the use of the

Fig. 8.—A Pacific coast surgeon's car, with characteristic scenery in the background.

horse. So I never think of street cars or calling carriages in bad weather, but make my machine take me around. So by using my auto all the time, keeping it in good order and not waiting until it is almost ready to quit running before having it attended to, the cost to me has not been over one-half that of the horse.

Guyed by the Madding Crowd.

The first two months that I used my machine (I had scarcely any trouble at all after that time) parts of the mechanism would need adjusting. I would depend on the experts to do all this, but often these parts would get out of order while running along the street. When you stop to fix anything about an auto it always attracts a crowd, and I seemed to be a special target for remarks about like this: "What's the matter, Mister?" "Won't she run?" "Your trolley's off," etc. I thought the vocabulary of forceful and expressive language ought to be rewritten for me to express my opinions of autos and of the crowd. Then I would have to wait for a specialist to come and get me started. This, of course, added to the cost of keeping up the machine.

P. G. Course on the Auto-Cadaver.

In desperation I came to the conclusion that the fault was largely with me. I did not know the working of the machine so I bought a pair of blue overalls, put on an old coat and made a thorough dissection of it; result: no more street scenes, as I can get it started now before the crowd gets around; and, as for the vocabulary of interjaculatory speech, I do not need it re-written, and am now going to teach a Sunday school class.

The Saving Effected by Learning the Mechanism.

The expense of running my machine has been about one-half that of the horse. When using a horse and buggy the cost of maintenance was $30 to $32 a month. The cost of maintenance for my auto has averaged $19 a month since I learned how to keep my machine in repair. This includes gasoline, repairs, tires, etc. Before that time I used up $50 of $60 a month. I use a light, two-passenger gasoline runabout car (145), 4½ horsepower, single engine, top and full storm protectors. Its cost was $700, complete.

3. *Pleasure.*—After a hard day's work, particularly in the summer, my wife and I take a spin to some of our beautiful parks. We return refreshed and ready for a good night's sleep.

In conclusion, let me advise all of my medical friends who are having trouble with their autos to make a thorough dissection of them, and, as has been my experience, they will find most of the trouble in the nervous system, or, in other words, in the electrical supply.

As the English king said: "A horse! A horse! My kingdom for a horse!" I say, "An auto! An auto! My kingdom for an auto!"

STATISTICS ON AUTO, HORSE AND PULSE.

CHARLES P. SYLVESTER, M.D.
DORCHESTER, MASS.

WISHING to be able to compare accurately the expense of my machine (170) with that of my horse and two carriages, I entered in their respective diaries every cent expended, either directly or indirectly, on them. For instance, on May 1, 1904, the first day on which I drove the machine, two punctures and several secondary hemorrhages from the wounds, necessitated its detention over night in a roadside hospital several miles from home, at which latter place I arrived at 10 p. m., weary and footsore and experienced. One dollar for dinners by the wayside and 10 cents car fares were charged that day against the auto.

An Exact Cash Account.

Such entries as the following will give an idea of the completeness of the comparison: Auto hat, coat and gloves, $11; license and registration, $4; loss of eyeglasses while raising a 30 mile breeze in the woods, $5.25; gasoline, $1; repair of bicycle which ran into me, $2.50 (several) dogs which tried a similar blackmailing scheme were repaired by me without expense). So the items were entered until, at the end of seven months, when I stored it for the winter, the total amount was $121.65. I deducted from this amount $10 which which was paid me by a patient for a 25-mile ambulance service to a hospital.

As this is one of the uses to which one can sometimes put his machine, when he could not his horse, it seems fair to deduct the amount, leaving a balance of $111.65.

There were sixteen weeks in the summer when the auto was stored in my own stable; so to make the comparison fair, we will add $48, making $159.65. The care of the machine during the sixteen weeks is already included in the $111.65.

Now, for the same seven months, with my bay pacer, Red Devil; his board and lodging bill each week was $6 half the time and $7 the other half.

In this account appear: Repair of check-rain, 65 cents; cooler, $4; sugar, 8 cents; veterinary fee for colic, $3; gin, 50 cents; hire for another horse, $3; shoeing, $4; repairs on horse and carriage out of commission ten days as a result of steamrollerphobia, $8.35 (and the patient to whom I was hurrying at the time moved away without paying his bill).

Saves Money By Auto.

The total for the seven months amounted to $268.10. As with the auto, there is one credit both the account and to

the horse—$8 for winning second money in Hull Old Home Week free-for-all ($50 which I lost backing him for first place is not entered).

Therefore, my auto cost me for first seven months just $100.45 less than my horse.

My machine was stored in my own stable during the winter at no expense. I could have stored my horse there, but it would have cost at least $3.50 a week for his board and care, which illustrates the fact that one does not have to feed or exercise a machine unless disposed to.

The total expense for the auto for the same period the following year was $173.80, or $52.15 more than the previous season, $25 of which was paid for painting. The tire bill was about $6 more, while the only repair bill on the machine was $20 for a very thorough overhauling in the spring; $2 for repairing chain, which broke on two different occasions, and $6.25 for pump. Excluding the painting and overhauling, my expenses were less than the first year.

My car received plenty of exercise, for during the summer months I use it between my Boston and Hull offices, 23 miles each way, doing about 7,000 miles in the two years. Although I had no pedometer on my horse, it is safe to say that he made no such record.

Excepting the chain and pump and an occasional tire, I had no troubles, except with the police. They were very lenient, or my expense would have been higher.

The sale of my equine outfit was a natural sequence of the above experience; therefore I can figure approximately the depreciation. The original cost of each outfit was about the same. The horse and carriages, after three years' use, sold year. Add to this $484 which it cost me annually to keep the same, and the expense yearly is $600.

An $800 auto would not depreciate over $800 in four years, or $200 a year. Add to this what it has averaged me for twelve months, $240, and we have $440 for an auto against $600 for a horse. Now, if you should compare the cost per working mile, which should be considered in order to make the comparison really scientific, the result must be greatly in favor of the automobile.

I also have had a similariy pleasant three months' experience with an electric runabout in my city work, and only gave it up, because, on lung runs, it would not answer the purpose.

Effects of Motoring on Pulse and Health.

Now, let me end this paper with an interesting observation on my pulse. Believing that automobiling is a transition from the simple life to the pace that kills, I recorded my pulse on several of my first and fast long drives, being careful not to inflate my tires or to crank my machine before starting. The result was always an increase of about six in the number of beats per minute, with an increase in the tension. In a few weeks the pulse remained at the high level and not until the end of a midwinter vacation did it return to normal.

Increased exercise might have been the cause, but in my mind it was due to a chauffeur's responsibilities regarding the police, public and passengers, order reversed. (The public's pulse probably went higher.) This may be a form of auto-intoxication which we should bear in mind in examining our patients.

Therefore, if the danger and expense to health, traumatic or otherwise, could be carefully figured and itemized, the complete comparison between horse and auto might pretty nearly agree with the law of physics, that action and reaction are opposite in direction.

NINE MONTHS FOR SIXTY DOLLARS WITH A FIVE-HUNDRED-DOLLAR AUTOMOBILE.

EUGENE F. TALBOTT, M.D.
GRINNELL, IOWA.

In 1899 I purchased a light steam runabout (126). After about three months' use, at an expense of $100 a month, I put the thing away. It was so very unreliable that I will not inflict on you any of my experience in that busy three months—not busy attending the sick, for the auto took first attention and a great deal of it. Well, the auto died, and now is buried in my memory, although it haunts me still.

Used Up One Pneumatic Tire Each Month.

The dose, however, was very effective in curing me of motorphilia, and I remained cured until the spring of 1905, when I purchased a gasoline runabout (127), single cylinder, at an expense of $500. My engine is water cooled and in winter I use a solution of glycerin, wood alcohol and water and have no trouble. After nine months' use of the auto, I would not be without one, although the expense is more than keeping a horse. My car had single-tube tires. I know better now. My car used up six tires in as many months, which made it necessary for me to quit either pneumatics or automobiling, as a business proposition. I quit pneumatics and put on a popular solid tire and after three months' use I can say I wouldn't have anything else. With full elliptical springs the car will ride as easily as pneumatics. The only difference I am aware of is that in turning a corner the car will skid more if going fast. In mud roads, as we have in Iowa, the pneumatic tire is too wide to go into the rut made by wagon wheels, and the solid, being narrow, will go in same rut, a very great advantage in rough and frozen roads. The satisfaction of knowing that when you start on a trip you are going

Fig. 9.—With storm apron, this gives protection from weather.

to get back without having to stop and repair a tire makes riding a pleasure.

During the nine months I have used my auto all the time with the exception of about thirty days. The mud of summer has not stopped me, but when we had 18 inches of snow I quit, although in a foot of snow I went along nicely. Again, when after muddy roads the ground was frozen, I had to wait until the roads were smoothed down some.

The only accident I have had of any importance was in breaking my rear axle, but let me add that this occurred when I had pneumatic tires.

Great Pleasure to Oil Up the Machine.

My wife and I took a 300-mile trip last summer and got home without the least accident or break. The gasoline used on this trip was 12 gallons. I keep my machine in my barn and care for it myself, and nothing gives me such pleasure and rest of mind as an hour spent in the morning oiling and looking over the rig.

Tires Are Chief Expense.

Now, as to my expense. My repair bill, which included the new axle, amounted to $25.65. The gasoline expense I do not know, but as one gallon would, on good roads, take me 28 miles, that expense was light. The tire expense is much with pneumatics. My expense for season was $179.33, which included a new set of solid tires, but the solids are nearly

new, and that expense should not all be charged up to one season's expense. My machine is now second-hand in name, but as for as use goes, is good for several seasons. If I had put on a solid tire when machine was purchased, my total expense for running nine months would not have exceeded $60.

PLEASURE AND CONVENIENCE IN CARING FOR ONE'S OWN AUTOMOBILE.

S. S. CROCKETT, M.D.
NASHVILLE, TENN.

PREVIOUS to Aug. 1, 1903, I kept two horses, one carriage and two buggies, at an investment of about $1,300. The fixed monthly livery charge for keeping the horses and vehicles, including shoeing, was $35. The expense for replacing the horses and vehicles and repairs on vehicles is difficult to determine.

Aug. 1, 1903, I sold my horses and bought a four-seated automobile (167) for $850, which I used continuously in my work for two years, going during that time a road distance of 14,000 miles, at a total average monthly cost of about $30. Aug. 1, 1905, I sold my old car and bought a new two-seated one of the same make at a loss of $375.

Fig. 10.—A southern physician under very favorable conditions.

My second car has now been on the road continuously since Aug. 1, 1905, and has cost me less than $10 on shop repairs; $45 for new tires; $5 a month for gasoline; $2 a month for lubricating oil; $7.50 a month for housing and washing.

It can be readily seen that if used continuously a car will cost more than one horse and buggy, but less than a pair of horses.

Occasionally Hires a Horse.

I find that in active work it is necessary to hire a horse for a part of a day about once each month because of some small derangement that I have not the time to fix. I find it not only more satisfactory, but entertaining and diverting, to adjust and to oil the car myself. This is usually done at night when I take my car to the barn, and usually consumes about one hour one day in the week and fifteen minutes during each of the other six days. I find it a great satisfaction to spend a few minutes going over the car each night and seeing that it is supplied with water, gasoline and oil, and that the spark plug is clean and in working order. In that way I start out in the morning free from apprehension. I take my car out in the morning by 8 o'clock, and it does not go back to the barn until I finish my work at night. It stands at my door during my office and meal hours, it does not have to be sent to the stable to be fed and requires no time for rest

Does His Work in Half the Time.

I am able to do my work in about one-half the time I used to consume, and during that time I am absolutely devoid of any sympathy for an overworked and hungry team.

Of course I have troubles; but, as I save half my time, I can put up with that. Any man with average intelligence who applies himself to studying the way the machine should be cared for, can soon learn to remedy ordinary road defects.

Machinery will break, it will get so dirty that it will not work, and it will wear out, and an auto is no exception to the rule. I have been pulled in by another machine only once in the past year—during a travel of about 7,000 miles.

THE MOST SATISFACTORY INVESTMENT FOR THE COUNTRY PHYSICIAN.

HARRY P. ENGLE, M.D.
NEWTON, IOWA.

WHEN I purchased an automobile three years ago I had had no experience with machinery of any kind, knew practically nothing concerning the principles of a gas engine and did not know a float feed carburetor from a commutator or a compression chamber from a planetary gear.

The Sorrows of the Novice.

Soon after signing a check giving me the sole right to own, control and operate this red devil, I proceeded to exhibit my ignorance by filling the gasoline tank with water and found the result extremely disappointing. One drop of aqua pura, in a float feed carburetor, can certainly dampen all the energy in a gas engine, but when I had made a diagnosis of the difficulty, I thanked my guardian angels that I had not come to an untimely end by filling the water tank with gasoline.

The things that I did not know about an automobile were certainly voluminous, but the one thing I did know was that if I ever expected to make the complicated affair go for any length of time I must learn its anatomy as well as I once knew the points of interest on the petrous portion of the temporal bone. And so, after subscribing for a great number of automobile journals, reading every book I could get concerning a gas engine and separating the machine into so many pieces that I would doubt my ability ever to get it together again, I have found that the little difficulties that are sure to arise are easily taken care of and that this purchase has been the most satisfactory one I have ever made.

The Pleasures of the Experienced Autoist.

My three years' experience in a motor car has been with a single-cylinder, 9-horsepower, water-cooled gasoline machine (168). I have taken care of it myself and have had very little experience with repair men; in fact, I do not look on them with much favor. I have averaged over 3,000 miles each year and have found the cost of driving a motor car to be less than keeping a team, and the comfort, convenience and pleasure place the automobile so far ahead that I never expect to own another horse. I have driven the machine at all times of the year, over all kinds of roads, and never have found a hill that caused any trouble in climbing. With the patent chain tire grips for mud and ice, calcium chlorid for zero temperature you can always be sure of getting back home.

After driving the car about six months I sold my horses, but when the roads are very bad I depend on the livery, preferring, as I did when I owned a team, to drive the livery horses over the worst roads. Mrs. Engle is also an automobile enthusiast and handles the car with perfect ease, starting the engine without difficulty, and I feel sure that everything will be all right when she is out driving.

Tires Cause Ninety-five Per Cent. of Trouble.

Ninety-five per cent. of all my trouble has been with the pneumatic tires, using the first year the single tube pneumatic tires, which were an abomination. Now I have the double tube clincher, which gives very much less trouble, but a medical friend tells me that he has completely solved this difficulty by putting the solid rubber on his machine, and I know there is no difference in the way his car rides, and he

informs me that the solid tires do not (as is claimed by the pneumatic people) jar the machine to pieces; they eliminate all tire trouble; so I have concluded to try them when in need of new tires.

Steam Cars Not to Be Seriously Considered.

For country use, over Iowa roads, the steam and electric machines should be mentioned only to be dismissed, and if I should buy another car it would be a gasoline machine, with multiple cylinder, abundant horsepower, larger wheels than the 28x3 I now have and probably solid tires. Recently I have had my car completely overhauled and only two worn parts were found, which were easily replaced at a cost of less than $2. It is as reliable as ever, and I see no reason why it can not be used for many years yet; but, if like the old "one hoss shay," it falls to pieces on the next trip I will feel that, in its three years of reliable service, I have been amply repaid for its purchase price, and, as I said, it is the most satisfactory investment I have ever made.

THE AUTO IN A MUDDY COUNTRY.

E. F. COOKE, M.D.
FORRESTON, TEXAS.

WHEN it rains in a black-waxy-soiled country such as this, the mud is sticky, and when dry the roads are first very rough and then later become splendid until another rain. Last August I purchased a second-hand runabout (137), which had been fitted with a steering wheel instead of the regular tiller. I have had a great deal of trouble, but I still believe in the auto for our use. I put my troubles down as being due to two factors: 1. The greatest was my absolute ignorance of what an automobile really is and errors made in consequence wrought damage to the machine and kept me in hot water. 2. I bought a second-hand machine and had to learn all its weak points at once. It is certainly a most fascinating way of getting around. It saves a good deal of the doctor's time and permits hours of sleep and study that would otherwise be spent on the roads.

Be Your Own Repair Man.

I believe that pneumatic tires are superior to any form of solid or semi-solid tire. One ought to be able and willing to work, as many small repairs are constantly necessary, such as tightening bolts and making other adjustments. These machines will pull through most mud, but sometimes it is necessary to give the driving wheels a grip by using chains or winding a rope around the tire. There is some danger, of course, as a man will travel just as fast as his machine will go and then want to buy a faster machine, but I feel fully as safe in mine as I do behind a horse. No matter what make one buys, it is just as well, if he is in a country practice, for him also to keep a horse.

THE AUTO A SPLENDID FINANCIAL PROPOSITION FOR THE PHYSICIAN.

H. COOPER, M.D.
AMESBURY, MASS.

AS an ordinary country physician for twenty years, I have sometimes owned one horse, sometimes two. The question of the horses eating their heads off was a cause of much study. In the evolution of time the bicycle appeared. I mastered it with the idea of getting rid of one horse. This innovation was an advantage in two ways—personally and financially.

What Horses Cost.

The cheapest method per annum with a horse was $350, which included board and care at a stable, shoeing, taxes, insurance, repairs and the natural depreciation. To add another horse would mean another expense of $250, without considering the depreciation, making a yearly expense of $600 for the one item of transportation from one patient to another. The items of pleasure and recreation do not enter into this computation. All work and no play make a tiresome existence for the physician, and death comes to us altogether too quickly, to say nothing about inviting it by too close application to the ills and woes of our patients.

I have found a way to stave off the Reaper, to enjoy life, to make hard work pleasant and to render every trip to one's patients, by day or night, a real pleasure.

Twenty Thousand Miles on a Bicycle.

When the bicycle came I bought it instead of another horse and made many visits every day on the wheel. It was undignified in the eyes of some, but what matters the ideas of a few if it was a financial saving, and at the same time it gave the physical exercise necessary to excite the liver and bowels into activity, so that those ever troublesome headaches and bad tasting mouth were gone forever.

While I was pedaling over 20,000 miles with much pleasure—to say nothing of improved health and enlarged pocket-book—the automobile was being perfected. In 1902 I sold my team, gave my bicycle away, and bought a runabout (148) of 4½ horsepower. I soon found that I had from three to five more hours each day—for more work or for more recreation.

Fig. 11.—A rolling auto gathers much mud—in Iowa.

Cheap Cost of Maintaining Auto.

I used this faithful little servant eight months, covering 3,000 miles with less than $5 breakage, and at a saving of $250, as compared with a team. The horse hire, electric car fare for the remaining four months' winter service was about $25. In 1903 I used the same car with another 4,000 miles travel and no greater amount of additional cost. In two years I had covered 7,000 miles at a total cost of $175. including breakage, replacements, painting and varnishing, gasoline, lubricant and tire troubles. I then sold the car for 50 per cent. of the first cost.

There had been so much comfort in my work and pleasure at other times that I contracted the touring-car fever. In the spring of 1904 I bought a 16-horsepower touring car (149), and a 5-horsepower runabout (150), the small car for work near at home and the larger car for long and hard trips, or if I wished to take friends for a pleasure ride. I ran the touring car 9,000 miles in the two seasons of 1904 and 1905 with less than $10 breakage. Three of the original tires are still on the car.

In October, last year, I sent it to the repair shop for the first time, that is, after it had covered 9,000 miles of city and country roads. The repairs and replacements cost $197, the retreading of the three original tires cost $30, and $48 was the cost of the new tire. The car is now in first-class condition for another two seasons' use.

An Excellent Financial Showing.

The cost of gasoline, lubricants and batteries for the touring car was about $100 a year. To recapitulate, I have an expense of $550 for four years' experience of using the auto in my practice, whereas the expense of a team for the same period would have been from $1,400 to $2,400, whether I had one or two horses. Getting left on the road never occurred, neither did the auto refuse to move.

CONVENIENCE OF THE AUTO FOR NIGHT WORK.

WILLIAM C. LEARY, M.D.
SPRINGFIELD, MASS.

MY car was bought ten months ago, a runabout (133) costing $1,300, with double opposed horizontal engine, water-cooled, individual clutch transmission, three speeds forward and reverse, throttle and spark lever control, folding front seat and victoria top. During that time I have

Fig. 12.—A Connecticut physician and his faithful steed.

driven it every day through snow or mud over city and country roads and, while it has done the work of two horses, my expense account, accurately kept, shows that the cost has been little greater than the keeping of one horse.

Ten Months at $28.50 a Month.

I figure the cost of each horse at $25 a month—a conservative estimate, since I never paid less than $22, sometimes $24, for board, while the bill for shoeing would easily bring the total up to $25 a month. The cost of driving my car 6,020 miles has been:

Oil and gasoline	$ 62.18
Repairs	40.39
Tires	127.70
Barn rent, washing, etc.	54.75
Total	$285.02

Auto Ready for Night Calls in Three Minutes.

While this cost has averaged but $3.50 a month more than one horse, the great value of the auto lies in the celerity with which regular and emergency calls can be made, thereby saving from two to three hours each day. To the busy practitioner whose time for study or recreation is very limited, this is of inestimable value. At night there is practically no delay, the only preparation necessary consists of lighting the lamps. The livery stables here will not deliver horses after 9 p. m., and often after I had telephoned to have my horse ready it would not be hitched up when I arived there some *fifteen* minutes later. To walk to the barn and return with the auto takes *three* minutes.

His Car Always Brings Him Home.

I rent a barn a short distance from my office and personally see that the oiler is working properly and there is a good supply of gasoline. The tank holds six gallons and the running averages in the city 13½ miles to the gallon; in the surrounding smaller towns, where speed regulations are not so stringent, 18 miles. Each morning I also inspect the motor attachments, springs, steering and running gears and to this I ascribe much of my success. I have never met with an accident, except tire punctures, and my car has always brought me home.

No Dismounting To Crank.

Another feature, my car is started and operated from the seat, thereby insuring as much pleasure driving on muddy streets or stormy days as in pleasant weather.

My idea of a physicians' car is one of at least two cylinders, all parts easily accessible, 15 to 20 horse power, sliding gear transmission, shaft drive, started and operated from the seat.

Pay Enough to Get a Good Car.

I would advise paying a good price in order to get a reliable car. A few hundred dollars may save many vexatious delays and much religion.

After nearly one year's experience with a car I shall never use horses again. If handled carefully, and given proper attention, the auto is the ideal vehicle for a physician.

THE PHYSICIAN AND THE AUTOMOBILE MUTUALLY ADAPTED TO EACH OTHER'S NEEDS.

AMOS AVERY, M.D.
SAPULPA, IND. TER.

I THINK that the automobile is just the vehicle for the physician and that he is just the man for the auto.

A physician is generally a man who has an idea of the natural order of things, what results to expect and how to get results. The every-day training of his powers of observation are such as to help him greatly in caring for and in running an automobile. For these reasons I think that he is just the man for the auto. This is fortunate, for he is the very one who needs transportation on very short notice and in the shortest possible time when hurry calls come in. Time spent on the road is but lost time. Cutting this down one-third or one-half makes it possible for him to do just so much more business.

How to Crank When Crank Is Lost.

I first commenced using an automobile in my practice, in 1904, when I got a light single-cylinder runabout of the buckboard pattern (158). I was then living in eastern Connecticut, where the roads are very hilly, and though the machine was of small horsepower I never failed to make any of the hills in the county. I had the usual run of small accidents, misunderstandings that fill the experience of a beginner. One day an axle broke, but in a few days another was put in its place. At another time I lost my starting crank when 15 miles from home. I managed to get started again by pulling on a small rope that I wound around a pulley that was attached to the protruding end of the engine

shaft. Again, I pushed the car (it weighed only 500 pounds) to the brow of a small hill, and then getting aboard, after sufficient momentum was attained, the clutch was thrown in and the motor started thereby.

I attended to most of the small repairs myself, and in that way I knew daily just the condition of the machine. I ran the buckboard at times all the following winter, and found it worked admirably, for it was air-cooled and there was no danger of freezing any water-cooling apparatus.

In the spring of 1905 I moved to Tulsa, Ind. Ter., and used the little machine there for about six months. Though there was some very warm weather in that place I found that the atmospheric conditions are better out this way for air cooling than they are in the far east, and I had no trouble to keep the motor cool when the mercury was standing at 100 or over.

Arguments for Air-Cooled Motor.

There are two leading arguments in favor of an air-cooled motor: First, it eliminates the danger of freezing in cold weather; second, it cuts out quite a complicated mechanical arrangement, thus simplifying the mechanism and thereby eliminating quite a number of minor troubles that follow.

The town in which I now live Sapulpa, is not suitable for the use of an automobile, for there are no culverts or bridges, and there are so many loose rubble stones.

The Poetry of Motion.

There are a few points of vital importance to be borne in mind if one wishes to run a motor vehicle successfully. When run successfully, it is the pleasantest means of travel for a physician. As an Irishman put it, "it is the very poetry of motion."

Lubrication must be accurately and carefully attended to. If the compression becomes diminished the valves must be ground. More power is lost by lack of attention to this important detail than by any other thing. It is essential to have a mud apron in wet and muddy weather.

I used single tube tires, and was fortunate enough to have very little trouble with them, and the original tires are still on the machine, though I did have a few punctures.

Total Forty-three Dollars for Eighteen Months' Expense.

My bill of expense for running the machine a year and a half was $43, and this included everything: Gasoline, oil, batteries, spark plugs, tire repair, and every other item of running, maintenance and repair, all are included in the above amount of expense. I do not know the exact number of miles traveled, but it goes into the thousands. The more I use an automobile the more I can see the grand future it has for the busy practitioner, in either his business or his pleasure trips.

If the physician chooses to take care of it himself, I would recommend a runabout of two or more cylinders, with an air-cooled, gasoline motor and with 10 or more horsepower. If in a rainy country he certainly would need also a good top and storm apron. Equipped thus he is in a position to do the work that ordinarily would require at least three horses, and at less expense.

AN INSTRUCTIVE NEW HAMPSHIRE NARRATIVE.

WALLIS D. WALKER, MD.
PORTSMOUTH, N. H.

RELIABILITY is the primary quality necessary in a car to be used by a physician. Speed, power, gears and transmissions, although related, are of secondary importance. The doctor's car must be always ready to take him to a patient and back without mishap, at all hours of the day and in any condition of weather and roads.

Between this ideal and the actual car in use to-day there is a gap, and the extent of this gap depends largely on two factors: First, and most important, the personal equation as manifested in the care, use and abuse of a car; second, the judgment shown in the primary selection.

The Auto Needs an Intelligent Owner.

By the personal equation, I mean a man's ability to deal intelligently with the small adjustments necessary to the best working of the highly differentiated mechanism of an automobile, to keep his tank supplied with gasoline, his cylinders with oil and his radiator with water. A man without some love of machinery should leave an automobile alone, for the present at least, until he can afford to hire a mechanic.

The ideal automobile for the physician should combine as many of the following points as possible: A four-cycle engine, of either two or four cylinders, placed forward under a hood; cylinders water cooled; sliding gear transmission, with three speeds forward; shaft drive, geared direct to axle; developing no less than 16 H. P. The combination of these five points, in my experience, makes the most reliable, satisfactory and economical car.

The Engine.—The future must decide between the relative merits of the four-cycle and the two-cycle engine. At the present stage of motor development, the four-cycle has outstripped the two-cycle in general use. A single-cylinder motor is not sufficiently powerful, and the vibration is objectionable. Two cylinders of sufficient size will develop ample power, and if opposed and properly balanced, will produce a smoothly running engine. A four-cylinder motor has little advantage over a good double opposed, and must be more bothersome. The engine must be accessible for inspection, cleaning and adjustment. Engines hung under the body do not fulfill this requirement.

Fig. 13.—Comfort and convenience in New England.

Chooses Water-Cooled Motor.

Cooling.—Although cylinders can be successfully cooled by air, and although the absence of water during cold weather is a convenience, I choose a water-cooled motor, partly because of the deleterious effect of the high temperature of air-cooled cylinders on the exhaust valves and spark plug, and partly because I believe that the evener temperature of the water-cooled cylinder gives better efficiency. Two parts of wood alcohol to three of water will not freeze in the ordinary New England winter.

Transmission.—I have had no experience with friction drives. For runabouts of a thousand pounds' weight, and not over 10 horsepower, the planetary type is satisfactory, but for the heavier and the higher powered cars, I consider the sliding gear transmission essential. The friction bands of the planetary drums wear continually, and must be adjusted, and few transmissions of this type provide for more than two speeds forward. Sliding gears wear little and are absolutely positive. Three speeds forward is the rule on most well-built models.

The Drive.—Chains can not be kept clean or well oiled. Chains have not yet been made that will not stretch and require adjustment. So I prefer the shaft-driven car. Moreover, cars driven by single chains usually have the engines hung under the body, which is objectionable.

Fig. 14.—The touring car used by a physician in Evanston, Ill.

Power.—For the city physician, with good roads and no bad hills, 10 horsepower would perhaps be sufficient, but for country roads, up hill and down dale, in slush, mud, and sand, there is no hope for satisfaction in anything less than 16 horsepower. It is very trying, when in a hurry, to worry through a stretch of sand or mud on low gear for want of sufficient power to keep on the high, and I have heard many men denounce their cars as unsatisfactory merely because of the failure of an 8-horsepower engine to do the work of 16 or 20 horsepower.

Factors to Remember in Comparisons with Horses

Expense.—There have been many comparisons drawn between the horse and the car as to practicability, reliability, expense and what not. Unless the factors entering into such a comparison be equal, no just conclusion can be drawn. One man feeds his own horse, curries him, beds him down. Perhaps he raises enough hay back of the house to keep him half a year. Another man hired a coachman to do these things. The cost to the first man is infinitely less than to the second, though, perhaps, the horses do equal work. It is the same with a motor car. The actual cost of gasoline and oil can be kept as low as a cent and a half a mile, but it is the repairs, due to careless handling, the garage charges, the outside labor spent on adjustments, that bring up the running expenses. Taking into consideration the first cost of a good car and the rapid decrease in sale value, a man will spend more actual cash on an automobile than on a horse. Leaving out the original investment for the moment, I doubt if the running expenses of a car, driven by a competent person, will exceed the expenses of a horse-drawn vehicle, while the mileage will be vastly in favor of the machine.

When I have used a horse, I have hired one at $11 a week, everything included. The monthly expense of maintenance of my auto (16 3), including care, repairs, gasoline, oil and acetylene gas for searchlight, is approximately as follows:

Gasoline, 30 gals., at 20c.	$6.00
Oil and grease	1.30
Repairs and replacements	5.00
Total	$10.30

Care of the machine is not included in this. If one keeps the car in his own stable this item is practically nil. If the car is boarded at a garage the price will vary from $8 to $15 a month.

Delays Are Few.

Reliability.—I have come to consider the chance of serious delay with my runabout as no more than equal to the chance of delay on a well-managed electric road. From February 26 to December 31, last year, I was not delayed ten minutes at any one time, and that with a total mileage of over 4,000. I was, however, exceptionally free from tire troubles, experiencing only one puncture. I attribute my freedom from delay largely to the fact that I made a point of knowing that the car was always in the best of running order before taking it out. A man must know his car thoroughly and must treat it, not as an automatic contrivance that needs only to be run, but as a complicated and delicately adjusted piece of machinery that requires constant care and attention.

There is no doubt that the automobile is a practical conveyance at all times and under all conditions, except in the deepest snow. During the winter of 1903-1904 my car was laid up about six weeks. In 1904-1905, one month at a stretch, I could not conveniently use the machine. During this last winter, there have been only two weeks when I could not run, though this present heavy snow will keep the car housed for ten days more besides. At all other times my machine has been ready and able to do my work.

THE AUTOMOBILE SOLVES THE TRANSPORTATION PROBLEM.

W. H. CURTIS, M.D.
WILMINGTON, ILL.

WITH a year's experience, I should say that under ordinary conditions the automobile is not only practicable, but eminently satisfactory for country use for approximately ten months in the year, while for city usage it is "always in season." Its utility depends now not so much on structural defects in the machine itself, which have been largely eliminated, but mainly on the condition of the road.

No Machine Made Will Go Well in Bad Roads.

In my opinion, no power machine yet invented or to be invented can by any possibility make transportation an unalloyed pleasure over our badly constructed and illy cared for country turnpikes at certain seasons of the year. While machines of the type I use will go wherever a horse can and sometimes where they can not, it must be at the expense of an amount of power by both machine and driver that inclines the balance in favor of the horse-drawn vehicle. In my locality, however, these conditions are ordinarily of but limited duration.

Fig. 15.—A New York doctor's handy conveyance.

Given ordinary dirt or gravel roads, one's time spent on the road is cut down one-half or three-fourths, which increases one's earning capacity to an equal extent, while at the same time one's physical discomforts are reduced to a minimum—for I consider my machine the easiest riding vehicle I was ever in.

The machine I use (135) has wheels 44 and 48 inches in diameter, respectively, with solid rubber tires, and differs in no important particular from the ordinary carriage wheel, which is the evolution of many years of experiment. Power is

supplied by a double opposed air-cooled engine, developing 10-horsepower, which is transmitted to the wheels by means of wire and hemp cables, thus doing away with unreliable and breakable transmission gears and greatly simplifying mechanism. It is effectively and easily controlled by two simple hand levers, which permit of no confusion and consequent mistakes. It will run 30 miles an hour; I ordinarily drive it at from 15 to 20, which is rapid enough for me.

Runs Up Hill Like a Scared Rabbit.

It will run up hill like a scared rabbit—and, in short do anything demanded of it except talk Russian. I care for my own machine and find it a very small burden, rather pleasurable than otherwise; for this reason I think I can say my machine, after a year's hard work, is now in better shape than when it came from the shop, for it has now "found itself"—a term any sailor or mechanic will understand.

Any new beginner will have troubles; mine have been slight and mostly of my own making and not the fault of the machine. I think my auto leaves very little to be desired as a means of transportation for the physician.

My machine cost $650. Monthly expenses have been nil, with the exception of cost of gasoline—about $4 a month. The only repairs I have had to purchase was a broken change gear (of a weak and obsolete pattern not now used), $15. My expenses for maintenance of a span of horses has for many years averaged me $650.

GREATER ECONOMY AND BETTER SERVICE WITH THE AUTO.

A. C. MAGILL, M.D.
PITTSBURG, PA.

My first car (159) was bought six years ago, and I believe that I was one of the first physicians in America to adopt the automobile exclusively in making professional calls. In this 5-horsepower car I traveled 16,000 miles, mostly over the worst roads in western Pennsylvania. My expense was somewhat less than half what a horse-drawn vehicle would have cost for the same mileage, as I found it a simple matter to keep my car at my own garage. With a little care in operating it the adjustments were very few, and I could take care of them myself. It was very seldom that I did not have the car in daily service.

Fig. 16.—Ten horse and one dog power.

After using this car for three years I decided to purchase a later model of 8 horsepower, with a low-compression, high-speeded motor, which I believe is the most serviceable and economical. This car (160) I am using at present, and have had two years' service out of it, having in that time traveled 14,000 miles; and it is in condition at present to travel as many more.

From my experience with automobiles I am perfectly satisfied that they are more economical and give better service than the horse-drawn vehicle for physicians' use.

THE PHYSICIAN WHO SHOULD NOT PURCHASE AN AUTO.

W. W. BEVERIDGE, M.D.
ASBURY PARK, N. J.

For the last four years I have been using machines in my practice with very good success. Except in the winter months, I have practically abandoned the use of horses for both business and pleasure.

The Careless Physician Can Not Run An Auto.

I am convinced that the utility of the auto for physicians depends almost entirely on the skill of the man who operates the machine. Did you ever meet a physician whose instruments were always out of order when he wanted to use them, whose books were always loaned when he needed them, and whose general equipment was always out of use? If you chance to meet him, advise him not to try the automobile in his practice. Such a man will always have trouble. I believe the unsuccessful owners of machines among physicians are largely of this class. For the successful and economical operation of machines great skill is necessary. Almost all accidents and annoyances on the road are due entirely to negligence, ignorance or bad management on the part of the operator.

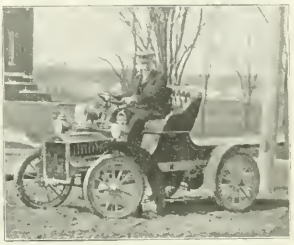


Fig. 17.—An automobile used in the southwest.

Begin with a Simple Machine.

The choice of the machine, to my mind, is a matter of secondary importance. Any good machine will do good work, and, I believe, will be very satisfactory in the hands of a skillful man. While passing this part of the subject, however, I would say in a general way that in point of economy, the lower powered cars will give more satisfaction, less trouble and are the cars that all beginners should use at first. But, of course, in a hilly country, or where the roads are heavy only a very powerful machine will do at all. It is also a great advantage to have a machine that is made near home, as new parts can be obtained more quickly, and at far less expense. Compound engines are never easily mastered by one who is not familiar with the single-cylinder engine.

Auto the Most Useful Thing in Doctor's Whole Equipment.

In putting so much emphasis on the skill of the owner in operating his machine, I do not wish to be understood to speak disparagingly to the prospective purchaser, for requisite knowledge to run a machine successfully can easily be acquired, and is really one of the easiest attainments that the physician can reach. Remember, that it took you three or four years to become a doctor, and at that time your trouble just began. What seemed very difficult or impossible to do at that time is perhaps very easy for you now. So do not imagine you are a chauffeur the first few months you own and operate a machine. Perhaps years of experience have made the art of healing easy for you; so, too, months of experience will make you proficient in handling what should be the most useful thing in your entire equipment.

Success Depends on the Operator.

When we read of some skillful operation performed by some noted surgeon, we do not stop to inquire what kind of knife was used or who the manufacturer of it was. The chances are that the surgeon himself did not know who made the instruments; and possibly they were not of his selection. The same implements in the hands of the unskillful would fall in ill-repute, and the surgical triumph would not be achieved I believe that if these facts are always borne in mind, the physician will always speak a good word for the automobile.

I have used a steam car (146) and three runabouts (147), mostly for business. Last year I think it cost me about $50 for gasoline and oil; for repairs and new parts perhaps $40. I use my machine for pleasure and side trips as well as for business, and the expenses of these trips are perhaps more than the actual cost of the machines while at work.

I feel like recommending here a certain heavy oil (156), a crude petroleum, which, when filtered through a felt hat, is the best lubricating oil that I ever used. I gave it a severe test and know its value. The chief point of interest is that it costs $5 a barrel instead of 75 cents a gallon. It is a light oil, although it is called heavy. I buy it from the producer and find it a great saving, for at that price one can use oil freely, and that is the life of the machine. I keep my horses and machine together in the same stable, and the same man cares for and drives both, so another item of expense is combined. My stable and man cost perhaps $1,200 a year.

I would be glad to write further to any one specially interested if I can be of any service to them.

PRESENT LIMITATIONS AND FUTURE POSSIBILITIES.

DEFOREST LAMBERT, M.D.
SALEM, MASS.

SEVERAL years' use of the motor car in all kinds of weather, both summer and winter, have convinced me of certain definite points in regard to its present limitations and future possibilities as a physician's utility vehicle.

Experience with both types has convinced me that for physicians' use the air-cooled engine possesses such great advantages over one cooled by water that the latter need not be considered, any more than steam, for all-the-year-round service.

Fig. 18.—An auto that looks much like a buggy.

Motor Should be Accessible.

For reasons of accessibility, single and double-cylinder engines hung in or under the car body should be discarded in favor of the vertical multi-cylinder type placed in front under a hood. Chain drive, single or double, is noisy, expensive to maintain and dirty, and should give way to enclosed shaft drive through bevel gear to a live rear axle of floating type.

The differential is probably not necessary in its present form, and as many accidents occur which may justly be attributed to its action on slippery roads, a more positive drive is desirable. Such result may be secured by the employment of a screw and friction device at each rear wheel.

For smoothness of action, power and economy a two-stroke engine is far superior to the four-stroke type so commonly used at present, and as soon as the manufacturers sit up and take notice it will become the prevailing style for service cars.

The proportion of engine power to vehicle weight is all important and should be about one-horse power for each fifty pounds. This will allow the change speed gear to be dispensed with if a proper clutch is used which may be slipped for starting and when necessary on hills. The usual means of starting the engine by crank should be displaced or at least supplemented by a mechanism operated from the seat.

Details Desirable in the Ideal Car.

The wheels used at present are much too small and should be at least three feet in diameter; they should be of the pressed-steel double-disc type, and shod with solid rubber tires, for pneumatic tires are worse than useless on a business vehicle intended to replace a horse.

Experience shows that a physician's car should weigh about 1,000 pounds, and have a four-cylinder, two-stroke, air-cooled vertical motor under hood in front, metal-to-metal clutch running in oil, direct-shaft drive, bevel gear, and floating rear axle with wheels driven by differentially acting friction clutches. All mechanism must be completely protected from mud. No brakes should be located on transmission members, but all braking effect should occur at rear hubs. Large steel disc wheels are best, and they should be equipped with solid rubber tires. The body should be metal and no wood or other combustible material used in the construction of the car, which should be finished in aluminum paint from hood to muffler. Such a machine will soon be on the market.

Fig. 19.—Room for company in this doctor's car.

The machines which I have been using during the past few years do not correspond to the above description, but they have shown me in what direction improvements are needed. With all its faults, I like my present car (151) much better than horses in my practice, and find it less expensive to maintain than enough horses to do the same work.

THE AUTOMOBILE FOR PREVENTION OF CRUELTY TO HORSES.

H. B. KENDALL, M.D.
MENASHA, WIS.

SINCE March 28, 1904, I have operated an automobile over 6,000 miles on all kinds of roads, fair, bad and worse, in a circuit of thirty miles, and have been hauled home but once (a broken axle arm).

Before buying the automobile I was obliged to keep two or three horses; now I keep none, although for one or two months in the winter a horse is often a necessity; yet a road that is fit for a horse is fit for an automobile. The greatest benefit

to the public roads would result from the establishment of a like width of track for winter and summer.

I am a great lover of the horse, and it was this, more than anything else, that caused me to consider the automobile. The miserable condition of city streets and country roads for from five to six months of the year made it actually cruel and inhuman to drive the animals, even under the kindest guidance; and the often unavoidable exposures to cold, storms and flies which the faithful beast was compelled to endure gave me automobile fever and I haven't got over it yet.

Dives Into a Snowbank.

With the instructions sent by the company I alone, set up, started and operated my machine. The first thirty rods we drove, the pesky thing made a bee-line for a three-foot snowbank at a fifteen-mile clip and plunged in. The guiding lever failed to act because the gray matter in the driver's cranium

Fig. 20.—This physician has run this car 55,000 miles.

failed to direct the hand that controlled it. Of course the automobile was to blame for this. No harm was done, no horse needed; we pulled it out alone, swung to starboard, and were off—a little wiser. My experiences and observations have convinced me that carelessness, incompetency and lack of mechanical skill are a trio of factors that go far to cause biased and prejudiced feelings toward the automobile.

My car (162) has gasoline motor, two opposed cylinders; cooling positive on both high and low gear, whether vehicle is in motion or not, by a large special fan flywheel. The motor being mounted horizontally, the vehicle runs without any vibration that can be felt by the occupant. Get the highest horse power motor possible to apply to your automobile.

The Auto Will Not Run Without Being Cared For.

My car is kept in an ordinary old barn. It has the same wheels, in perfect condition, same body, paint and trimmings, and same tires (solid rubber) that were on when I received it. I care for and operate it myself; and now we are so well acquainted that I know better than to blame the commutator or brushes or spark plugs for every degree of failure of the motor to act properly; nor do I find fault with the carburetor, or some of the internal mechanism of the motor for such effects when a bank of weak batteries, an empty gasoline tank, or poor lubrication is the cause. Treat the automobile with the same consideration with which a good horseman treats his horse and it will serve you well.

My actual expenses with the automobile are rather less than keeping a good horse, with necessary paraphernalia, if I cared for it myself. A horse wears continually whether he works or not, and the expenses are about the same. Practically, an automobile costs nothing when not in use; it can only get out of style and behind in improvements, which are brought out every few months. In fact, most of the expense to my car is the result of this very thing, the addition of improved devices. Old will do, but up-to-date is better.

My car is either one or two-seated, and, as no dust wraps are needed in summer, the pleasure we get out of country rides and trips to neighboring towns more than compensates for its care.

Relative Cost of Keeping a Horse and an Automobile.

HORSE AND RIGS.		AUTOMOBILE.	
RELATIVE FIRST COST OF EQUIPMENT.			
Two horses	$400	Automobile	$700.00
Buggy, rubber tire	100	Fur robe	20.00
Cutter	50	Heavy lap robe	8.00
Cart	25	Summer robe	2.00
Two sets harness	40		
Two day blankets	20		
Two night blankets	10		
One fur robe	20		
One heavy lap robe	8		
One summer lap robe	2		
SUPPLIES FOR ONE YEAR.			
Oats, 390 bushels, at 30c.	$117	Gasoline, 120 gals., at 18c.	21.60
Hay, 2 tons	28	Lubricating oil	4.20
Straw, 6 tons	30	Spark plugs	6.00
Farrier services	75	Inlet valves	4.00
REPAIRS AND HIRED MAN.			
Repairs (ordinary)	40	Repairs (average circumstances	50.00
Man	100	Man	25.00
Total	$1,065	Total	$840.80

No. of months' service, 11 No. of months' service, 10.

These estimations are calculated on a basis of two years' service.

Time saved in making trips, 40 per cent.

I will give details of operation, etc., to anybody on demand.

Fig. 21.—A very comfortable appearing vehicle.

THE AUTO IN COUNTRY PRACTICE.

F. E. DAIGNEAU, M.D.
AUSTIN, MINN.

FEELING that I was wasting too much time on the road when making calls in the country, I decided in 1903 to dispense with livery hire and to invest in an automobile. Accordingly I bought a single cylinder runabout of a popular type (175), with governor timed ignition and gravity circulation. This car I used with fair success for two years, but found that when the roads were heavy, in spring and autumn, I did not have sufficient power. I then began an investigation of the different cars on the market for a doctor's use. The car (176) I finally purchased as most fully meeting my requirements was a three cylinder 15 H. P., 1,250 pound machine with large wheels, giving high clearance, and equipped with low tension magneto make and break ignition which practically eliminates all ignition troubles. The simplicity and accessibility of the mechanism leaves nothing to be desired.

This machine has done away with previous difficulties and as I take care of it and make all small repairs myself the expense of upkeep is comparatively light.

The Auto a Problem in Winter.

For eight months of the year I can use it in my work, but in winter I have to go back to livery hire. While the city physician can run his car nearly every day in the year the country doctor will find that winter use is not practical. Unless the car is kept in a warm place it is almost impossible to start the engine on account of the thickening of the lubricating oil. A light fall of snow does not prevent the running of a car, but snow does not remain spread out and the car is not made that will go through large snow drifts.

The automobile is certainly a practical vehicle for a city practitioner, and it has many advantages for the country doctor. Barring accidents, it is always ready, day or night; much less time is spent on the road than with horses and the doctor has more time for office work, study, or social duties. Also the auto is a delightful form of recreation.

Tires form the biggest item of expense in running an auto, but one should bear in mind that the wear and tear on these is greatly diminished by large wheels and a light car. I advise any physician who contemplates buying a car to get one with plenty of power and of light weight. Then let him acquire a thorough knowledge of its mechanism and be able to make small repairs on it himself if he would operate it successfully and economically.

Fig. 22.—A New England physician whose car is not hindered by any ordinary amount of snow.

A CONCISE ENDORSEMENT OF THE AUTO.

M. CLAYTON THRUSH, M.D.
PHILADELPHIA.

DURING the last two years I have used an automobile constantly in my practice. My car (177) is an 8¼ H. P. machine, run by gasoline, has single cylinder, water cooled, and has two seats. The complete cost of car was $830. I store the car on my premises.

The cost of maintenance has been carefully recorded, with the following result: Gasoline, oil, and dry cells average about $2.50 each month; repairs of all kinds average $3.00 each month. One set of tires lasts a season; the tires cost $35 each.

Economy and Satisfaction.

My car covers about twenty miles daily in Philadelphia and suburbs, is now being used for the third season, and gives as good service as the day it was purchased. The total time out of service for repairs of all kinds would not average twenty-four hours in a month. I drive my car myself and obviate expense of chauffeur. It requires about fifteen minutes daily to keep car in running order. Under above conditions the total expense averages about $18 each month. A horse and carriage would be more expensive to maintain with the same amount of time expended, and one cannot travel nearly as rapidly.

THE BUSY PHYSICIAN SHOULD STICK TO THE HORSE.

W. C. CLARKE, M.D.
CAIRO, ILL.

ORIGINAL cost of any new machine that will stand wear and service must figure at least $1,000. To keep in garage will cost from $10 to $30 each month. This includes repair work of all kinds, but new parts, if broken, cost extra. In my experience this item has been extremely small. Gasoline at the least costs $6 each month and oil $2. Our garage man keeps machines cleaned, oiled and fed, delivered at my door when called for.

My runabout cost me $800 without horn, lights, hood, covers, etc. My searchlight, bull's-eye lights, side lights, horn and Gabriel horns, clock, speed meter and top cost about $400 extra. The entire cost of maintenance, including expense for repair, gasoline and oil, has not exceeded an average of $25 a month. The expense of horse and buggy keep will average $20 a month. One will buy a new horse each year and a new buggy every two years.

Immense Saving of Time.

An automobile has the advantage of 75 per cent. when weather and machine permit. You do not have to untie or hitch, harness or unharness, and with a good machine you can go where horses can go. In making night calls it is at its best, for here you can save fully 95 per cent. of time. A point always to be considered is that in cold weather the auto must be kept in a warm place or you can not crank the machine.

A Plaything for Grown-up Boys.

Horse and buggy can not be mentioned in the same day with an auto for genuine pleasure, health and excitement. For the overworked doctor it is better than medicine, vacation or religion. It makes one forget he is living, or that he must some day die. It makes him feel that if he must die the auto route is the best. In fact, it is the only pleasure greater than our boyhood days of brass-toed boots and circus parades.

A Poor Business Proposition.

For a busy doctor who wants to know the truth of the automobile compared to a horse as a business proposition, I can say that the auto is not to be considered. You can not get along without a horse and buggy, winter or summer. At least, this is the experience of myself and two colleagues (154, 155) and we all own good machines.

In conclusion, I think automobiles belong to the class who have plenty of time for pleasure, who are willing to pay for it, and who know that they get the only real pleasure money can buy. The doctor who is busy and who is making money had better stick to the horse and buggy until his boys have graduated as machinists.

ESSENTIAL POINTS IN AN AUTOMOBILE FOR COUNTRY USE.

H. W. CHAPMAN, M.D.
WHITE HALL, ILL.

FOR the past two years I have been using an automobile in my work during the summer, when the roads are at their best. My machine (161) has many good points which I deem essential for economical use on country roads.

In the first place, it looks like a road wagon and, in consequence, is an object of less terror to horses than an automobile of the usual pattern. The wheels are 44 and 48 inches in diameter, with solid rubber tires. Two horizontal air-cooled cylinders of 6 H. P. are hung close to level of axles, which together with the wheels constitute about all the weight of the machine.

Complaints About the Makers.

This machine clears the road more than any other and has a speed of 20 miles an hour. There is no differential, and the transmission is exceedingly simple in construction; these things make it durable and economical as to power, but render

the driver's work a little more complicated. These wheels stir up almost no dust, and for good roads the machine is a success and reliable since I have worked it over; as it came from the factory, however, because of careless construction and adjustment, it caused great trouble and expense during the first season.

The legitimate expenses for repairs for the two seasons have been less than that of keeping one horse shod. Fuel and oils amount to less than the feed of one horse, as the machine only eats while working. The time consumed on the road is just one-half that required by a horse. For pavements and hard roads the machine would be all right every day in the year, but for country roads it has insufficient power if there is any mud, or if the steep hills are not smooth.

This machine is for two passengers, and had it been provided with a 15 H. P. motor it would probably be able to propel itself on steel tires which should be provided with self-sharpening calks that would hold on ice and greasy roads. With a wheel of this size a man should be able to ride 20 miles an hour on a steel tire, which is all the speed any machine should have for use on public roads.

Expects Little Improvement Until Market Relaxes.

If one can eliminate the pneumatic tire, the water-cool, the differential gear and the complicated transmission and have an honestly made engine of sufficient power at a price within reach of men of moderate means, our farmers and business men would soon have them and the prejudice against their use on the roads would rapidly disappear, provided the drivers had succeeded in reducing the golden rule to every-day practice. Up to the present, however, prospective purchasers do not know what requirements are essential, but trust the manufacturer, who is usually in the same position, but chiefly interested in converting his machine into cash. So long as the supply of inexperienced purchasers holds out there is but little inducement for the manufacturer to alter his models.

THE AUTO ADVANTAGEOUS IF UNDERSTOOD AND WELL CARED FOR.

PHILIP SCHUYLER DOANE, M.D.
CHICAGO.

FROM my own experience and that of my friends I have drawn a few comparisons between runabouts and the single horse and doctor's buggy. The original expense or outlay for the automobile is little greater. The cost of maintenance is, if anything, a little less—when the car is run carefully and intelligently. I feel confident that the experimental stage of the automobile is over and that the gasoline or steam machine has become a practical thing—almost a necessity to the busy doctor of the present day. In large cities and in the country, physicians doing general work must cover considerable territory. It must be done with the least possible loss of time—day or night. The well-constructed type of runabout will meet these demands as a horse or horses can not.

Pay Enough to Get a Good Car.

Great mistakes are made in the original purchase of an inferior machine which sells cheaper than the standard makes. The cheap car usually runs well for a few months, but then troubles commence and expenses multiply for repairs and new parts; and there is great loss of time and wear and tear on one's nervous system.

Learn Your Car and Care for It Yourself.

The knowledge of mechanics is desirable, but not necessary in the management and running of an automobile. Every physician is more or less a "natural-born" mechanic, and it does not take him long to form a very close acquaintance with and a warm friendship for his machine. He will soon know its very pulsebeat and be able to diagnose any difficulty that may exist in any of its vital organs. This intimate friendship is of the greatest importance if one would get the best results at the minimum cost.

Keep your machine in your own barn or rainproof shed. The average keeper of a garage has an idea that the automobile owner has a bottomless pocket. For the first six months that I owned my car (157), I kept it in a garage and the monthly expense, for washing and cleaning and delivering it to me daily, was $20. This is exclusive of gasoline, batteries, etc., of course.

With Experience One Can Save Much Expense.

I then moved out to our summer home and kept the car in our own barn. Our gardener washed and cleaned it and I looked after the machinery. This method brought the expense down to a minimum. I purchased a 60-gallon tank and bought gasoline at wholesale rates on account of the quantity.

The amount of gasoline consumed is governed by how much the car is run—the beginner always using up more oil than the expert for the same amount of mileage.

If you take care of your own car, very little time need be spent on it, if you look after the details carefully before you start out for the day. It is necessary that you have someone to wash and clean it for you, and this same individual can be taught to keep the tanks filled with gasoline, oil, water, etc. A few hours each week will suffice to go over the engine, clean it carefully, and tighten the bolts and screws.

Tire difficulties are the bane of an automobile owner's life. For that reason I think that the car that is well constructed but not too heavy is the car a physician should look for. The air-cooled machine, as it stands to-day, has no advantages over the water cooled; whereas, the latter has the advantage of not getting overheated in summer—that time of the year when the automobile is the greatest pleasure to you and your family.

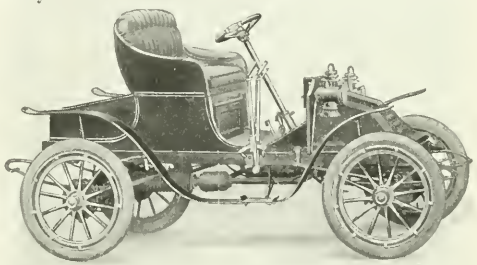


Fig. 23.—The runabout of a country practitioner in the northwest.

I have a water-cooled car, and have secured a 1906 pattern of my original purchase, and hope to continue to enjoy it and to prosper in my professional work, with my runabout to hurry me about in this large city and its many outlying suburbs.

FROM THE STANDPOINT OF THE LARGE MACHINE.

JOSEPH A. ROBERTSON, M.D.
NEW YORK.

ALTHOUGH my greatest trouble has been with the tires, it has not been from punctures but from rims cutting through the sides of the outer tire, resulting in "blowouts." The support being removed, the presure is thrown entirely on the inner tube, causing it to rupture with great noise like the report of a pistol. I have had this happen with new tires. These occurrences take up a great deal of time. The causes of this rim cutting are, mainly, three: 1, poorly constructed tires; 2, improperly fitting tires to the rims; 3, fast motoring. Manufacturers have given this subject very careful study during the past year, and now claim to have obviated this troublesome problem. Being in this quandary I replaced the American rims and tires (171) by French rims and large tires (172) supplied by a leading French tire manufacturer. Since changing the tires I have had no such troubles as in the past.

Motoring as a Health Giver.

I can heartily recommend motoring as a health-giver. It keeps you out in the fresh air and sunshine. The constant

vibration, changing panorama, etc., are conducive to building up a firm foundation for a long life. I believe a great many overdo this pleasure-giving recreation. People who find it to be a tremendous nervous strain to drive their own cars should not continue, as nerve exhaustion soon follows. I have seen several persons whose nervous systems have suffered from driving their own cars, causing insomnia, loss of weight, etc.

Protect the Eyes with Goggles.

The traumatism of the conjunctiva in motoring is very severe and one should always wear goggles. Particles of dust and dirt are constantly getting into the eyes, even with goggles on, and I advise to have constantly on hand some 1 per cent. solution of cocain and a saturated solution of boric acid. I also prescribe after a long motor run to douche the nose and throat with some mild antiseptic, thus obviating any infection which might be in the dust which has accumulated in the nostrils, nose and throat.

It is of great importance for one to understand very thoroughly the individual car one is driving. Learn the carburetor construction piecemeal, as this can be called the heart of the gasoline engine.

Important Construction Details in Large Cars.

Lubrication ought to be from the dash-board to the principal bearings. This system should be mechanically operated. The splash system should be used in the engine case and gear case.

Fig. 24.—Ready for the day's professional calls.

The multiple metal disc clutch and internal expanding clutch are the two best types. I give the preference to the internal expanding type as this obviates any thrust on the engine shaft and bearings.

The large Hess-Bright type of ball bearings for a car has given the best results. These bearings are being used by the leading automobile manufacturers in the engine bearings, wheel bearings, gear case bearings and transmission throughout. Flexible joints between clutch and transmission are used for alignment. The universal joint is commonly used.

In an automobile greater than 24 H. P. the wheels of such a car should be very strong. Many accidents have been called to my notice by the breaking of a front wheel from skidding or turning sharp curves. I know of one case where the front wheel broke on an automobile that was going at a speed of 30 miles an hour, and the car was thrown over as a result, causing serious injury to several of the occupants. The frame should be of a strong steel. For all around usage I would recommend a 24 to 35 H.-P. automobile, water cooled, mechanically operated inlet and exhaust valves, with carburetor of the cool air type. For the axles, shafts, gears and wherever strains are heavy nickel steel should be used. Springs ought to be long, large and strong. This will eradicate using any shock absorbers, which are not necessary if springs are properly constructed. The suspension of the car frame in the rear should be of the three point spring type. Piston rings four to five in number give the best results. The chassis should have at least 110 inch wheel base. Some modern cars have a wheel base of 120 inches. The longer the wheel base the easier the car rides.

On average roads I would advise the chain drive. For a very sandy region where there are also pebbles the bevel direct drive is the best as many chains are broken by pebbles getting in them. This kind of drive, however, has not been successful on the very high powered cars. The gears of the shifting selective locking type are the most modern and must be considered before any others.

Carry Outfit for All Emergencies.

For all motorists I recommend a full set of tools, extra inner tubes, shoes, tire pump, chains, tire chains, repair tire outfit, fire extinguishers and plenty of lamps for night driving. The supply of gasoline to the motor is best accomplished by the pressure system, using compressed air and the exhaust pressure in the gasoline tank. The Limousine body is the most adequate for a physician's use.

Cost of Keeping Large Cars in New York City.

I have driven a 16 to 22 H.-P. 4-cylinder, double chain driven gasoline touring car (173) nearly 19,000 miles unaccompanied by a chauffeur, mostly in New York and vicinity, over good roads. The longest run I took was to Lake George via Saratoga and return. All kinds of roads and grades on this run were encountered.

The accommodations for a machine in New York are very fine, and my machine was kept at one of the garages. I did all of the minor repair work on the car. The heavy repair work, which involved more time than I could give to it, was done by the repair shop at the garage.

It is more expensive to purchase and to keep up an automobile than a horse. The cost of maintaining an automobile in New York City, along the lines I mention, is, in round numbers, $60 a month. This includes storage, which amounts to $25. If one has a chauffeur, the expense would amount to $125 a month. If one has his own stable, this large storage bill would be eliminated.

The cost of an American automobile of the horsepower I advise is from $3,000 to $5,000. With such a machine you can figure on one gallon taking you from 12 to 18 miles.

I have called attention to modern ideas about the larger cars instead of relating my minor mishaps and experiences. These general ideas have arisen from experiences and observations I have had and made with automobiles of all kinds (174). "Experience is the best teacher."

Weighing the time of going from one place to another, where distances are great, the automobile should be given the preference. In a very hilly country the wear and tear on an automobile is very great, and I would recommend the use of a horse in preference.

THE AUTO INVALUABLE IN GENERAL PRACTICE.

A. C. KIMBERLIN, M.D.
INDIANAPOLIS.

FOR actual service, pleasure and satisfaction the automobile is invaluable for one engaged in general practice.

Five years ago I began to use an auto. The increasing difficulties attending the selection and maintenance of horses and keeping a coachman made it necessary to adopt some other means of transportation, as the attention required by these details seriously interfered with my practice and added much to my work.

Use a Gasoline Car.

I first tried electric cars for about two years, and found them impracticable because of the expense of maintenance, the limited capacity of service and the time required in keeping them charged. I decided to try a gasoline car, and purchased a four-cylinder, air-cooled machine, because of its simplicity of construction and the avoidance of difficulty with water in freezing weather. I very much prefer a four-cylinder engine because of the smoothness with which it runs and the advantage of enabling you to get to and from houses of sick people with much less noise than a single or double cylinder machine. The added H. P. of a four-cylinder engine while not often required, is frequently very much needed, and the selection of a car of too low H. P. is, to my mind, one of the serious mistakes often made in the buying of a car which is intended for every-day work over roads and under conditions which you can not select or control. Occasionally, as in our recent heavy snowfall, which lay on the ground for a period of two weeks to a depth of 12 inches on a level and in many places where the snow had been swept from the sidewalks and street-car tracks into the street the depth exceeded two feet, to be able to drive every day and meet with practically no delay in speed convinced me of the supreme importance of having plenty of reserve power. For two days of our recent snowstorm, when our street cars were tied up and horses soon fagged out or made very slow speed at best, to be able to go without delay and without inconvenience except the difficulty of steering, certainly makes me almost an enthusiast in the use of an automobile for a physician engaged in general practice. There is a great advantage in selecting a car of good and simple construction and then using one make. Most of the inconveniences experienced by those who have had no experience with gasoline engines arose from trifling things which could easily have been avoided had the driver any understanding of the proper care of his car, and yet the machine was condemned as being impractical when the fault was the driver's ignorance.

Nominal Expense for Maintenance.

As to expense, my gasoline, lubricating oil and repairs average less than $10 a month the year through. To this must be added, of course, the expense of new tires (about $140); if properly cared for the outer casing, in my experience, will last about one year. The total expense is very much cheaper than the same amount of work could be done with the use of horses, to say nothing of the extreme satisfaction as well as the economy in time in getting about. On a busy day I save about two hours' time by the additional speed which I am able to make.

Less Worry Less Expense, More Comfort.

Formerly I kept three horses for my work, but the selection and caring for them caused me very much anxiety aside from the dread of always being dependent on a coachman, a very unreliable employé at best. With my machine, which I always drive myself, my hurried or long calls and night work are done with little of my former worry, and with my enclosed car, the body of which I had built and put on the chassis of the same style that I formerly drove, rain and snow, and most of all, the cold wintry winds, no longer annoy me, and after a day's work with practically no exposure, I have a feeling of supreme pleasure of having made a very great saving of time. At first I kept my car in a garage, but this soon proved unsatisfactory because of the expense and the impracticability of having it delivered to my house or office. I now keep my car at my home for less than half the expense of storage. As I employ a man for my house and yard at all times, I find with a very little time and explanation as to the care and attention to essential points which I am able to point out to him, my car is always ready, and I can stand a strike on the part of my stableman much better than when I was keeping horses. I train my man to wash, oil and care for the important parts of my car, but do not permit him to drive it, as I find that the average man as soon as he is able to take a car on the road has little interest in anything else.

My first car (1880) I drove about 10,000 miles, using it in all kinds of weather, hot or cold. My last enclosed one (1810) I have not driven such a milcage, but it has proven much more comfortable and convenient, and requires, if possible, less attention owing largely to the better perfection in detail of the carburetor, commutator and spark coil used in its construction. The box deck on these cars I find a very convenient place to carry my cases and other paraphernalia.

I can not praise too highly the real value of an automobile for the use of physicians regularly engaged in general practice, for when properly cared for, as well as driven, which is too frequently not the case, I find on average good roads it can not be compared to a horse.

THE MOTOR CYCLE FOR THE COUNTRY DOCTOR.

W. NICHOLAS LACKEY, M.D.
GALLATIN, TENN.

REALIZING that it is good to have a hobby—one to ride in reality and not figuratively speaking—and having a mechanical turn of mind, my hobby for the past five years has been mechanically propelled vehicles.

Autoists Must Study Their Cars.

During the last four years I have driven half a dozen makes of cars (191), and on numerous occasions I have driven the automobile to see patients under trying conditions of road and weather.

Fig. 25.—Protected in a pouring rain. The physician has dropped the rubber curtain while the photograph is taken.

Let me say right here to prospective purchasers of automobiles, for country practice, if you don't like machinery and are afraid of getting grease on your hands in acquiring a thorough knowledge of every part of your car, and don't feel that you have the time to read up on the principles of the gasoline engine, don't be deluded into buying an automobile, for you will meet only with disappointment in its use. Your success in using it in your practice will depend on the amount of knowledge you possess of its every part, for even the best constructed gasoline motor will at times give trouble. With a bit of trash clogging the nozzle of your carburetor, or a loose or broken commutator spring, or a short circuit in your wiring, you will be just as helpless ten or twelve miles from home, and the town mechanic, as you would be if your car had dashed against a stone wall and converted itself into a scrap heap.

The expense of upkeep, and especially that of replacing injured and worn-out tires, are the principal objections against the automobile for the country doctor, who is usually in moderate circumstances financially. The low cost of keeping a horse and buggy in the country and in the small towns makes it hard for the automobile to compete, from the standpoint of expense, though the saving in time, a greater range of mileage, will, to a certain extent, throw the balance in favor of the automobile. The price of one full set of new tires, however, in my town, will nearly pay the feed bill for "old Dobbin" for seven or eight months. In the city the expense of the horse-drawn rig is, of course, greater, so there is not such a disproportion between the expense of the two modes of locomotion.

Manufacturers Are Indifferent.

I don't believe that the automobile has yet been constructed which is in every way as thoroughly practical for the country doctor every day in the year, winter and summer, as it should be. The cause is the indifference or ignorance on the part of the manufacturers, of the practical requirements of a car which would be adaptable to the needs of the doctor.

Ideal Car for Country Doctor.

My idea for a car for the country doctor is as follows: The car should be of the runabout type, two air-cooled cylinders, from 7 to 12-horsepower. It should be equipped with solid tires—several makes of solid tires are now on the market. While they decrease the speed and increase the danger of injuring the machinery from the jars and shocks unavoidable on the road, still if driven with care over rough road this objection, to a certain extent, would be overcome; but the freedom from delay on starting on a hurry call and finding a deflated tire, delay on the road from punctures and blowouts, longer life, and the doing away with the actual manual labor of pumping up tires, recommend them over the very unreliable pneumatic tires, for the doctor's use, anyway. The car should be equipped with a Holley carburetor, which, owing to its giving your cylinders a better mixture, will produce from one and one-half to two additional horse-power. The saving in gasoline alone will pay for it in a few months. The ignition device should be of the most reliable type, for this is usually, with the exception of the tires, the most unreliable part of the automobile. The body should be so constructed that every part of the machinery is easily accessible for cleaning, oiling and adjusting. The planetary change-speed gear and transmission is practical for the runabout, and with proper care rarely gives trouble. The car should strike the happy medium when it comes to weight. The light but strong runabout, with engine of ample power, can negotiate muddy and sandy roads, where many of the heavier machines would come to grief. The tool box of the doctor's car should contain everything necessary to make any reasonable repair while on the road. A top with a full complement of side curtains and storm aprons, also a well-fitting boot, to protect the engine and especially the carburetor from mud and water. All are necessary for the doctor's car, which is to be used in all kinds of weather.

Points in Selecting Car.

To my mind, the points in selecting the car for the use of the country doctor should be in the order named: Reliability, durability, economy of upkeep, hill-climbing ability, price, ease of control, speed, and lastly, appearance. Our roads in Tennessee are above the average, those in middle Tennessee being macadamized turnpikes, but it is not how fast the car can run over the roads, but how fast the roads will let the car run without racking it to pieces. This I know from experience, in driving through the country in a car equipped with a speedometer, to be from 15 to 18 or 20 miles an hour (usually between 16 and 18). Almost any make of car has speed to spare, but the other points named are of much more importance and are not possessed by all makes of cars by any means.

Expense.

Avoiding bad accidents, a doctor who understands his car houses it and does most of the adjusting and small repairing, should drive his car at the expense of from $175 to $200 a year This is not counting depreciation on car and interest on money invested.

A doctor equipped with a car somewhat as above described, and a good reliable make of motor cycle, ought to be independent of the horse, provided he has no patients who live very far off the roads.

Advantages of Motor Cycle.

I believe the up-to-date motor cycle (1908) to be the automobile for the poor country doctor—at least during the summer and fall months when the roads are dry. They can not be used in the mud. Even if he possesses the more expensive automobile, he will find himself learning more and more to enjoy the powerful little machine in its exhilarating rush up hill and down to the bedside of his patients. One of these machines will save many a dollar on operating expenses in a season on an automobile. I have ridden thousands of miles on a motor cycle and have never failed to reach my patient on time or had to walk home. I have ridden long distances in emergency cases, in the country, at a 30-mile-an-hour clip, and have also responded to calls at night on my motor cycle (1912), which is equipped with a strong acetylene lamp. The white road spinning beneath my wheels, with the dark shadows fleeing before the light, with the cool night air blowing on my face, have added not a little sport to the occasion.

$3.50 a Month for Expenses.

The expense of operating one of these machines is about $3.50 a month, including gasoline, batteries and oil, tires not included. One set of tires usually lasts two seasons.

You can get more downright service and comfort out of one of these little machines, the weather permitting, than out of an automobile. Before I bought my motor cycle I was extremely skeptical as to its practicability, but a few months' constant use proved to me the wonderful amount of work that can be accomplished with one of these little time savers.

The automobile enables the country doctor to cover five times the amount of territory in his practice that could be traveled with a horse. The great amount of time saved to attend to his office work, more prompt answer to emergency calls, the long irksome drive converted into an actual pleasure rather than a thing to be dreaded. Last, but not least, the advertisement afforded by the automobile is not without value as a practice getter. These are a few of the advantages of the automobile.

In conclusion, let me say, don't purchase an automobile because of its paint or gaudy appearance. The motor is the heart and soul of your new steed. Study the subject theoretically and practically, if possible, on the machines owned by your friends, and then with the advice of a trustworthy and competent mechanic, make your purchase of a new and up-to-date model. Don't make the mistake of buying a second-hand car. There are some exceptions I know, but my experience is that it costs more to get a second-hand car in good shape than it does to purchase a new one outright. The automobile, used with due consideration to the people who drive horses, will add to your influence as a modern and up-to-date practitioner of medicine in your community.

THE AUTO SUPERIOR TO THE HORSE.

A. E. MACKAY, M.D.
PORTLAND, ORE.

FOR the use of a motor car the climatic conditions here are almost ideal at all times of the year, but the lack of good roads in outlying districts interferes considerably during the wet season, for it must be admitted that the automobile requires fairly good roads to ensure economy and comfort.

For the past four years I have used almost continuously a machine of the runabout class and have kept accurate account of all expenses in connection with the use of the vehicle. My first machine was a small runabout (1910), used every day, summer and winter, for two years and four months, at an average cost of $21 a month. Including the loss on sale when disposing of it to buy my second vehicle, the monthly expense amounted to $34. My second machine of the same type, and for eleven months' use, including the loss on sale, showed an average monthly cost of $37. My third venture was slightly more pretentious, a touring runabout, which has been in constant use for ten months, and will average, including an estimate for overhauling and painting this spring, about $28 each month. These estimates include all expenditures, gasoline, carbide, tires, repairs and a garage charge of from $10 to $15 a month, which one might easily save if a private garage or stable could be secured at home.

Suggestions for a Prospective Purchaser.

Most of the up-to-date automobiles are very reliable and fairly fool proof. An investor should insist on a machine being thoroughly protected from dust, water and mud, should demand that hand levers, steering posts and such other means for controlling the car be so placed that a driver could enter his car from either side, should choose a vehicle with clutch drive and simple air-cooled engine, with modern wheel base, so that complete towns could easily be made on an ordinary thoroughfare, with moderate weight, thus obviating undue wear on tires, and with one seat, so that the temptation to overload the car will be avoided, and then work for good roads and streets first, last and all the time.

In reviewing my experiences and comparing them with those who employ the horse-drawn vehicle, everything seems to favor the automobile. When the motor car is disabled it requires but a short time to place it in commisson again, but with a horse disability means either a long holiday in pasture or the policeman's bullet. The automobile is patient, reliable, ever ready, and after a hard day's work it still can be used for a pleasant evening drive or as a means of conveyance for oneself and wife to theater or social function.

To the prospective purchaser, my advice would be: Look over your field of activity and if fairly good roads prevail, buy your choice of motor car, giving preference always to the manufacturer who has a reliable agent in your town or near vicinity, and I feel assured that the large amount of time saved and the pleasure and diversion obtained will amply repay for additional expense over other means of transportation.

WRITES OF MUCH TROUBLE, BUT IS NOT DISCOURAGED.

BY A CHICAGO PHYSICAN (211).

BEING naturally fond of machinery, I took the automobile fever early, but managed by prudence to hold it in check for about four years. At length I purchased a small second-hand steamer (212) that I kept about three months. I ran it altogether about 400 or 500 miles, and finally sold it at a total expense of about $300. Later, I bought a new strong gasoline machine, which I think is one of the best on the market. The first year my bills for gasoline and repairs were only $600, although the repairs were mostly made by my son at no cost for labor. The next year I thought I would take a short country run, so started out one fine June day with my son as chauffeur and my brother and daughter as guests. For the first 60 miles I thought I was having the finest time in my life. Trouble came thick and fast for the next 20 miles; then I sent my daughter on by train; the rest of us stayed over night and the next day we limped into the town of our destination, 100 miles from the city, eighteen hours behind time. The next day being Sunday, we visited with our friends and the following morning my daughter and myself came home by railroad, leaving my brother and son to make repairs and to come with the machine. They were finally towed into the city five days later. My repair bill, as my son did all the work, was only $50, but I had to send the machine to the shop immediately. There they tinkered with it about two months, on four different occasions, pronouncing it all right; but on taking it out it would balk absolutely within from 5 to 15 miles on fine boulevards. The total mileage for these few weeks was about 100, cost $200. I then sent the machine to the factory, where it was put in good order, and it has since that time run beautifully whenever the wheels and tires would permit. In the meantime, I had bought another new car, which was a fine piece of machinery, but my troubles have not lessened materially. I have kept an accurate account and the expense of maintenance, including chauffeur and depreciation, has not been far from 75 cents a mile; but we have never had any very bad luck, have never hurt anyone else, never been sued for damages, only arrested once and never caused an actual runaway. My man had his leg and arm badly hurt by kick-backs, which cost considerable time, but as I was a physician the doctor's bills were small. My son had his arm broken in the same way, and this kept him home from college for six weeks, but we think we have a great deal to be thankful for. I am still optimistic. I own two machines now, though just at present neither of them is in commission, but I anticipate a great deal of pleasure in the future.

The Enthusiast Forgets His Troubles.

I have a suspicion that those who report very little trouble often have short memories; but I am sure the best time to own a car is before it is six months old, and that afterward one must expect a lot of trouble. The machines are being constantly improved and the time will come when they can be handled almost as easily as a sewing machine.

I am a thorough believer in the automobile, but think that at present its cost is fully twice that of horses and carriages, but when it runs it beats the latter "all hollow."

AUTOS NOT YET PLANNED FOR PHYSICIAN'S NEEDS.

HERBERT T. CLOUGH, M.D.

BANGOR, MAINE.

DURING the spring of 1905 I purchased a three-cylinder gasoline runabout (139), with top, in appearance more like a phaeton than like the conventional type of automobile. I keep the machine near my office and look after it myself, this work affording me quite as much pleasure and recreation as the use of the vehicle on the road. I used the machine continuously until snow began to fly last fall, under all conditions of weather which might be expected during the summer and fall seasons and over all kinds of roads—mostly bad roads—for we haven't anything in the way of roads to boast of in this section of the country.

Trouble Less Than with Horses.

On the whole my troubles have been fewer and less annoying than has ever been my experience with the horse-drawn vehicle for the same number of miles traveled; while the exhilaration, and freedom from anxiety for the horse's welfare affords a real rest in a long drive, which is absent when a horse furnishes the power.

Less Than Three Dollars a Year for Repairs.

My expenses for repairs during the entire season was $2.50, but I had no tire trouble. Allowing for tire repairs (for most men will not be so fortunate as I) I think $8 to $10 a month will cover all cost of maintenance. My machine is very easy on tires, most of the weight being on the rear wheels, which are 36 inches in diameter.

I believe the automobile can be made a thoroughly practical vehicle for the every-day use of the physician, and that in time it will add to his income, pleasure and span of life; but that time has not arrived—at least, not to all physicians. To those, who, like myself, enjoy caring for their machines, or at least supervising such care, many of the faults as now constructed can be kept righted and trouble anticipated and avoided. Such men will find pleasure in the use of the automobile, while those who lack interest in machinery, and who, therefore, give no attention to the mechanism, will leave the way open for troubles which will discourage its use.

Mechanical Perfection to Come in Future.

Later, the faults will have been largely eliminated, and at the same time a class of mechanics will have been educated in the care of these machines, so that when an accident does occur it will be easy to step into a shop and have it remedied, just as now when a horse loses a shoe. Little attention has been given the automobile as applied to the physician's needs, nor can we expect such attention so long as the more reliable makers can find a market for their product as now turned out, faster than they can turn it out. The demands of luxury must first be met; when these are supplied, then inventive genius will find the way to eliminate the troubles, and to attain that reliability which a physician, above all other users of the automobile, needs. The difficulties are not insurmountable, and will be remedied as soon as the industry has caught up with the demands of the public.

ADVANTAGES AND DISADVANTAGES.

S. B. DICKINSON, M.D.
WATERTOWN, S. DAK.

HAVING used an automobile for nearly three years, both winter and summer, I am convinced of the truth of the following statements: 1. The average physician can use an automobile to advantage in his practice. 2. It must be a practical machine. 3. He should know it from stem to stern. 4. He should have as much consideration for his machine as he should for a horse.

The advantages may be summed as follows: Time saved, conveniences too numerous to mention, recreation and precedence. The disadvantages may be boiled down to this statement: less the liability of trouble on the road.

Requires More Patience Than a Hysterical Woman.

By the average physician, I mean the physician who has a reasonable amount of self-control. A man can not be impatient or "rattle-headed" and operate a car successfully through thick and thin. Trouble will come, and he must often have more patience than is sometimes necessary with a hysterical woman.

A physician requires a machine with plenty of power, moderate speed, 25 to 30 miles an hour, reliable in every particular, plenty of luggage space and high enough from the ground to clear stones and ridges. I know of no machine on the market to-day that meets all these requirements unless it be one make of machine with high wheels, solid tires and cable drive, and I can not help but look with favor on this machine.

Tires Are the Hardest Problem.

Do not expect a machine to do proper work unless properly oiled, properly adjusted and properly housed. I have left my machine (138) standing over night in a temperature 25 degrees below zero and started it the next morning and kept it running for fifteen or twenty minutes and then stopped; but I do not claim that it did the machine any good, for the oil was so thick that it did not lubricate the cylinder. I have also run my machine without water in the cooler, thinking I could make a certain point before stopping; by so doing I caused a crack in the water jacket.

I shall never discard the auto for the horse in my practice.

PHYSICIANS' CLUB TO MANUFACTURE IDEAL MACHINES.

L. M. ALLEN, M.D.
SOUTH NORWALK, CONN.

DURING the past three years I have been using a 10-horse-power, single-cylinder, water-cooled, gasoline automobile (140), costing $850, and I expect to use the same car three years more, unless something very much better is put on the market at a reasonable price. In my practice the automobile has not been nearly as expensive as two horses and a man, but somewhat more expensive than one horse boarded at the livery stable. Maintenance and repairs cost a little over $35 a month, while to keep a horse at the livery stable costs $20 a month; shoeing, $2; a boy to drive, $15; wear and tear something over $5 a month.

Keeps in Running Order All the Time.

During the past winter I have depended on my car entirely. Last winter I used my car until the first of February and the winter before that until the first of January. My car is seldom out of commission, and is almost always tuned up to do its best, because I usually spend about half an hour every morning looking over it and making little improvements in the adjustments, and the time so spent is a pleasant pastime.

I have been waiting and expecting every year to see something more suitable for the doctor's use put on the market at a reasonable price. If we could have something of about 15 horse-power, geared with several speeds, one speed of about 8 miles an hour for very heavy roads, we could push through everything at that speed, up hill and down, through mud and snow; whereas now we have to take the bad places under slow speed. Some may think 8 miles an hour very slow, but that is only for the very bad roads.

Club Together and Buy One Thousand Ideal Machines.

Here is an idea that persists in presenting itself to my mind. There are so many physicians looking for suitable automobiles for their work, and there is such unanimity of opinion regarding the power and general style of automobiles required, why not club together and give the contract to some reliable manufacturer to build a thousand automobiles (or ten thousand, if needed), all of one style and power? Such a car could be built for a little more than half the price now paid, by saving the big commission now paid to the agent and the enormous expense of advertising and by getting the advantage of the reduced price of building a great number of duplicate parts.

The contract might be given to the lowest bidder who would build the cars according to specifications. If some manufacturer were only alive to the opportunity, he could get orders for any number of cars, and a deposit on them before the cars were commenced.

THE GASOLINE AUTOMOBILE A FAILURE.

E. J. GALLAGHER, M.D.
NEW YORK CITY.

I HAVE had the painful experience of having been one of the pioneers in the use of the gasoline automobile (144) as applied to a physician's use, and I unqualifiedly say that they are failures, for several reasons. They are unreliable and always in trouble and require an engineer to run and to take care of them. They need daily care; one can't let them go two or three days without oiling, tightening loose bolts, etc., as with a buggy.

Continued Trouble and Worry.

Of course, a horse needs some care, but the liveryman or stableman will do that and clean the buggy also for $25 a month in this city. In the garages, on the other hand, they simply wash the automobile and polish the brasses for from $15 to $25 a month; all the oiling, etc., the physician must do himself or have it done and pay for it extra. Even when one pays for it the men in the garages either forget to do it or half do it, so one goes out in a pleasant frame of mind and after a mile or two is obliged to get out the oil can and get busy hunting for that squeaking bearing, and at the same time add some oil and grease to both hands and clothes.

The Auto Can Not Be Depended On.

The garage charges do not include gasoline or cylinder oil or oil for wheels and bearings (the latter is usually supplied by the liveryman if one uses a horse). It is very difficult to convey any idea of the unreliability of the automobile, but it is so unreliable that it is practically useless to a busy man. It is expensive, as any small part is charged for excessively by the makers of the car, and, in addition, the repair men have a very playful habit of charging from 60 to 70 cents an hour for their work, and even then are not satisfied, but will charge for thirty hours when they have only worked ten hours on the car.

The tires are very expensive and a nuisance; if they are pneumatics they puncture and blow out and require constant care. The solid tires are expensive in first cost and make the car anything but an easy-riding vehicle.

Horse a Thousand Times More Reliable.

While the automobile can be shown to be much cheaper than the horse (on paper), I am satisfied from my experience that the horse is far cheaper and a thousand times more reliable. The automobile that is reliable enough for a physician's use in the city is not made, so what can be said of it for a country doctor's use?

Every Autoist Praises His Own Car.

This is a strange thing to say, but many people (doctors, as well as others) always praise their automobiles, and, no matter how many troubles they may have with it, or how much the expense may be, they never say a word (in public) against that particular machine. Whether they are ashamed to show how badly they have been victimized or not, I don't know, but it is a fact that if one becomes an owner of a car he also becomes a selling agent for that car. Knowing in his heart that it is not suited for his or any physician's use, still he praises it as the only car worth buying. The troubles of the auto are many and the expenses heavy, for nearly all of the repair men are a pack of cormorants and charge excessively for any work they may do. If any of your readers want more of my experience they can have it willingly.

THE SIMPLE RUNABOUT FOR THE PHYSICIAN.

WILLIAM THOMPSON, M.D.
CHICAGO.

HAVING used motor cars for work and pleasure for over three years, I feel that I have had some experience. My first machine (206), a one-cylinder runabout, was among the first of that particular manufacture to reach Chicago, and had many weak points, but I suppose it represented a fair article at that period of automobile development in this country. The expenses for repair and general up-keep for this machine were more than they should have been because I was a beginner and had to learn. My next experience was with a so-called ten-horsepower, four seated touring car (207) of pretentious appearance and very much noise; thank heaven, it has become obsolete. My next machine (208) was of standard make, two-cylinder under a bonnet, rated at 12 to 14 horse power, but as nearly as I can calculate 8½ horse power was about the proper rating. It gave good service, however. I next invested in a four-cylinder car (209) of good size and power, assembled by a local dealer who only put out about a dozen of the same type and who, I believe, has not brought out any since. The engine was made in a reliable factory and the chassis from one of the best part houses in the country and was generally satisfactory. The engine is as good as ever and I believe that for the amount of wear and tear this machine has seen it ranks equal with any modern priced touring car on market. My expenses for the year 1905 for repairs of all kinds, gasoline and storage, have amounted to a little less than $300. Since October, however, I have had my own barn and of course have had no storage bill, but the expenses for cleaning, etc., have been just the same.

Much has been written regarding the physician's ideal car, but I do not think that it is yet on the market. It is certainly not the horseless buggy that advertises itself as ideal, nor some of the runabouts of cheap material and poor assembling. The nearest to it which I have seen are the 6 and 8-horsepower cars (210) that are so popular among English physicians or the small Peugeot type which is no longer manufactured.

Runabouts Are Not Well Made.

In this country the greatest advancement in motor car building has been made in touring cars and commercial vehicles; vanadium and chrome nickel steels are not used in runabouts as they are in touring cars, and until the manufacturers use the same grades of material in runabouts that they put into higher grade touring cars the runabout must be short lived.

Not all physicians would consider runabouts the most desirable for their purposes. In large cities, with well-paved streets, and particularly where one wishes occasionally to take his family into the suburbs for short runs, the touring car is preferred.

The Need of Fool-Proof Mechanism.

We hear a great deal about four cylinders as giving a much more even torque than the two cylinders; granted this advantage to the four-cylinder car, I don't think that we should underestimate the well-balanced two-cylinder or one-cylinder car, particularly when the two is a horizontal opposed under a bonnet and in front of the driver. For simplicity and "get-at-ability" it is the ideal for the novice. One whose mechanical ability is below the standard should have a machine with simplest "fool-proof" mechanism unless he employs a skilled mechanic. The more experienced motorist who has graduated from the runabout and who has a fondness for things mechanical will find more pleasure in the touring car.

Avoid fads and novelties and adhere to standard types built by reliable firms. Buy your motor as you would your horse, not for one season, but for many. Study its anatomy and physiology and all the pathology that you can acquire—I do not believe that any one man can know all the pathology of the motor.

THE EXPENSIVE REPAIR SHOP.

PARKS RITCHIE, M.D.
ST. PAUL, MINN.

EITHER I was unfortunate in my selection of a complicated machine, easily and frequently out of order, or, like the gentleman traveling from Jerusalem to Jericho, I "fell among thieves." Besides the salary of my chauffeur, my expenses for 1905 averaged $70 per month; too much for a two-cylindered runabout (112).

Too many boys are learning their trade in the garage at the expense of the unfortunate owner. It is marvelous how the hours roll up in the repair of the most trivial part of the machine.

Never Knew Before What Luxury Was.

In January, 1905, I changed to an electric with coupe top (113). I never knew before what luxury meant. The serious objection is the short mileage and limitation to city streets. The ideal combination would be the electric for comfort and pleasure on good streets, and a gasoline runabout for hurry calls.

Could Not Again be Content with Horses.

In the near future the automobile garage will be conducted more on business principles, and the boys who learned on our machines will be able to do skilled work. In spite of some grievous experience, I could not be content again with horses.

THE AUTO A LUXURY FOR THE WELL-TO-DO.

BY A PHYSICIAN ON THE WESTERN PLAINS (193).

FROM a practical standpoint, for a man doing business in the city, an electric auto is a convenience and a delight, and is much more satisfactory than a horse. If necessary to leave the paved streets, it is about as unreliable as anything can be. It does not work well in the mud; this from observation.

I own a gasoline motor car (194) of the Stanhope type. On the pavement, even in bad weather, except in winter, it is a constant source of pleasure and a great time saver. In muddy weather, off the pavement, it is about as useless a piece of property as one can conceive of. I have had only one winter's experience with it—a very unsatisfactory one—but I admit that I have not used an antifreezing mixture.

Unless Well-To-Do, Stick to Your Horse.

The chief trouble with a Stanhope or any small car is the want of power. The constant demand is for more power. If a Stanhope type could be constructed with a 30 or 40-horsepower engine, I believe it would be an ideal machine for all conditions. One could get speed if he needed it, and power enough to maintain a greater speed under nearly all circumstances.

I am a firm believer in the automobile, but at the present time, if I may judge of them from my own limited experience, I would say that they are a luxury to be enjoyed by the well-to-do. The poor devil had better stick to his horse.

SUGGESTIONS AS TO THE PURCHASE OF A RUNABOUT.

GEORGE L. RICHARDS, M.D.
FALL RIVER, MASS.

LITTLE value, it seems to me, can be derived by the intending purchaser of an automobile from the statements of users during the last two or three years, because the first machines were very crude and necessarily cost considerable to operate, and were only partially satisfactory even then; whereas at the present time machines that run well can be purchased at reasonable cost.

The Engine Should Be Very Accessible.

The physician who intends to use his automobile for his daily work should choose it with due regard to the needs of that work. Since the average physician is, as a rule, not much of a mechanic and is seldom dressed in a mechanic's garb, his machine should be of the simplest possible construction and with all parts as nearly accessible as possible. After experience with engine under the body and under the hood, and with chain drive and shaft drive, I should discard entirely the chain and the engine under the body, for the reason that the chain is dirty, constantly lengthening and not infrequently breaks; the engine under the body is inaccessible, and even slight adjustments and repairs can not be made without getting oneself covered with grease and dirt, whereas a suitably constructed engine placed under the hood is accessible as to simple adjustments and even small repairs without the necessity of changing one's clothing and without having to get on one's back.

I should discard the single cylinder entirely, on account of its noise and general shake. A double opposed, horizontal, two-cylinder engine or a two-cylinder vertical, if of sufficient size, will furnish ample power. The two-cylinder horizontal opposed will make much less noise and will be more comfortable for the rider than the vertical engine, but is not as accessible. I use a two-cylinder, 10-horsepower horizontal opposed, engine under hood, shaft drive machine (199) for my work and find it satisfactory.

As a physician uses his machine in all weathers, it should generate about twice as much power as would ordinarily be needed, and should run for the most part on its high speed, which should be capable of being throttled down for all ordinary emergencies without requiring the use of the low speed at all. Where two cylinders are used they should not be less than 4x4, and preferably 5x5, since heavy roads, mud and hills often put extra strain on the engine. Two-cylinder motors of the runabout class can be obtained at from $800 to $1,000, and should give a sufficient amount of power for one person. These are all water-cooled motors.

Air-Cooling Mechanism Favored.

Now, water-cooling, while satisfactory eight months in the year, requires an antifreezing solution in cold weather; if one forgets to put this in in time, cylinders, radiator or pump will freeze, with a resultant bill for repairs. Hence, other things being equal, a successful air-cooled motor should appeal to the physician rather than a water-cooled one. On the other hand, there is no air-cooled motor at present on the market which can be had for less than $1,400 for a four cylinder physician's runabout (200). I am not sure, however, but that the difference in price would be more than made up in comfort to the owner. Many physicians of my acquaintance use air-cooled motors with perfect satisfaction. For non freezing I have used both calcium chlorid and a combination of two-fifths alcohol and three-fifths water. If the calcium chlorid is pure, I do not think it acts on either the copper radiators or the rubber tubes. It is cheaper than alcohol and has the advantage that as the water evaporates by the heat, all that is required is to add more water, while the alcohol solution constantly uses up the alcohol by evaporation and has to have more alcohol added.

Whatever engine is chosen should have a simple clutch mechanism. For a physician's use I think the simple, two-speed planetary clutch with direct drive on the high speed is as advantageous as any, and with an engine of sufficient power so that nearly all work can be done on the high speed, makes much less noise and is really more satisfactory than the more elaborate three-speed, sliding-clutch transmission mechanism, which makes considerable noise on both the first and second speeds.

Importance of Good Oiling Service.

An efficient oiling arrangement should be an essential part of a car and should be carefully looked after by the intending purchaser, as gasoline engines running at high speed require constant lubrication, and there is immediate trouble in case the lubrication is at fault. This should be looked out for early, and if there are many tubes the owner should see that all of the tubes feed oil properly. I have had the experience of having one tube clog, with the result that one of the piston cranks heated, the babbitt all melted and the entire cylinder had to be taken out for repairs, due entirely to defective oiling.

The car should be light and of long wheel base, and a weight of not much over 75 to 80 pounds per horsepower. The extra weight is of no advantage, requires power to move and increases the tire cost.

The Tire Problem.

Tires have been one of the great bugbears, but I have found that if a tire a little larger than the maker provides on the machine be used, the tire cost is very much reduced. Although all the makes of tires cost the same price, there is a great difference in the quality and in the way the purchaser is treated by the individual tire concerns (202) and if the physician chooses his tire right there will not be as much trouble in the future. I prefer the simple clincher, which goes on and off the rim easily and can be detached and a new tube put in in a very short space of time even on the road (201). I have made experiments with various forms of tire covers and have abandoned them all as impracticable and not commensurate with their cost. The rear tires can be equipped to advantage with the Bailey tread, which is put on by all tire makers. The statements which accompany the advertisements of a tire amount to nothing. The only way you can find out about them is from users.

After having various things tumble out of my first machine (203) while it was going, I made one change in design which I think could be adopted with advantage by makers of runabouts for physicians' use, namely, the addition of a three-inch side-piece to prevent small things and one's bag from tumbling out of the car. As a physician often carries various bags and bundles, this small point is one of some importance. It is also easier to keep the feet warm in winter when the side panel is employed.

It will probably cost more to keep an automobile than a horse, yet the machine does a great deal more work than the horse and does it very much more quickly; one can also take his family or friends in it to an extent that a horse-drawn vehicle would not be capable of. I live a portion of each year 17 miles from my office and make the trip in from fifty minutes to an hour, when the length of time required by street car would be so great as to preclude the possibility of such residence.

The Manufacturers of Whom to Buy.

Every automobile built requires attention and repairs. The intending purchaser should choose that one which seems the most simple, has abundant power, whose manufacturer is anxious to have the machine satisfactory to the purchaser (many manufacturers do not seem to care), and it should receive constant oversight from its owner. Under these conditions it is doubtful if many physicians, who once begin the use of an automobile, will return to the horse.

Automobilia of Punbad the Railer.

Judge not an auto by its smell; all comparisons are odious.
It is a short ride that hath no mending.
All does not go that glitters.
An auto is not without odor save in its own front seat
Oils well that ends well.
To speed is human, to be caught is fine.—*Century*

A TERSE ENDORSEMENT.

E. H. KESSLER, M.D.
ST. LOUIS.

ON paved streets the automobile is practicable the year round. The roads are the only consideration, the condition of the weather cuts no figure.

To say what car a physician should buy is not easy. After nine years of daily use the car which comes nearest my ideal is the following for a runabout: The engine in front. A three-speed sliding transmission, shaft drive, with engine and transmission well protected from below from mud, water and dust. The car will weigh 1200 to 1400 pounds, and the engine will develop 12 to 14 H.-P. When the doctor has such a car as I describe he will have the best the world is producing to-day.

Can the average doctor run an automobile and look after it himself? Sure; it is not near as complicated a piece of machinery as the human body. With a couple of weeks' application any one of average intelligence can get along fairly well with the average car. For winters' use a few extra things must be considered, which in the summer give no trouble.

THE OBJECTIONS TO THE USE OF THE HORSE.

HARRY SUMNER KISKADDEN, M.D.
DETROIT.

EIGHTEEN years' experience with horses and two with an automobile convince me that the machine is preferable, because the same calls, especially if scattered, can be made in about one-half the time, icy streets and slippery asphalt are gone over like dry summer pavements, raw winds, cold rains, sleet and snow never make you pity the poor horse, you never shorten your call because your horse is standing, overheated, in a cold rain, nor go to the window to see if he is tired of waiting for you and gone to the barn; you don't have to stop to tie and blanket, nor untie and uncover, you can leave your machine stand in any kind of weather, in front of your office for hours, you never smell of a sweaty horse, nor are you covered with hair blown on you from his loose spring coat.

The automobile has many troubles which only he who drives one can know about, but with each year's improvements these defects are disappearing. My experience has been with a gasoline machine (204), a two-cylinder 16-H. P. type, with engines under the body and chain drive. For winter I used an ordinary top with plate-glass storm front, which kept me perfectly warm and dry in all kinds of weather. I now drive a three-cylinder, 28-H. P. machine (205), with two-cycle engines under hood, sliding gear transmission and shaft drive. This machine starts on the spark without cranking and is much quieter and cleaner than the old machine was with its engines under the body.

In Long Run Auto Is More Expensive.

While the upkeep and operating expenses of an automobile are about the same as that of a pair of horses, the life of the machine is not as long as that of the horse, and the necessity of a new one in two or three years makes the auto, in the long run, the more expensive. My first machine cost $1,200. The maintenance was $25 to $30 a month. After two years' use I sold it for $700; this would bring maintenance and depreciation up to about $50 a month. One of my boys took care of the auto; had I kept a man, as I did with horses, the average cost a month would have been $85 or $90. My machine with five passenger body cost $1,500. The extra coupe body for winter use will cost about $500 more. This is a two-cycle engine machine, and I believe it can be maintained at an average cost not to exceed $15 a month. A two-cycle engine has twenty-five to thirty less small parts to get out of order than a four-cycle engine, and I believe is the coming motive power for automobile use. The maintenance of a pair of horses, kept in my own barn, including man's salary, was about $65 to $70 per month, not including depreciation of horses and four vehicles (closed carriage, single top buggy, surrey and cutter). The maintenance of two horses, closed carriage and single buggy (not including driver) in boarding barn was about $45 a month. This one fact must ever be kept in mind, that you go so easily and so fast with the machine that during the year you make three or four times the mileage that you make with a horse.

Ignorance Is Not Bliss.

Know the anatomy of your car and be able to tell by its pulse and respiration whether it is doing healthy, perfect work. I know a man who drives an automobile and knows so little about it that on one occasion when the lap robe caught on the switch and threw it off he abandoned the machine, took to a street car and sent a man to get the "thing"; the man had only to throw on the switch, crank the engine, get in and ride home.

A PLEA FOR SIMPLICITY IN CONSTRUCTION.

WILLIAM FULLER, M.D.
CHICAGO.

EXPERIENCE with five different machines, during as many years, has almost at times convinced me that a good old horse had many desirable and unappreciated qualities, and that the trolley and cable cars were very economical as a means of travel and entailed but very little worry or responsibility.

But that the automobile has come to stay, and that it will eventually supersede all other means as an aid to the physician in his work, lacks no further proof or demonstration. The real question then arises, what machine will prove most practicable and satisfactory under all conditions of weather, and will give not only the least trouble, but prove the most economical? In my judgment it is that machine which is simple in construction, with four or preferably two cylinders, air cooled and with 10 to 20 horsepower. It should weigh 1,000 pounds or less and be equipped with solid tires. I use a machine (188) which cost me $650, without top, and which has cost me less than $15 each month for repairs, gasoline, oil and electricity.

The Tire Trouble.

The average automobile in use to-day is unsuited for solid tires, as it would make a very hard riding vehicle, and be very detrimental to the machinery. There is, however, on the market a machine or two with wheels of large diameter, taking solid tires and, with the proper springs, as easy riding and comfortable as a horse-drawn vehicle. The original cost of this particular solid tire is small, much less than the cost of the ordinary inner tube; it never punctures and will wear like the tire on the Goddard phaeton.

Pneumatic tires are a source of great expense and much trouble, and the life of the best is at most about one year. It is often less than half this, not to mention the numerous punctures and the expense of having the casings recovered, which is necessary, as a rule, at the end of four or five months' wear. The annual or more frequent replacement of the medium-sized pneumatic would mean at the most conservative estimate $200 per year. The car requiring such tires would run up a good expense account in repairs, and with the needed yearly overhauling, would amount to $300 or more and, in numerous instances of my own knowledge, twice that amount. If now the salary of the chauffeur, and cost of gasoline and oil, be added to this amount, some sort of an idea may be had regarding the expense of running the average automobile.

The Beauty of Simplicity.

Granting that the income of the physician would permit this expenditure, it remains a fact that just as much service can be had from the use of such a machine as is above recommended for at least 75 per cent. less money. Such cars as this have no friction clutches, live axles nor differential gears, are equipped with the most simplified driving mechanism, and when annoyances arise their adjustment is an easy matter and is done without incurring expense. These automobiles can be operated without a man, and actually require but little of the owner's time to keep them in running order. The hired man, in many instances, is almost as much of a nuisance

as the pneumatic tire. He remains long enough to learn the machine, then without notice quits his job, thus making it necessary for the physician to duplicate the experience.

The details of a simple machine are soon mastered, and perfect knowledge of its workmanship and familiarity with it in every way will enable one to tell almost without inspection just where the trouble lies when it does come, or render it possible to locate it without delay. There is, too, like driving your own horse, a great advantage in knowing your own machine. It runs better, will last longer, and the time actually devoted to it, furnishes very desirable and beneficial recreation.

A light car, air cooled, with solid tires, and rather under than over 20 horsepower, thoroughly understood, operated and looked after by the owner himself, will prove an economical, satisfactory and practical proposition, and lies within easy reach of every physician.

ONE ENTHUSIAST'S EXPERIENCE.

CHARLES H. DeWITT, M.D.
GLENWOOD, IOWA.

DURING the past two years I have learned many things about the automobile. At the time of purchase (March, 1904) I knew nothing about it—in fact, very little about any machinery. My first experience was with an 8-horsepower runabout (186), which I used about two months; I then concluded that I needed a car of more power, so changed to a 16-horsepower, two-cylinder machine (187), which I have used ever since.

I had much trouble and many discouragements in my early experience. One of my farmer friends used to say that he kept the harness on his mules night and day to prevent delay in hauling me in.

My car has two speeds, a forward and a reverse. Speed varies from 6 to 35 miles an hour. During the last year and a half the car has never been in the repair shop, all adjustments and repairs being made by my hired man, who has become an expert. I keep the machine in my barn, where all work is done on it. I formerly kept two teams. I now keep one family horse and very seldom resort to livery hire. In the first few months of my motoring slight troubles, such as a disconnected battery or a wire either from coil batteries, spark plug or governor, would make me entirely helpless, but now they are easily found and repaired in a few moments.

I am an enthusiast and believe that the extension of rural free delivery and better roads in consequence will not only make the automobile practical, but almost a necessity for the country doctor. I can go anywhere that I can go with a team, except in deep mud. In snow, except in drifts, that would greatly handicap a team, a motor car is entirely practical.

THE NEED OF A PHYSICIAN'S GOOD AUTO FOR FIVE HUNDRED DOLLARS.

EDWARD H. ABBOTT, M.D.
ELGIN, ILL.

ABOUT two years ago I purchased a small, water-cooled, single-cylinder runabout (213) with all the improvements and conveniences of that time. I wanted it to take the place of the horse-drawn vehicle in my work. I did not expect to be free from troubles in the new way of locomotion, since I had been closely watching some of my friends who had already taken the step. I immediately released my driver and disposed of my horses and so was compelled to trust entirely to the new vehicle.

My first troubles were tire trouble and, until I had disposed of all four tires (214) and second a set from another maker (215) my troubles continued. The second set of tires did good service throughout the remainder of the season and all through the succeeding season. I had but one puncture during the season of 1905. Notwithstanding my inexperience, I did all of my work until late in the season in the year 1904, excepting in the most stormy weather, when I used the street cars and a few livery rigs. During the winter I had the machinery overhauled and the body repainted and varnished. My machine cost $750 and the season's maintenance cost $175, including one complete set of tires, new tanks and other repairs.

Needs Eternal Vigilance to Keep Bolts Tight.

In 1905 I found various ways of improving the vehicle. I put in copper tanks of large capacity, a new carbureter and circulating pump. This brought my machine up to date again, and it served me fairly well throughout the summer season. Most of the troubles I had in these two years were: 1, With the poor quality of tires; 2, with the water circulatory apparatus; 3, with the insufficiency of valves; 4, minor troubles with shaking loose bolts, and with starting the motor. The tire troubles were overcome by disposing of the first set. With the water circulation I have always had more or less trouble. I have also found that the motor valves need frequent attention and regrinding and that eternal attention is required to keep every bolt and nut secure.

The Ideal Vehicle.

I believe that the doctor's ideal vehicle has not yet appeared, although several new models show a tendency in that direction. In my opinion, the ideal running gear will be large wheels like those of a carriage, with carriage tires; a double-cylinder two-cycle motor, air cooled, with automatic lubricator; a transmission without gears; a differential also without gears, with a fixed rear axle; more carrying room in the box; and a speed of from 15 to 25 miles an hour on level roads. The motor should be so arranged that each cylinder could be shut off or turned on at the will of the operator, thus making it possible to run with one cylinder, except where the roads are heavy or where grades are to be climbed. When such a vehicle can be produced, and at a moderate price, say $500, I believe that every doctor will consider such an outfit as necessary in his general work as his medicine case, his operating chair or table, or any of the essentials of his equipment for practice. I am satisfied with my experience in the use of the automobile and shall continue to be a devotee of its use.

THREE YEARS' EXPERIENCE IN NEW JERSEY.

D. EDGAR ROBERTS, M.D.
KEYPORT, N. J.

AUTOMOBILE experience had its beginning for me in 1903, when I bought a second-hand, curved dash runabout (182). I did not expect it to do all my work, but bought it to learn something about gasoline motors. It saved my horses some, and is doing fine service as a pleasure car still. My work is in town and country practice. The main roads are good, with some pretty stiff grades. The cross roads have some heavy sand and very steep hills. My drives vary from 10 to 50 miles daily.

What Is Needed Is a Physician's Auto.

After using the runabout a few months, my ideas of what I needed were formulated about as follows:

1. The tread must be the same as for carriage, which, in New Jersey, is 58 inches from center to center of tires on ground. For business purposes I would have nothing else.

2. The vehicle must carry two, have a top, plenty of space for satchels and must ride easily.

3. There must be high power and light weight, compatible with safety.

4. Ease of access to working parts and of removal of all parts is necessary.

5. The car must take all ordinary hills on high speed, as well as sandy roads, with ability to make 20 miles an hour.

After a long search I found a car (183) with three cylinders, weighing, with top, tool box and tanks full, 1,225 pounds, with 36 inch rear wheels. It filled all my requirements. I began using it in April, 1904, and used it both that year and the next with great satisfaction. My driver does all the work, as I have no time for that. When trouble comes, if not apparent, I generally make the diagnosis. Exclusive of the work at home, my expenses were about 10 cents a mile.

Mileage, about 4,500. I used horses a great deal, both from necessity and comfort. My car has been thoroughly overhauled at an expense of about $100, and it seems better than ever. It was a little expensive for me, needed much adjusting and the pneumatic tires were uncertain and expensive.

For several years I had been watching the development of a runabout whose peculiar mechanism interested me, and in January of this year bought one (184). It has high wheels, solid tires, plain bearings; is air cooled; has no gears; no differential, no live axle, no gaskets, no clutch. It rides comfortably as a carriage at same speed. It has two sets of sprockets and short chains high up out of mud and dust. It has given excellent satisfaction, does good work in mud and snow and on hills, but is not quite what I could wish for in sand. I still use two horses part of the time.

I feel very sure my troubles and expenses will both be reduced one-half on my last car. It is very easy and cleanly to care for. Each car does about 15 miles an hour on our roads. My horses do about 10 miles an hour. One will have more trouble and expense than the auto advertisements lead one to believe. Some manufacturers are very unaccommodating.

THE AUTO ON THE PACIFIC COAST.

H. A. L. RYFKOGEL, M.D.
SAN FRANCISCO.

I AM using my third automobile. The first was a light runabout (220), with a 3½-H. P. French motor on the rear axle. I drove this machine 20,000 miles in three years. Although I did more running around with it than I could have done with a pair of horses, the expense amounted to less than the care of one.

My present (221) is a 1200 lb. runabout with a two-cylinder opposed motor under the bonnet. I find it very much more satisfactory than a team. It is just as reliable, does away with the necessity of keeping a driver, can be left outside my office without attention, is no expense when not in use, can be used at a moment's notice, day or night and, of most importance, can get over ground so rapidly that it adds much time to the length of one's day.

The Terrible Repair Man.

There are some objections to the automobile which fortunately are overcome by its many advantages: 1. The rapacity and incompetence of many of the repair shops. 2. Trouble with the tires. If one is careful to select a competent mechanic to make repairs and then specify exactly what is to be done, the former difficulty can be avoided. The second question is purely a matter of luck.

On the whole I believe in the automobile for the physician but I should advise him not to buy a cheap machine nor one that is only in its experimental stage. If he does, the repairs will soon eat up the difference and he will not have had the satisfaction that comes with a well-made article.

THE COUNTRY DOCTOR AND THE AUTOMOBILE.

W. P. HARTFORD, M.D.
CASSVILLE, WIS.

NO class of men is so vitally interested in the automobile question as the country doctors, and it is a great mystery why some enterprising manufacturer has not built a machine for our special use. It costs more to keep tires in repair than all other bills combined. Transmission is a nightmare to the builder and user alike. Cooling, especially in the winter, is a problem that is of vital interest to the country doctor. The air-cooled motor appeals to him every time. He must have a car that will almost climb a tree and light enough so that he can pry it out of a ditch with a fence rail. It must be uncomplicated, as he is not a machinist, but from the very nature of his business he is a man of resources and quick to diagnose the trouble, but he must have a machine that will not break down. A broken plug or wire or bad adjustment of carbureter is quickly remedied after the trouble is located. Of all men (I won't except any, not even the trained mechanic) the country doctor will be the quickest to learn to locate and repair any minor ill such as constitute 95 per cent. of the motor failures. Exhaust and admission valves simply can not be made so that they will stay in good order.

The price—there is the rub. The country doctor is hard up. He won't own up to it, as the dear public won't employ the man they think is not successful, so he is obliged to put on a bold front, but when automobiles are cheaper, quicker and equally certain, he will quit horses.

Now, with a machine with the above trouble-making features eliminated, there will be left a car that will have only three points to look out for: Compression, which can be tested infallibly in a fraction of a minute (anyone who has swung the balance wheel nearly to the compression point and felt the live, springy elastic rebound, will recognize it instantly ever afterward); fuel supply, which is easily learned. The spark, which is usually to blame, is easy to test out. If these three are right, the engine will run. They are the heart, lungs and stomach of the machine. Of course, it will have attacks of indigestion, and I have sometimes suspected it of malingering, but always found some real cause for the illness.

An automobile with three or four three-part, two cycle cylinders without any transmission gears, would be a long stride ahead. The two cycle is very much cheaper than the four cycle; has about 1.8 as much power as the four cycle of the same weight; has only three moving parts, the piston, connecting rod and crank, none of them liable to get out of order; with three or four cylinders it can be slowed down to one hundred revolutions a minute; runs backward as well as forward; and with a jump spark can be reversed while running. If made with well-fitting pistons, it can be started some little time after it has been stopped by turning on the switch. Solid tires on large wheels would be an improvement on the pneumatic tire. There would be no punctures at any rate, and a solid tire on a large wheel would probably ride as easy as a pneumatic pumped up hard on a small wheel.

The country doctor who could buy an automobile for $500 that would go through anything and go sure every time, make 15 miles an hour and last ten years, would sell his horses and buy one to-morrow.

FACTORS IN SUCCESSFUL AUTOING.

WALTER RUPERT WEISER, M.D.
SPRINGFIELD, MASS.

EXPERIENCED physicians agree that the practicability of the automobile, as a vehicle for physicians' use, is no longer a problem to be solved, and that, with fair roads, a physician can do a large practice more expeditiously and with less expense.

Buy a Car Proved Good by Others' Experience.

The character of the roads, the type of machine used, and the operator, are all factors in the degree of success obtained. In a locality where six to eight inches of mud or snow are the rule during eight or nine months of each year, the pleasure of operating decreases, while the cost of maintenance increases. Again, many of my friends have not met with a full measure of success, because they have made their first experiment with a machine that was worn out by a previous owner, or one that was built to sell cheaper than a good substantial automobile can be sold. Finally, the man who forgets to lubricate his car, or who fails to replace a bolt or two when they have dropped out or runs through a pile of glass, instead of around it, will naturally have many more troubles to relate than the operator who occasionally has his car looked over and uses it as a piece of good machinery should be used.

My experience covers a period of six years, during which time I have owned ten machines of various types, and operated many others. With my last car (178), I covered nearly ten thousand miles at a cost, including fuel, oil, repairs to car and tires of $160. It is necessary to keep my car at a public

garage, so that for storage, washing and delivering the car I pay an additional $15 a month.

It is unwise to buy a new and untried type of car. They all look beautiful in the splendor of new paint and upholstering, and ride splendidly in the hands of the expert agent, when new, but when you are giving the machinery such work as is required by a physician in bad weather and bad roads the results are different.

Cars Are Made Better Now.

Each successive gasoline car I purchased was better than its predecessor, until now I have practically no troubles and my expenses are small by comparison with an equal mileage made with horses. This perhaps is due to the facts that automobiles are built better and that experience in operating saves many difficulties. My total mileage has been about seventy-five thousand miles, having spent several vacations in touring the New England and Middle states, besides continuous use for six years in a consulting practice covering a large territory. From the experience thus acquired I submit the following conclusions:

1. Electric cars are quiet, easily controlled, clean, and start without cranking, but they are heavy, due to excessive battery weight, the batteries require much attention, and are easily injured.

2. Steam cars are quiet, easily controlled and start without cranking, but the many things to watch and care for render it impossible for the operator to do or think of much else.

3. Gasoline engines have the disadvantage of starting with a crank, but an operator soon learns to manipulate the starting device and the trouble is forgotten in considering the many advantages gained by using this type of engine.

Annoyance Replaced by Satisfaction.

I run my car every day in all sorts of New England weather, and during 1905 my total outlay was less than one-fourth of my expenses during the last years' work with horses. To be ready in an instant when in a great hurry is a satisfaction only appreciated by those who have had the experience. To be called at night when your driver is out, or incapacitated, is one of the most annoying episodes in the practice of medicine. With a gasoline machine in the barn, you are off with the simple turn of a crank. Arriving at your destination there is no horse to tie and blanket, and if detained several hours on a cold night one feels relieved in that his horse is not out in the cold and storm. You will have more time with your books and your family, especially if your work is scattered, and your outdoor work will become a pleasure.

SIX YEARS' SUCCESS WITH ONE CAR.

H. C. MARTIN, M.D.
SPRINGFIELD, MASS.

SOMEWHAT analogous to chronic ulcerative phthisis is the history and life of my little wagon; it has coughed and coughed and coughed for nearly six years and it is still living and coughing.

When I purchased it, July 17, 1901, automobiles were not considered sufficiently reliable to supplant the horse as a method of transportation for the doctor, and comparatively few doctors were using them in their practice in this vicinity.

Since then have used it constantly in my practice with the exception of portions of the winter when the snow was too deep to navigate. The little three wheeler (216) has traveled many miles more than 50,000, which record I dare say is equaled by few.

The Secret of Success.

I attribute my success to observing the following precautions: From one-half to three-quarters of an hour every morning is devoted to cleaning, oiling and thoroughly examining the whole wagon, tightening bolts, filling gasoline tank and riders. Oil is cheaper than wagons. When a part begins to show wear I get a new part and keep it handy, and as soon as I feel the old one will not last much longer I put in the new one, not waiting for the old one to break on the road. A man doesn't wait till his horse loses all his shoes before having him shod. Why do differently with an automobile?

I know it is easier, better and more economical to use an automobile in practice than horses, provided the roads are half decent. But they must have care. If a man pays $800 to $2,000 for an equine equipment he has a man to look after it, and if that man is not working on that equipment all the time he is advised to look for other employment. Many a man pays $800 to $2,000 for an automobile and doesn't hire a man to care for it, nor care for it himself, except to pour in gasoline and oil. Then he tells his friends what a lot of trouble an automobile is. How inconsistent!

NOT A PARTICLE OF ENCOURAGEMENT.

STERLING GIBSON, M.D.
THOMSON, GA.

I TRIED most faithfully for 14 months to get some satisfaction out of my automobile (225) but words are too feeble to express my experience, for I can not give the country physician one particle of encouragement. My practice extends from 10 to 15 miles all around Thomson and we have fine roads, too.

I always keep two horses, but got my machine with a view of selling one or both, but found I would have to get the third horse if I kept trying to use the machine.

I am now getting some solid tires and am going to try it again when I havn't much to do, nevertheless it is a very dear luxury for I often had to carry a machinist along and in a small town it is always trouble to get an automobile repaired. Their place is in the city, as they are too much expense for a country physician. I find it less expense to ke p two horses and a man to look after them than to use an automobile.

DOCTOR'S AUTOMOBILE ASSOCIATION OF AMERICA.

DAVID EDWARD HOAG, M.D.
NEW YORK.

AT present, manufacturers do not cater to the needs of the doctor. Their aim is to make and sell the large touring car, as the proportionate profit is greater. The manufacturers who make a high-grade runabout for doctors' use, do so only at a price nearly as great as the larger car. Not all doctors can afford two cars, so the result is, that much as a man may desire a large car for family use or for touring purposes, he is barred from possessing one on the grounds of expense—first cost, and later, maintenance. True, a man may possess a car with detachable tonneau, but even in that, there is something crude and inconvenient which does not appeal to the artistic conception of the average man, be he a layman or doctor. Then, too, the many petty annoyances of the average automobile, restrains the doctor from being quick to invest, much as he may desire one in other ways. I refer principally, to the inaccessibility of the machinery in many cars; the unwieldy and ofttimes unmanageable levers; the stubborn and undignified "cranking" of the gasoline motor; the dirt and smell of oil and gasoline when it becomes necessary to "fix things". It must be remembered that the doctor is not a sportsman; that is, he does not aim to be, while in attendance on professional duties. The enthusiastic automobilist who is out for pleasure, clad in his rubber armor or other motoring paraphernalia, does not mind to such an extent, dirt, noise and smell. He may even glory in it as an ear-mark of his devotion to the sport.

That the automobile has come to stay, is an undoubted question, and it is safe to predict, that as a conveyance in both city and country, its use will be prominent for many years to come.

A Doctors' Stock Company.

A small coterie of doctors, of whom I have been chosen as an official mouthpiece, have considered the advisability of taking steps to form an association to be known as the "Doctors' Automobile Association of America," the aims being largely that of that other organization, known as the "Automobile Association of America," namely, that of concerted influence on legislation which will promote good roads, the holding of

annual or semi-annual meetings, promoting social intercourse among automobilists, the establishment of a uniform system of rules and regulations governing the conduct of automobilists, the training of chauffeurs, etc. It is difficult to enumerate the benefits that might be derived from co-operation of this kind. The automobile industry, being still young, it seems reasonable to assume that to engage in the manufacture of the same, should hold out great inducements as a profitable enterprise. With this end in view, we have also considered the advisability of forming a stock company of doctors only, to embark in the manufacture of automobiles, particularly those automobiles adapted to doctors' use. In fact, we have gone so far as to prepare a prospectus and it has been our intention to send copies to every doctor in the states of New York, New Jersey and Connecticut. Our watchword is, "Automobiles for Doctors, by Doctors." It is not our intention to place any doctor under the slightest monetary obligation. What we want most at present, is the voice of the profession, its views, its opinions, and later, possibly, its hearty co-operation. This must be considered primarily as an investment, and secondly, to put upon the market an automobile which shall embody all the requirements of the doctor's automobile, as regards ease and safety of handling, speed, comfort, and at a price as low as manufacturing conditions will permit.

The Need of a Good Doctor's Car.

The circumstances that have gradually led up to placing this proposition before doctors, has been the absolute incompleteness of any small cars yet turned out by the manufacturers, as well as the extreme variation in price. Since it is a notorious fact that dealers do not encourage the manufacture and sale of the small car, and it is often cumbersome, both in bulk and price. Just as soon as the enterprise takes on some tangible form, efforts will be made to secure manufacturing facilities.

Among the other advantages to be derived from co-operation would be the establishment of garages at convenient locations in and about the territory referred to, and maintained under the auspices of the company. Stockholders would thus have the benefit of reliable care for their cars. The question of car maintenance would, in the aggregate, be reduced to a minimum, lessening the expense to the doctor by at least one-third, and at the same time showing the profit to the company.

This is briefly a synopsis of the plan we had in view. We should be very much pleased to hear from doctors in the different parts of the country, either approving or disapproving of the plan, with such suggestions as might prove of value.

49 West Thirty-third Street.

REPAIRMEN'S RUINOUS ROBBERY

J. C. STINSON, M.D.
SAN FRANCISCO.

WHAT it costs to run an automobile depends largely on whom you have dealings with. My first car was a single cylinder runabout (222) and I really hate to tell you what it cost me. The more I think about it, the madder I get. I bought this car from a local agent Aug. 2, 1903, and ran it myself until February, 1904. My original investment was $983, including the price of a tonneau, lamps and horn.

Greedy Garage Grafters.

It was nothing but graft from the time I received the car until I got out of the clutches of this octopus agent. I was charged up with more than enough gasoline to run a four-cylinder car, and the agent always found some work to do on it. It was never kept clean, and the lamps never did shine, while the charges for repairs, replacements, etc., were excessive. In proportion this was a greater graft than ar thing outside of the life insurance companies. I tried vainly to get some pleasure out of this car, but it was so poorly taken care of that I was stalled on the road a great number of times. My first bill of expense from Aug. 20 to Sept. 31, 1903, was $243.30.

I had a slight accident. I was let down by a street car running into my left hind wheel. I was going slowly and was not thrown out or in the least injured. The following charges were made by the agent: Going after car and bringing it to repair shop, work on rear axle, straightening pump handle, work on left front wheel and steering gear, and labor, $45.75; drayage on rig from repair shop to store, $5; express on wheels, $9.85; telegram to factory for parts, $1; one new steering knuckle, $12.50; two rear wheels, $50; three brass dust caps, $2.25. On showing the above charges to several capable, honest auto mechanics and other experts, I was informed that political grafting was nothing compared with this. The bills so far amounted to $1,226.30. My supply bill from Oct. 7 to 31 was $14.50. Repairs to Oct. 31, 1903, amounted to $51.45. Expenses from Oct. 31 to Nov. 30, $108.85; gasoline bill and storage to Dec. 1, $36; repairs, etc. to Dec. 29, $97.30; supply bill to Jan. 31, $14.

Thus, you see, I had a small single-cylinder car that cost me while it was in the hands of this agent $565, for four and one-half months' partial use; over $125 a month, some of which time it was in the shop. I afterward sold the car for $600, and I understood that the present owner is getting very good service out of it. If the above charges are not enough to make a man wild, I do not know what else would.

What Are Fair Running Expenses?

Now, what should be considered a fair running expense for such a single-cylinder car? I have carefully inquired into the matter at much trouble to myself, and averaging the opinions of practical auto men, I find that for a run of 35 miles a day, such as a physician would make in his calls, a single-cylinder car would use 3 gallons of gasoline and 3 pints of oil. It would take nine hours' time to cover this distance, allowing for stops, and this would use every bit of power in the machine. Total repairs, year in and year out, would amount to $15 a month; gasoline, $22.50; oil, $7.80; a set of tires complete last five or six months, $148; storage for such a car, $20 or less a month. Some physicians may want a chauffeur for such a car, but this does not appear necessary to me. A competent, reliable chauffeur can be obtained at $60 a month. Such a man can store this car for $5 to $10 a month and in other ways save you many expenses.

I bought my two-cylinder, 16-horsepower touring car (223) Jan. 23, 1904, and used it up to the time I bought my four-cylinder, 30-horsepower car (224), some months ago. To run the two-cylinder car, it cost me $1,162.42 for eleven months' expenses, or an average of about $106 a month.

The cost of running a two-cylinder car is not much more than a single one. For a 35-mile trip 4½ gallons of gasoline is required, making $33.75 a month for gasoline; $1.30 covers oil and $25 repairs. Tires last five months and cost $208 for a complete set. With stops for calls it takes a two-cylinder car eight hours to run 35 miles a day, and this uses the engines right to their limit. Storage is $20 to $25 a month. Any physician ought to readily run his own two-cylinder car.

Four Cylinders Most Satisfactory.

With the four-cylinder car, to run 35 miles a day, will consume 4 gallons of gasoline per month, while oil comes to $2.60. Repairs year in and year out, amount to $20 a month; storage costs $35 a month. Tires $252 for a set which will wear four to six months. A chauffeur will cost $75 a month. Reckoning all expenses, a four-cylinder car (including driver) should not cost more than $175 a month, including breakage, replacements and tire bills.

Horses are things of the past for the physician's use. I have fully made up mind that the four or more cylinder car is the one for the present and future. It is quiet, fast and fairly reliable; you do not often use all the power in it, you go quietly to your patient, with no noise or disturbance. This cannot be said of the single or two-cylinder cars, as they are all more or less noisy.

Advantages Over the Horse.—Dr. E. M. Hetherington, Kansas City, writes: 1. The auto saves from 25 to 40 per cent. of time in making calls. 2. It saves about the same per cent. in cost. 3. It saves much trouble and worry and it is more comfortable than a horse-drawn carriage. Garages I found exhorbitant. When a man has learned his machine and handles it carefully he will have little trouble with it. I would not exchange my automobile for the best team, outfit and coachman.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, APRIL 21, 1906.

THE EFFECTS OF SPASM IN SCLEROTIC ARTERIES.

To the trained finger palpation of the pulse discloses two conditions, the state of the circulation and the condition of the blood vessel, and it is of the highest importance that the two be differentiated. The former is an index of the action of the heart, while the latter may be due either to local influences or may be part of a more or less widespread disturbance. Blood pressure and vascular tension depend on the relation between the volume of blood and the energy with which it is propelled on the one hand and the state of the vessel on the other hand.

The vessel wall may be thickened as a result of either functional or organic change. That is, the muscular coat may be contracted in greater or lesser degree in response to various stimuli; or one or other tunic may be the seat of hyperplasia or degenerative change. For the first we have at command certain measures of prevention and relief, while the second, apart from its dependence on syphilis, is beyond the reach of therapeutic intervention. It is, accordingly, important to recognize the part played by each of these sets of conditions in the development of the symptoms in any given case.

Atheroma and arteriosclerosis, with or without calcareous degeneration, are the common causes of organic vascular thickening and are to be expected after the middle period of life, although occasionally they appear earlier. It should be borne in mind that vessels so affected may exhibit in addition, thickening from contraction of the muscular coat. Some of the cerebral manifestations observed in the presence of such associated conditions are described in a recent communication by Dr. William Russell.[1] For example, there may be sudden paralysis, hemiplegia, monoplegia, aphasia—without loss of consciousness. If the circulation through the contracted vessel is soon restored, spontaneously or therapeutically, perfect return of function will take place. Otherwise, the disturbance will be permanent. The result is in some measure dependent on the power of the left ventricle. If the action of the heart be feeble, the circulation may not be restored; while, on the other hand, if the heart's action be unduly strong, the diseased artery may be ruptured.

Among other symptoms attributable to spasm in sclerotic arteries are vague pains in the head, attacks of giddiness, restlessness, insomnia and mental excitement.

1. Practitioner, March, 1906, p. 306.

In the presence of paralysis the condition must be differentiated from cerebral hemorrhage, thrombosis and embolism, and the diagnosis may be of exceeding difficulty. As has been pointed out, hemorrhage may actually take place as a result of rupture of a contracted sclerotic artery if the action of the heart be exaggerated, while a thickened blood vessel with narrowed lumen affords favorable conditions for the formation of a thrombus, particularly if the circulation be sluggish. Embolism is usually associated with valvular disease of the heart and can occur only when it is possible for a plug to be detached in some portion of the circulation and to be swept into the blood stream. Even then, the cerebral vessels are less likely to be the seat of obstruction than other larger vessels. The effects of the three conditions mentioned, namely, hemorrhage, thrombosis and embolism, are more likely to be permanent than those attending spasm in sclerotic arteries.

The prophylaxis, in the presence of a tendency to spasm of sclerotic arteries, consists in avoidance of the causes, among the most important of which are absorption of toxic matters from any source and deficient elimination on the part of the emunctories. The treatment comprises not alone the removal of these faulty conditions, but also the administration of vasodilators, with or without appropriate cardiants.

PROTECTION AGAINST DANGEROUS MEDICINES.

In our news columns last week announcement was made that the Committee on Public Health of the Massachusetts Legislature had reported in favor of a "patent medicine" bill, which evidently is a substitute for several bills previously introduced. This substitute bill contains an amendment which provides that unless the package contains more than two grains of opium, or more than one-quarter grain of morphin, or more than one-sixteenth grain of heroin, cocain, alpha-eucain or beta-eucain, or more than eight grains of chloral hydrate, in one fluid ounce" it is not necessary to mention on the label that these drugs are contained in the preparation.

As we understand it, practically the same principles are incorporated in an amendment to the national Pure Food Bill tentatively adopted, at the request of the proprietary medicine interests, by the Committee on Interstate and Foreign Commerce. These modifications are made, undoubtedly, with the best of intentions on the part of the members of the committees, as a compromise to satisfy the Proprietary Association of America.

We respectfully suggest, however, that a law carrying such provisions will not protect the public from that dangerous class of preparations against which it is directed. For instance, Kopp's Baby's Friend, Mrs. Winslow's Soothing Syrup, Bull's Cough Syrup, and analogous preparations containing opium or its deriva-

tives, can still keep up their deadly work. Some of these preparations may have to reduce the amount of the narcotic they contain, in which case all that will be required is an increase of the dose. It is the opiate in these preparations that sells them—that does the work. Take it away, or reduce its content to a point that it will have no effect, and there will be no demand for the preparation. If a medicine contains any habit-forming or dangerous drug there must be a sufficient quantity to produce a therapeutic effect. If it does not contain a sufficient quantity of the drug to produce this effect, then it is the acme of foolishness to put it in at all. On the other hand, if there is sufficient to do good there is sufficient to do harm. This can not be denied. Reduce the amount of the opiate in Chamberlain's Cough Syrup to the point where it will have no appreciable effect and it will no longer control the cough. Let a sufficient amount be retained to control the cough and it will certainly be enough to produce the habit or to kill if taken in a sufficiently large dose.

The proprietary medicine men realize that the people in certain states are sufficiently aroused to demand legislation, and so they bend all their efforts to make it so mild that it won't hurt them. They realize the seductiveness of the plea that there is no danger in small doses, and push this idea for all it is worth. But every physician knows that right here is where the danger lies. Drug habits are not formed by commencing with full doses. It is in the insidious small dose, gradually increased, either in time or in size, that the danger lurks. It is in the overdose taken accidentally or premeditatedly, without knowing the peril, that the danger lies.

There are occasions when it is wise to compromise and to take the proverbial half a loaf rather than no bread at all. But it is never justifiable to compromise with crime, and that is what will be done if the proposed amendments are allowed to be incorporated in a law. Better no legislation at all than that which legalizes a business that thrives on the moral and physical degradation of human beings and the slaughter of children.

If a layman should go to a drug store and ask for, say, a half-grain of morphin, the druggist would refuse to sell it until he had inquired into the use to which it would be put; but if the same layman should ask for a two-ounce bottle of a proprietary medicine containing the amount allowed by this proposed amendment, he would get it, although the medicine might be nothing but the morphin and simple elixir, or simply morphin and water. The same layman might be refused a half-dram of chloral hydrate, but he could buy an eight-ounce "proprietary" mixture containing more than a dram of the drug without question. A druggist in Chicago would be, and is, punished if he sells a layman half a grain of cocain; but, according to the above, he can sell it if it is in a "patent medicine," provided it is dissolved in an eight-ounce mixture, no matter what the mixture may be—simply water, possibly—and he would be justified in so doing by these proposed amendments. Thus the proposed amendment to the Pure Food Bill would make legal that which is illegal in many localities.

It must not be forgotten that, while it is comparatively easy to detect some of these drugs—morphin, for instance—it is often exceedingly difficult to determine quantitatively the amount present. Thus it would be hard to prove that a certain medicine contained more than the amount of the drug allowed by law.

We repeat: There should be no compromise with this crime. Better let matters go on as they are until the public is awakened a little more rather than adopt such a law as is now proposed in Massachusetts and in the amendment to the Pure Food Bill. If these dangerous drugs are to be allowed in patent medicines, then let the label tell.

THE TOXINS AND ANTITOXINS OF POISONOUS MUSHROOMS.

The most important of the poisonous fungi is *Amanita phalloides*—"deadly amanita." A hundred years ago Bulliard, the great French mycologist, named it "destroying angel." Its abundance, its superficial resemblance to edible mushrooms, its delicious taste, and its extreme toxicity—a third of the top of a small plant has killed a 12-year-old child—fully justify these characterizations.

At present our therapeutic measures are of no avail in the treatment of severe cases, and consequently scientific studies of the toxicologic properties of toadstools may give results of practical value. The recent study by Ford[1] of the poisons of the "deadly amanita" show (1) that they are of the nature of true toxins in that their action on the animal body becomes apparent after a period of latency or incubation; (2) they produce lesions similar to those of certain bacterial intoxications, and (3) they produce in animals on immunization specific antitoxins.

Right here attention may be called to the fact that the word toxin is being used in a loose manner likely to result in confusion of ideas. In a strict sense only relatively few poisons, microbic or otherwise, are true toxins. Strictly speaking, toxins are soluble poisonous products of bacterial, vegetable and animal origin of as yet unknown chemical nature, but resembling organic ferments in great sensitiveness to heat and other influences. The action of toxins in the susceptible animal body becomes apparent after a variable period of latency and in suitable animals they give rise under special conditions to specific antibodies, antitoxins that neutralize the respective toxins *in vivo* as well as *in vitro*. These characteristics sufficiently demarcate toxins from other poisonous substances of diverse origin, and physicians should not, as is now commonly the case, apply the word toxin indiscriminately to all the poisonous bodies concerned in infections and certain intoxications.

1. Jour. Infect. Dis., 1906, vol. iii, p. 191.

Returning to the toxins of *Amanita phalloides,* Ford succeeded in immunizing animals so that they were able to withstand multiples of fatal doses of phalloides extract and to yield a serum, 1 c.c. of which neutralized 10 times the fatal dose of the extract. The best known of the toxins of *Amanita phalloides* is the phallin of Kobert, which is a strong laking agent for red blood corpuscles. Immune serum was found to suspend this power, that is, to be strongly antihemolytic.

Whether or not sera of still greater strength and suitable for therapeutic purposes can be obtained from larger animals, like the horse, remains to be seen. In spite of the general knowledge now prevalent in regard to mushroom poisoning and of the differential characteristics of mushrooms, cases of such poisoning are bound to occur, the majority always from "deadly amanita." Consequently, there is a need for curative sera. The diagnosis is usually easy, and death, which is the case in from 60 to 100 per cent., usually occurs a few days after the actual poisoning, so that the natural conditions are favorable for specific serum treatment.

THE RELATIONS BETWEEN HUMAN AND BOVINE TUBERCULOSIS.

In 1898, Theobald Smith established two races or types of tubercle bacilli, namely a bovine and a human type. He pointed out that the differences demonstrated in the two types of bacilli indicated that the fear with which bovine tuberculosis was regarded at that time probably was unreasonably exaggerated.

In 1901 Koch startled sanitarians the world over by the announcement that in his opinion the bovine disease need not concern us in our struggle against human tuberculosis because there was a most radical distinction between the human and bovine types of the disease.

There followed a general re-investigation of the problem out of which two facts have emerged as definitely settled, namely: (1) The existence of two types of mammalian tubercle bacilli, the bovine and the human; and (2) the occasional occurrence of bovine bacilli in cases of human tuberculosis. How frequent invasion of human beings by bovine bacilli actually is can not be stated. Attention so far has been given principally to intestinal tuberculosis and Theobald Smith, in his last review of this subject,[1] believes that the ratio of cases of intestinal tuberculosis associated with bovine bacilli may be estimated roughly at from 20 to 40 per cent. Now intestinal tuberculosis is a relatively rare disease; not infrequently it becomes stationary; and it is encountered, especially when associated with the bovine bacillus, almost entirely in children under ten years of age. So far as we know now, phthisis and other forms of tuberculosis in the adult are practically always of human origin.

Assuming that these statements represent truthfully the actual present state of our knowledge concerning the relation between bovine and human tuberculosis, then there is no escape from the conclusion that bovine tuberculosis is a minor source of tuberculous infections as compared with the other and major source, the tuberculous human being.

The problem of reducing this minor source of tuberculosis to the minimum must be left in the hands of our boards of health and cattle bureaus. In this case the question of adjusting fairly the interests of public health and economic considerations is a delicate one. The fact that bovine tuberculosis, regardless of its relation to human infection, causes annual losses to cattle owners, may prove a powerful factor in the gradual elimination of bovine tuberculosis.

1. Amer. Jour. of Publ. Hygiene, 1906, vol. xiv, p. 516.

THE AUTOMOBILE FOR THE PHYSICIAN.

To no class is the development of the automobile of more importance than to physicians. How to reach their patients in the quickest, surest, easiest and cheapest manner is a practical problem to them. The doctor's buggy is a familiar object in every hamlet, village, town and city, and is often looked for with an anxiety verging on impatience by rich and poor alike. In such cases the horse has always been too slow; nowadays it is always too slow, especially for the ambitious or busy doctor. As the horse has been superseded by electricity in street car transportation, so must the faithful old steed step aside for the automobile, either now or very soon.

This week we give the opinions[1] of a large number of physicians who have had experience with the horseless vehicle. Our readers who were already in doubt whether or not to give up the horse and buggy for the newer, swifter (sometimes) conveyance will, we are afraid, remain in doubt when they finish. Certainly "doctors differ" in this instance. But, analyzing the opinion of all these physicians, we are forced to the conclusion that the automobile, while far from perfect, has reached that stage where it is a practical and an economical conveyance under certain conditions. To the physician who has some mechanical genius it is not only a welcome substitute for the horse, but it is a valuable means of recreation and diversion.

There are probably 50,000 physicians in the United States who are using some kind of conveyance and who either use automobiles or would do so if the automobile were in every way practical for their use. The first practical point—and the important one in most cases—is the price. While many are able to invest $1,000 or more, the majority can not pay more than $500 or $600. Hence, for the average, the doctor's car should not cost over $500. Undoubtedly the present profits are very large; they are so acknowledged by manufacturers themselves. A certain man who has a practical knowl-

1. THE NAMES OF THE AUTOMOBILES. For evident reasons the names of the automobiles and tires (and of some contributors who so requested) are not given, reference numbers being substituted. Readers who wish to have a number explained may write us, enclosing a self-addressed stamped envelope, and we will send the information.

edge of the subject affirms that nearly all the cars now in the market could be sold at a profit at two-thirds the present prices. If a standard make were once adopted, so that the various parts, including the woodwork, could be made in large quantities, the present prices could be almost cut in two and still a good profit would remain. There is no doubt whatever that a good practical physician's car can be made and sold for $500. But what is a practical physician's car?

First.—It must be durable; its life, with moderate repairs, should be five years, and yet there is hardly a car on the market at a moderate price that will last this long. There are too many weak points in the machinery, but they are points that can be made strong with only slight increase in weight or price, if the manufacturer would look more to future reputation for durability. Durability has not been striven for; immediate sale, with a year's good service, with little thought for the future, seems to be the principle on which most cars are made. This will change soon—must change.

Second.—Compact engine with power enough to climb any hill that a horse and buggy will climb. The speed is immaterial, fifteen miles is fast enough, twenty should be the limit of any machine. Heretofore there has been a craze for speed, and the sooner the craze is over the better. Speed is simply a question of mechanics, nothing else. What we need is a law forbidding the making of an automobile for ordinary road and street use that will go faster than twenty miles an hour. This is fast enough for all purposes. Durability and power has been sacrificed to speed.

Third.—Simplicity of construction, with all parts easily reached. This will enable almost any physician who can succeed as a practitioner to succeed as an autoist. The average man wants to care for his machine and to be able to understand its every detail. This means pleasure as well as saving of money, temper and time. Not only will simple mechanism be easily repaired when out of order, but the need of repair will be more rare.

Who is the manufacturer and what is the car that will meet the physician's demands?

THE MEDICAL EXAMINATION OF CHAUFFEURS.

The numerous accidents from motor cars call for special legal requirements as to those who handle them. The rigid rules which are applied to locomotive engineers might, it would appear, be very reasonably paralleled by somewhat similar requirements as to the qualifications of chauffeurs who run fast automobiles. The locomotive engineer runs his locomotive on an exclusive and well-protected track. The motor car operator runs often at equal speed along a public road utilized by vehicles of every kind and with no protections at the crossings. It would be only fair, therefore, that his special senses and general physical condition should be required to be in as good a state as those of the locomotive engineer. While the possible results of accidents are less serious in the case of the chauffeur, the chances of them are certainly more numerous. If an automobilist is out of health, nervously weak, defective in sight and hearing, or under the influence of drugs or stimulants, he is not a safe man to run an automobile. The proposition which has been made in France to require a medical examination and certificate as an essential condition for licensing chauffeurs seems an eminently reasonable one. Considering the amount that has been said and acted on as regards the qualifications of pilots and engine drivers, a little attention might well be given to the qualifications of those who, in a minor way perhaps, are now freely assuming like responsibilities.

A PECULIAR TYPHOID SEQUEL.

A lay journal, basing its statements on some alleged statistics, says that when a bachelor is carried through an attack of typhoid fever under the care of a trained nurse the chances are two to three that he will make a proposition of marriage to her during his convalescence. It says further that if a bachelor is nursed through any illness the chances are one in six that he will make a proposal of marriage to his nurse, and if this rule fails the inference is that the nurse is aged or exceptionally plain. The trained nurse, it says, who has been in the business over ten years is a rarity. We are not advised as to the number of happy marriages thus brought about, but it might be in a certain way a salutary process in weeding out the sentimentally inclined trained nurses and preventing overcrowding of the occupation. The risks appear to be unevenly divided. The woman who takes care of a man during convalescence has a pretty fair chance to estimate his weak points properly, while the other party, aside from his possible mental disability due to the effect of his disease, has comparatively limited opportunities.

UNGRATUITOUS SERVICES TO FELLOW PHYSICIANS.

A recent lawsuit in which a prominent physician was the plaintiff and the estate of another prominent physician the defendant has excited much comment. The suit was for professional services from one physician to another and, we are pleased to say, was almost unique. The estate is said to be amply able to meet the bill, and in that case it was most unfortunate that the suit was allowed to be instituted, whatever one may think of the policy or motive that prompted the action. The result, favorable or otherwise, is of no benefit to the plaintiff. The testimony of some of the witnesses was certainly remarkable, if correctly reported. Physicians are reported as saying that they usually charged their brother physicians for professional services. One is said to have asserted that he never even heard of a custom in accordance with which one physician would not charge another! The proceeding as a whole, according to the news reports, gives evidence of a lack of true professional courtesy. We agree with the New York *Sun* that there are probably very few physicians who would have the hardihood to go into court for recovery in such cases. The same paper is complimentary and also just to the profession when it says that "there are very few physicians who would care to do so."

THE CALIFORNIA HORROR.

Several thousand copies of this issue of THE JOURNAL had been printed before information reached us of the awful results from the combination of earthquake and fire in California, especially in San Francisco. We have been trying to reach San Francisco by telegram, but have not been able thus far to do so. The newspapers have already recorded the deaths of two physicians, Dr. Stinson and Dr. Kelley. The Medical Society of the State of California was to have been in session on the 17th, 18th and 19th. While many of the members may have been in hotels that were more or less wrecked by the earthquake, it is hoped that all were able to escape. We fear that the Dr. Stinson mentioned in the newspapers may be Dr. J. C. Stinson, who has an article on page 1207 of this issue. The Dr. Kelley is probably Dr. Edwin Arthur Kelley, of the Agnews State Hospital. Our sympathies are extended to the people who are passing through this awful ordeal, and especially to the members of our profession in San Francisco. Further, we believe that the profession of the whole country will willingly extend more than sympathy if the slightest necessity arises.

Medical News

ALABAMA.

Resolutions Adopted.—The Jefferson County Medical Society, at a special meeting held in Birmingham, March 26, adopted resolutions testifying in a fitting manner to the high esteem in which the late Dr. John C. Le Grande was held by his professional associates.

Commencement.—The twelfth annual commencement exercises of Birmingham Medical College were held March 29. Rev. S. B. Culver delivered the annual address to the graduating class, in which he paid a tribute to the late Dr. John C. Le Grande, for many years secretary of the college. Degrees were conferred on a class of eight by Dr. Benjamin L. Wyman.

CONNECTICUT.

Communicable Diseases.—The smallpox situation in Putnam is reported to be serious.——The Plantsville, South Center and Middlesex schools, Southington, have been closed on account of the prevalence of scarlet fever, diphtheria and measles.

Health Board Moves Office.—The office of the State Board of Health, which, since the organization of that body has been located at the residence of the late Dr. Charles A. Lindsley, New Haven, was moved March 31 to Hartford, where it will be located henceforth.

Personal.—Dr. S. Burden Overlock, Pomfret, has been appointed a member of the State Board of Health, succeeding Dr. Joseph H. Townsend, New Haven, who became secretary of the board on the death of Dr. Charles A. Lindsley.——The International Congress of Physiotherapy, Liege, Belgium, has awarded a diploma of honor to Dr. Clarence E. Skinner, New Haven, for his book on the "Therapeutics of Dry Hot Air."

Annual Meeting.—At the annual meeting of the Hartford County Medical Association, April 3, the following officers were elected: President, Dr. Frederic S. Crossfield, Hartford; vice-president, Dr. Edward G. Fox, Wethersfield; clerk, Dr. Edward R. Lampson, Hartford; councilor, Dr. George R. Shepard, Hartford; delegates, Drs. Everett J. McKnight, Hartford; Ansel G. Cook, Hartford; George W. Lawrence, East Berlin; John B. Boucher, Hartford, and Kenneth E. Kellogg, New Britain, and censors, Drs. Robert M. Clark, New Britain; Oliver C. Smith, Hartford, and Thomas F. Kane, Hartford.

DELAWARE.

Will Prosecute Delinquents.—The board of health of Dover has issued a warning to local physicians that hereafter prosecution will follow the neglect promptly to report to the board all cases of infectious or contagious diseases.

Personal.—Drs. Napoleon B. Morrison, Thomas D. Cook, Haven B. Patton and George R. Faulk have been elected city vaccine physicians for Wilmington.——Dr. George W. K. Forrest, Wilmington, was severely hurt by being thrown from his carriage.

Wilmington Health.—The annual report of the local board of health of Wilmington shows a death rate for 1905 of 15.16 per 1,000. No smallpox reported during the year. The number of cases of diphtheria was cut in half as compared with 1904. There was a notable increase in scarlet fever, but without any increase in the deaths. Three times as many cases of typhoid fever were reported during the year, but with fewer deaths than in the previous year. Tuberculosis caused 152 deaths, and the board of health suggests that this disease be added to the list of diseases to be reported.

GEORGIA.

Senior Student Dies.—T. E. Lenier, a member of the senior class of the Atlanta School of Medicine, died at the Presbyterian Hospital, Atlanta, March 28.

Lay Cornerstone of College.—The cornerstone for the new building of the Atlanta College of Physicians and Surgeons was laid with appropriate ceremonies, April 6.

Donations to College.—Andrew Carnegie has donated $10,000, and Dr. A. W. Calhoun, Atlanta, $10,000, to the building fund of the Atlanta College of Physicians and Surgeons. The remaining $80,000 was subscribed by the faculty and citizens of Atlanta. The faculty and the board of trustees have decided to establish an Andrew Carnegie laboratory of pathology and an A. W. Calhoun chair of ophthalmology.

ILLINOIS.

Personal.—Dr. George A. Wash, Palmyra, was operated on April 7 in St. Anthony's Hospital, St. Louis, for appendicitis and is making satisfactory progress toward recovery.——Dr. William J. Huff, Mode, has been adjudged insane and committed to the Illinois Central Hospital for the Insane, Jacksonville.——Dr. and Mrs. William R. Parkes, Evanston, are visiting in Los Angeles, Cal.

Brainard District Society Meets.—At the thirtieth annual meeting of the Brainard District Medical Society, held in Lincoln, April 13, the principal address was given by Dr. J. N. McCormack, chairman of the Committee on Medical Organization of the American Medical Association. Dr. William E. Guthrie, Bloomington, was elected president, and Clinton was selected as the next place of meeting.

Anti-Tuberculosis Work in Peoria.—Through the efforts of the Peoria Association for the Prevention of Tuberculosis, an ordinance was passed by the city council, which became effective March 20, providing for the registration, disinfection or placarding of premises occupied by consumptives. The council also has appropriated $50 a month for a tuberculosis visiting nurse, who began her work April 12.

Society's Semi-Centennial.—The Jersey County Medical Society on April 4 celebrated the semi-centennial anniversary of its organization with a banquet. The society was organized April 4, 1856, at the office of Dr. White in Jerseyville. Dr. E. A. D'Arcy was first president and Dr. A. S. Brewster the first secretary and treasurer. Dr. Augustus K. Van Horne, Jerseyville, is the only living charter member of the organization.

Old-Time Violator in the Toils.—James M. Ferdon, better known to the public as "Brother Paul," or the "Great Paul," who has been engaging in the itinerant vending of drugs and illegal practice of medicine in various parts of the country, was arrested April 6, at Chicago, at the instance of the Illinois State Board of Health, and was taken to Freeport, where he is now incarcerated in the county jail. Ferdon was at Freeport in August, 1905, engaging in the sale of his so-called "Quaker remedies" and practicing medicine in violation of the statutes. Suit was brought against him at the instance of the State Board of Health and several judgments were obtained against him both as an itinerant vendor and for practicing medicine, the fines amounting to about $1,700. When mittimuses were issued Ferdon removed to Iowa, and since that time has been doing business in several western states. He returned to Chicago early in April and had made plans to take up his business at Rockford, when the state's attorney of Stephenson County ascertained his whereabouts. Ferdon was apprehended in his rooms at the Kaiserhof Hotel just as he was making plans to leave the city.

Chicago.

Deaths of the Week.—During the week ended April 14, 621 deaths were reported, equivalent to an annual death rate of 15.80 per 1,000. Pneumonia caused 133 deaths; consumption, 70; heart disease, 56; Bright's disease and violence, including suicide, each 41; scarlet fever, 17; diphtheria, 10, and whooping cough, 7.

Twice Fined in Two Weeks for Selling Cocain.—On April 13, for the second time within two weeks, A. Monaco, a druggist at Polk and Clark Streets, was fined $100 for selling cocain without a physician's prescription. A negro accused of buying cocain in Monaco's drug store for boys under age, was fined $100 for disorderly conduct.

Bogus Vaccination Certificates.—Two cases of smallpox have been discovered in the Brown school. It is reported that several hundred children attending the school have been exposed to smallpox through false vaccination certificates given to children who had not been successfully vaccinated. The health department is making a searching investigation into the matter.

Reduced Death Rate.—For the week ended April 14, 39 fewer deaths were reported than for the previous week, representing a decrease of nearly 6 per cent. in the annual rate. Almost all the important causes of death, and especially nephritis, bronchitis, cancer, consumption and typhoid fever, show a reduction in mortality. The mortality of the infectious diseases of childhood, diphtheria, scarlet fever and whooping cough, increased.

Comparative Mortality.—The statement of mortality for the week ended April 7 shows 78 more deaths than for the previous week and 148 more than reported in the corresponding week of 1905. The increase in the annual death rate is equivalent to 13.5 and 25.3 per cent., respectively. There was an abnormal increase in the deaths of those over 60 years of age. Pneumonia showed the highest figures of the season, 135, consumption following with 85 deaths.

Personal.—Dr. A. I. Bouffleur is visiting in California, and on March 28 addressed the Long Beach Medical Society on "Drainage, Surgical and Medical."——Dr. Max Reichmann has been appointed radiographer to the Alexian Brothers' Hospital. ——Dr. and Mrs. Lester Curtis sailed for Europe, April 14.—— Dr. and Mrs. C. Pruyn, Springfield, are taking a trip to Mexico.——Drs. Hugh T. Patrick and Henry Gradle have gone to Lisbon as delegates from the Northwestern University Medical School to the International Medical Congress.

INDIANA.

Free Dispensary Opened.—Hope Hospital, Fort Wayne, opened a dispensary for the free treatment of the poor, March 25. The dispensary is in charge of the staff of the hospital.

Physicians' Club Organized.—The physicians of Elwood organized the Elwood Physicians' Club, March 30, and elected the following officers: President, Dr. Tilmund O. Armfield; vice-president, Dr. John Q. Garner, and secretary and treasurer, Dr. Edward L. Wiggins.

Vanderburg County Election.—At the annual meeting of the Vanderburg County Medical Society, held in Evansville, March 27, the following officers were elected: President, Dr. John N. Baughman; vice-president, Dr. Marcus Ravdin; secretary and treasurer, Dr. William R. Davidson, and censor, Dr. George W. Varner, all of Evansville.

Resignations from Staff.—Owing to the recent change in the management of the Deaconess Hospital, Evansville, the following members of the medical staff have resigned: Drs. George P. Hodson, Joseph C. McClurkin, Philip Warter, Weller S. Pritchett, Henry F. McCool, William E. McCool, A. J. Knapp, Charles W. Hartloff, Jacob H. Kerth, Benoni S. Rose and Thomas Macer.

Epidemic Diseases.—The Carnegie library and Greensburg high and common schools have been closed by the board of health on account of the rapid spread of scarlet fever.—— Scarlet fever is far in the lead among communicable diseases. In Indianapolis 72 cases were reported in March, as compared with 61 in February.——An epidemic of scarlet fever is feared in Greenfield.——Dr. John N. Hurty, secretary of the State Board of Health, reports 6 cases of smallpox in Denver and 40 or more exposures to the disease.

Personal.—Dr. George W. McCaskey, Fort Wayne, goes abroad for a month.——Dr. Joseph W. Bowlby, Shelbyville, is seriously ill with cerebral hemorrhage.——The residence of Dr. John H. Hayden, Bethel, was totally destroyed by fire, March 20.——Dr. George D. Kahlo, Indianapolis, will become medical superintendent of the French Lick Springs Hotel, May 1.—— Dr. Job O. Ogburn, Green Hill, has been seriously ill with pneumonia, but is now improving. ——Dr. George D. Brannan, Crown Point, who has been seriously ill, is now convalescent. ——Dr. George Cassell, Hartford City, is seriously ill with septicemia.

New Medical Staff.—At a meeting held March 26 to elect a staff for the Fort Wayne Lutheran Hospital, Dr. Herman A. Duemling was appointed chief of staff; Dr. Henry G. Merz, chairman of the medical board; Dr. Eric A. Crull, secretary, and the following received staff appointments: Drs. George L. Greenawalt, Martin F. Schick, Charles E. Barnett, W. Wynn Barnett, Henry Ranke, Samuel H. Havice, Arthur L. Mikesell, Gustave G. Brudi, New Haven; Elmer E. Morgan, Samuel D. Sledd, Alpheus P. Buchman, Hiram Van Sweringen, George B. M. Bower, Charles R. Dancer, Henry O. Bruggeman, Adam L. Schneider and W. W. Carey.

Resignations from Faculty.—Dr. John F. Barnhill, clinical professor of diseases of the ear, nose and throat; Dr. E. O. Little, director of the physiologic laboratory and instructor in physiology; Dr. Frank F. Hutchins, assistant professor of nervous and mental diseases; Dr. Goethe Link, demonstrator in the anatomic laboratory; Dr. William H. Foreman, instructor in materia medica and therapeutics; Dr. Allison Maxwell, professor of practice of medicine; Dr. Robert O. Alexander, professor of pharmacology; Dr. Harvey A. Moore, clinical lecturer on genitourinary surgery, and Dr. Walter S. Given, lecturer on anatomy, have resigned from the faculty of the Medical College of Indiana, Indianapolis.

IOWA.

Complaining Witness Did Not Appear.—"Dr." Shipley, Madrid, who was arrested April 4, charged with practicing medicine without a license, appeared for trial April 9, and was discharged, as the complaining witness failed to appear.

Personal.—Dr. E. A. Bare, Ames, was attacked in his office building, March 24, stabbed and robbed of his pocketbook and watch.——Dr. Alfred Watkins, Des Moines, has returned from California.——Dr. Charles A. Delander, Des Moines, is critically ill with rheumatic fever.

Equal Rights.—Dr. Henry Young, state senator, presented an amendment to the bill authorizing cities of more than 12,000 population to build hospitals, requiring officials of hospitals to give an equal standing in such institutions to physicians of all schools of medicine.

Chiropractic Goes to Jail.—"Dr." D. D. Palmer, Davenport, discoverer and developer of "chiropractic," was committed to the county jail March 28, to serve out the sentence of 105 days' imprisonment imposed on him for practicing medicine without a license. Dr. Palmer could have been released after fifteen days' imprisonment on payment of a fine of $350, but decided to serve out his sentence and presumably pose as a martyr.

KENTUCKY.

Fire Loss.—The residence of Dr. A. C. Hagans, Langley, was destroyed by fire, March 26. No insurance was carried.

Meningitis Epidemic.—It is reported that cerebrospinal meningitis is epidemic in the vicinity of Alexandria. Out of one family of eight it is reported that three are dead and four are hopelessly ill with the disease. Two other deaths have been reported.

Personal.—Dr. John Price, Louisville, has returned from Vienna and will become an interne in a Philadelphia hospital the last of this month.——Dr. D. F. Reeder, Paducah, sails for Panama March 30.——Dr. Samuel H. Garvin, Louisville, celebrated the twenty-ninth anniversary of his election as jail physician, April 2.——Dr. L. Edwin Young, Paducah, has been elected physician of McCracken County, succeeding Dr. John W. Pendley.

Academy of Medicine Incorporated.—The Academy of Medicine of Jefferson County, Louisville, filed articles of incorporation April 3, with a capital stock of $20,000. The object of the organization is the fraternization and broadening of local practitioners. The following are the charter members: Drs. Ap Morgan Vance, William Bailey, L. S. McMurtry, W. H. Wathen, A. M. Cartledge, John T. Moran, C. G. Lucas, S. J. Meyers, L. Frank and John G. Cecil.

Trustees Vindicated.—For the last year and a half there has been a determined attempt to remove from office as trustees to Speers Hospital, Dayton, for alleged extravagance and mismanagement, Drs. James O. Jenkins and John L. Phythian, Newport, and Dr. W. E. Senour, Bellevue. Ouster proceedings were instituted by taxpayers and three times the case has gone to the Court of Appeals, and each time the phy-

sicians have won. The last trial before Special Judge W. B. Moody will probably end the matter for in his decision the judge paid a well-deserved compliment to the physicians for the splendid manner in which their onerous duties, without compensation, had been performed. The costs of the prosecution will amount to nearly $2,000.

MAINE.

Measles Epidemic.—Measles is reported as epidemic all over the state. Rural schools, school gatherings and public meetings are being deferred on this account.

Meeting Deferred.—The Maine Medical Association meeting will be held in Portland, June 13-15, instead of June 6-8, as formerly announced, in order to avoid conflict with the meeting of the American Medical Association at Boston.

Personal.—Dr. George H. Turner, Jr., Portland, has been appointed surgeon in the Maine Naval Reserves.——Dr. George L. Hilton, Bangor, has been elected a member of the local board of health, vice Dr. Harris J. Milligan, made city physician.

State Board Meeting.—At the annual meeting of the State Board of Health, April 2, Dr. Charles D. Smith, Portland, was unanimously re-elected president. The standing committees of the year were appointed and the secretary reported verbally the work of the board in stamping out smallpox.

Hospital Patients Should Pay When Possible.—At a recent meeting of the Penobscot County Medical Society resolutions were adopted embodying the idea that the public hospitals should make charge for services of physicians and surgeons to those who can afford to pay, that the hospital might be compensated for the service.

MARYLAND.

Smallpox.—Two cases of smallpox were reported at Cumberland on April 9.

Hospital Incorporated. Articles of incorporation have been filed by the Emergency Hospital, Easton.

County Society Election.—The Somerset County Medical Society held its regular meeting April 6 and elected Dr. Charles W. Wainwright, Princess Anne, president, and Dr. Ralph L. Hoyt, Oriole, secretary-treasurer.

Baltimore.

Personal.—Dr. Summerfield D. Bond has been appointed chief medical examiner of the Baltimore & Ohio System.

Gift for Hospital.—The trustees of Johns Hopkins Hospital have accepted a gift of $30,000 from Miss Helen F. Wilmer, to be used in the erection of a nurses' home in connection with the institution.

Early Days of Johns Hopkins.—On April 12 Mr. Daniel Gilman, ex-president of Johns Hopkins University, spoke before the Johns Hopkins Hospital Historical Club on "Early Days of the Johns Hopkins Medical School," and Dr. Howard A. Kelly spoke on "The First Medical Illustrations."

Society Discusses Variola.—The Allegany Medical Society, at its meeting in Cumberland, April 3, discussed the early diagnosis and treatment of variola. The society is reported to be in a flourishing condition and comprises in its membership almost all of the physicians of the county.

Eye, Ear and Throat Hospital Report.—The report of the Baltimore Eye, Ear and Throat Charity Hospital for 1905 shows that during the year 5,677 patients were treated, 5,590 of whom were charity patients. The total number of operations performed was 1,674. The number of patients increased 400 during the year, and the number of visits in the dispensary was nearly 5,000 greater than during the previous year.

Staff Changes at Infirmary.—The following changes will take place shortly at the Union Protestant Infirmary: Dr. Hugh H. Trout will retire as resident physician and will go to Vienna; Drs. George Tyler and Robert Nelson will also retire; Dr. Theodore F. Riggs, who has been a member of the resident staff, will succeed Dr. Trout. The following will be added to the staff: Drs. John Tarr, Baltimore; Sterry, New Orleans; Bell, Staunton, Va., and Dr. Wroth of Baltimore.

Health of the Week.—The death rate for the week ended April 14 was 21.53 per 1,000. Pneumonia was again in the lead with 29 deaths, to consumption, 24. It is interesting to note the variability without apparent cause of the former in the last several weeks, sometimes running far ahead of consumption and again falling much behind it. The large number of deaths due to violence was noticeable: Accidents, 12; suicides, 5, and homicides, 2. One case of smallpox was reported during the week.

Personal.—Dr. and Mrs. H. Barton Jacobs sailed for Europe, April 11.——Dr. A. R. L. Dohme has purchased the estate of 22 acres in the northern suburbs, formerly the country residence of Secretary of the Navy Bonaparte, and will reside there.——Dr. William S. Baer, chief of the orthopedic department of the Johns Hopkins University, was operated on for appendicitis at the Union Protestant Infirmary, April 8.——Dr. William H. Baltzell, who has been abroad for the last two years, is now in Paris and will not return to America at present.——Dr. Roland B. Whitridge is in Paris.

MISSOURI.

Health Department Appointments.—Mayor Wells of St. Louis has nominated Dr. H. Wheeler Bond, a member of the board of health, for health commissioner, to succeed Dr. Charles A. Snodgrass, deceased.

Symposium on Abortion.—The meeting of the St. Louis Medical Society of Missouri, April 21, will discuss criminal abortion. The subject will be dealt with from the medical standpoint by Dr. J. M. Grant; from the moral standpoint by Rev. James Hillem, and from the legal standpoint by Circuit Attorney A. N. Sager. This meeting is expected to be the beginning of a relentless campaign against abortionists of the city.

Memorial Services for Dr. Snodgrass.—Exercises in memory of the late Dr. Charles A. Snodgrass, health commissioner, were held by the St. Louis Medical Society, April 15. Dr. George Homan presided, and addresses were delivered by Dr. Homan, the mayor of St. Louis, Dr. W. G. Moore, Hon. Henry T. Kend, president of the Civic League; Dr. W. J. Miller, president of the Eclectic Medical Society, and John H. Matthews, of the board of health. At the close of the addresses a memorial to Dr. Snodgrass, prepared by a committee, was read by Dr. Sendebing and adopted by a rising vote. A memorial presented by Dr. Fred J. Taussig on behalf of the Medical Alumni Association of Washington University was also read and adopted.

NEW JERSEY.

Warning About an Agent.—In THE JOURNAL last week subscribers and members were cautioned against paying any money to Stein Josephs for the American Medical Association. When we last received information, his field of operations was in New Jersey. The Association is anxious to learn his whereabouts and will be glad to assist in his prosecution.

NEW YORK.

Ask for Milk Ordinance.—The physicians of Niagara Falls have petitioned the board of health asking that several changes be made in the sanitary code in regard to the distribution of milk in that city.

Dinner to Dr. Goffe.—Dr. J. Riddle Goffe, New York City, recently read a paper before the Buffalo Academy of Medicine on "The Etiology and Treatment of Cystocele." Before the meeting a dinner was given in his honor by Dr. Matthew D. Mann.

Bills Passed by the Senate.—Senator Saxe's bill authorizing New York City to establish and maintain a seaside park for the poor sick and convalescents was passed in the shape the New York City administration desired. The management of the new park will be under the control of the park board instead of the health department.

Antinarcotic Bill Reported.—This bill has been amended so as to practically exempt stocks of drugs now on hand, and to omit the provision that the analysis of the state chemist shall be presumptive evidence in criminal prosecution against a dealer. The bill would compel the labeling of all "patent medicines" and compounds containing more than a certain percentage of habit-forming drugs.

Higher Medical Standards.—There is now a bill called assembly bill No. 1715, which has for its purpose the exaction of a higher standard of education for all medical schools in the state and the establishment of one board of medical examiners, nine in number, in place of the board of seven each from each of the three schools of medicine. This bill would require colleges of osteopathy to exact a standard of preliminary education as high as that required by the regular colleges of medicine. It would also require students to attend sessions of nine months each in four calendar years. Power for the revocation of license of great scope would be vested in the examiners by the bill.

Personal.—Dr. W. F. Potter, Buffalo, has been appointed by Governor Higgins as a delegate to represent New York at the second annual conference of the Council on Medical Education of the American Medical Association, to be held in Chicago, May 12.——Dr. E. V. Stoddard, Rochester, was elected president, and Dr. Stephen Smith, New York City, vice-president, of the State Board of Charities for the ensuing year.——Dr. Horace M. Edmonds, Tonawanda, was reappointed health commissioner.——Dr. S. L. Higgins, Jr., physician at the Manhattan State Hospital, New York City, has been appointed assistant surgeon at the New York State Soldiers' Home Hospital, vice Dr. Laurance J. Gerold, deceased.

The Stevens-Wainwright Bill.—The New York State General Committee for Safeguarding the Sale of Narcotics has sent a letter to the physicians of New York State inclosing a booklet entitled "Has the Public a Right to Know"? containing the text of the Stevens-Wainwright bill now pending in Albany for the labeling of medicinal preparations which contain alcohol and certain other narcotic or potent drugs so as to disclose the presence and percentage of such ingredients. It is urged in the name of the poor and the sick in whose behalf this bill is being pressed, that every physician write to his senator and assemblyman urging the passage of the measure and also that he interest any influential friends and urge them to do the same. It is said that if the bill does not pass it will be for lack of public interest and demand for it, and it is impossible to bring facts before the public through the press, as it is silent on the question, owing to its advertising interests, excepting in a few instances.

Buffalo.

Restrict Sale of Poisons.—Because of the large number of suicides by carbolic acid, Health Commissioner Greene has prepared an ordinance restricting the sale of poisons, particularly carbolic acid and cocain.

Personal.—Dr. John H. Pryor, formerly superintendent of the New York State Hospital for Incipient Tuberculosis, has returned to Buffalo and resumed practice.——Dr. Charles G. Stockton has sailed for Europe.——Dr. Matthew D. Mann has returned from a visit to Jamaica.

Ordinance to License Criminals.—An ordinance is proposed by the Buffalo council which forbids clairvoyance, fortune telling, soothsaying, magic or sorcery without a license. It empowers the mayor to issue licenses to persons engaged in this "criminal business" who are of good moral character at a fee of $300 per year. It forbids the conduct of more than one place of business under one license and provides penalties of from $10 to $100 for its violation.

Tuberculosis Propaganda.—The tenement and tuberculosis committee of the Charity Organization Society has been reorganized and the tuberculosis section of the old committee has organized a new committee on tuberculosis, whose special work will be to spread the knowledge in destitute sections of the city that the disease is both curable and preventable. The following medical men will comprise this committee: Drs. John H. Pryor, Peter W. Van Peyma, De Lancey Rochester, De Witt H. Sherman, Irving P. Lyon, Julius Ullman and W. Harry Glenny.

New York City.

Bequest to St. Luke's.—Mrs. Sarah E. Sands has bequeathed $15,000 to St. Luke's Hospital. Three beds will be endowed in memory of her husband.

Hospital Ship Arrives.—The cruiser *Pennsylvania*, which is being used temporarily as a hospital ship, arrived from Guantanamo, Cuba, having on board the sick sailors and marines from the Atlantic fleet now in the Caribbean Sea. These men will be transfered to New York hospitals.

Tabulation of Sudden Deaths.—For the first time in the history of the coroner's office a complete list of the sudden deaths for the month has been issued. During March there were 546 cases of sudden death; 361 died from natural causes and 185 from burns, accidents and suicide.

Milk Below Standard.—Five dealers have been convicted of selling inferior milk. In one instance the milk was 32 per cent. below the required standard. The cases were brought into court by the inspectors, who based their complaints on samples taken from the milk offered for sale.

More Smallpox Imported.—The Hamburg-American liner *Amerika*, which arrived April 7, brought the second case of smallpox that has been imported within a week. The 260 passengers who occupied the same compartment were detained at quarantine for observation. The Red Star steamer *Noordland*, which arrived April 9, brought two cases in the steerage, where there were 1,150 passengers.

Consumptive Sanitarium Soon to Open.—The new Mount Hope Tuberculosis Sanitarium, Otisville, will be open in six weeks; when 100 patients will be chosen from the outdoor patients under treatment in the tuberculosis clinic which is conducted next to the board of health buildings on Sixth Avenue.

Hospital Fund Divided.—The Hospital Saturday and Sunday Association has apportioned the fund collected in 1906. This amounts to $81,000. Of this amount Montefiore and Mount Sinai hospitals receive the largest amounts, $8,100 each. St. Luke's and the German hospital each received over $1,500, while the remaining funds were apportioned among some thirty-four other institutions in lesser sums.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended April 7, 1,809 cases of measles, with 72 deaths; 386 cases of tuberculosis, with 185 deaths; 324 cases of diphtheria, with 39 deaths; 229 cases of scarlet fever, with 8 deaths; 29 cases of typhoid fever, with 6 deaths; 35 cases of cerebrospinal meningitis, with 27 deaths; 36 cases of whooping cough, with 4 deaths; 36 cases of varicella, and 2 cases of smallpox, making in all 2,986 cases, with 341 deaths.

How to Safeguard Marriage.—The Society of Sanitary and Moral Prophylaxis, which met at the Academy of Medicine, April 12, discussed methods of safeguarding the marriage relation from venereal diseases. The advisability of attempting to regulate this evil by law was discussed and it seemed to be the consensus of opinion that this would not be wise at present. Dr. John A. Wyeth was in favor of more general education through the medical profession. Senator Lindsay discussed the legal aspect of the question.

OHIO.

Measles Epidemic.—Springfield reports 120 cases of measles; Lorain, 100 cases.

Fire Damage.—The house of Dr. Charles Bonifeld, Avondale, was damaged to the extent of $500 by a fire supposed to have been started by rats gnawing matches, April 7.

Found Guilty of Arson.—Dr. G. W. Whitney, Alvordton, charged with setting fire to his house in 1901 and who then pleaded not guilty, changed his plea, April 2, to guilty and was sentenced to imprisonment for a year in the state penitentiary.

Eye, Ear, Nose and Throat Specialists Meet.—The eye, ear, nose and throat practitioners of Ohio have arranged to meet at the same time and place as the Ohio State Medical Association in Canton, May 9 and 10. An excellent program has been arranged. Dr. Mark D. Stevenson, Akron, will deliver an address, setting forth the need of state organizations of eye, ear, nose and throat practitioners.

State Hospital Physicians Meet.—The semi-annual meeting of the Association of Assistant Physicians of State Hospitals was held in the Cleveland State Hospital, April 4 and 5. The following officers were elected: President, Dr. P. W. Tappan, Dayton; vice-president, Dr. Kensie S. West, Cleveland; secretary, Dr. J. F. Harbottle, Dayton, and treasurer, Dr. Rose E. Williams, Toledo. The October meeting will be held in Athens.

Interne Elections.—The following have been elected internes to Christ's Hospital, Cincinnati: Drs. R. T. Gould, C. DuBois, J. L. Tuetcher and C. Runyan.——The eight successful contestants for interneships in the Cincinnati Hospital were as follows: Drs. C. R. Keller, Charles E. Doerr, W. D. Palmer, R. H. Butler, W. H. Lewis, M. H. Doughty, John T. Batte and E. G. Richter.——The following are the successful contestants for interneships in the Jewish Hospital, Cincinnati: Drs. E. A. North, H. Lusher, Millard Wallenstein and C. J. Broeman.

Personal.—Dr. D. S. Sampsell, Ashland, has resigned as president of the Ashland County Medical Association, and Dr. Abram L. Sherick, Ashland, has been elected in his stead.——Dr. David N. Hopkins, Friendship, has been appointed physician of Scioto County.——Dr. John H. Moody, Harlem Springs, who is 96 years of age, claims to be the oldest practitioner in the United States.——Dr. Floyd F. Swimley, Forest, was severely burned and may be permanently blinded by the explosion of an acetylene tank, April 5.——Dr. Edgar J. March and Dr. H. P. Pomerene, Canton, and Dr. and Mrs. George W. Ryall, Wooster, sailed for Europe, April 7.——Dr. Frank L. Ratterman has been elected a member of the staff of St. Mary's Hospital, Cincinnati, vice Dr. John L. Cleveland, deceased.——The Hamilton Academy of Medicine has presented Dr. Minor M. Jacobs a quarter-sawed oak desk, with chair to match.——Dr. William S. Bushnell and family will return to Mansfield, April 25, after a winter in California.

PENNSYLVANIA.

State to Fight Typhoid in Pittsburg.—Because of the epidemic of typhoid fever in Pittsburg and the surrounding country, which receive their water supply from the Allegheny River, the State Department of Health is making preparations to compel towns and cities along tributary streams to treat their sewage before it is allowed to reach the waterways.

Society Sustains Doctor.—The Delaware County Medical Society at its triennial meeting adopted a resolution of sympathy for and confidence in Dr. Daniel P. Maddux, Chester. The society pledged its support in the coming retrial of the suit instituted by the parents of a patient operated on by Dr. Maddux for appendicitis. He is charged with performing the operation without the parents' consent, and they ask $10,000 damages.

Typhoid at West Chester.—West Chester is again in the throes of an epidemic of typhoid fever. Three students of the State Normal School have died of the disease within the last two weeks. The disease is not widely prevalent throughout the school. It first made its appearance in the school in March, and since then the disease has been gradaully on the increase and now 26 cases have been reported. It is thought that the contagion has been carried to the institution in the milk supply, for thorough investigation of all other sources of possible infection has revealed nothing.

State Tuberculosis Society Election.—At the annual meeting of the Pennsylvania Society for the Prevention of Tuberculosis, held in Philadelphia, April 11, the following officers were elected: President, Dr. Joseph Walsh, Philadelphia; vice-presidents, Rev. Herman L. Duhring, Samuel Castner, Talcott Williams, Drs. Seneca Egbert, Lawrence F. Flick, Samuel G. Dixon, Benjamin Lee, Maczyk P. Ravenel, Leonard Pearson and W. D. Robinson; secretary, Dr. Ward Brinton; solicitor, James L. Stanton, and directors, Samuel Scoville, Jr., James L. Stanton, Drs. Howard S. Anders, Ward Brinton, J. Solis-Cohen, J. W. Irwin, D. J. McCarthy, G. W. Norris, R. N. Willson, M. P. Ravenel, W. B. Stanton, A. P. Francine, J. C Foltz, C, J. Hatfield and F. A. Craig.

Philadelphia.

Births and Deaths.—The report of the revision of vital statistics of the bureau of health for March shows that 2,435 deaths were reported and 2,590 births.

Dinner to Drs. Spitzka and McClellan.—Dr. Hobart Amory Hare and Dr. Francis Xavier Dercum entertained as guests of honor at dinner at the Art Club, Drs. E. Anthony Spitzka and George McClellan, recently appointed professors of anatomy in Jefferson Medical College. Many prominent physicians were present.

Innovation in Ambulance Service.—The first auto-ambulance to be used in this city was placed in service by the department of public safety, April 7. This innovation in the ambulance service of the city is looked on with favor, and it is intimated that the near future will find the city supplied generally with these vehicles.

Sterilizers for Schools.—The present system of supplying filtered water in the public schools is looked on with disfavor by the department of health and charities, and Dr. Coplin, director of the department, has recommended the use of sterilizers instead of filters. Dr. Coplin said that the present filters leak and, therefore, can not be germ-proof. He does not believe there is a trustworthy filter in any of the public schools.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory of the bureau of health for March shows that 902 cultures were examined for diphtheria bacilli, and that 627 specimens of suspected typhoid blood were examined. The laboratory also examined 943 specimens of milk and 153 specimens of sputum; 4,596,500 units of antitoxin were supplied, and 8 disinfection tests were made and 130 analyses were performed. Under the revision of milk inspection 6,512 examinations were made, which included 128,626 quarts of milk. Of this number 360 quarts were condemned. Of these examinations 10 were chemical and 993 microscopic.

Philadelphia Health Report.—The total number of deaths reported for the week reached 588. This is a decrease of 37 from the number reported last week, and an increase of 71 over the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 24; pertussis, 8; meningitis, 4; cancer, 16; heart disease, 57; acute respiratory disease, 105; measles, 16; diphtheria, 14; consumption, 67; apoplexy, 21; marasmus, 6; enteritis, 25; Bright's disease, 52; accidents, 15, and suicide, 7. There were 272 cases of contagious disease reported, with 40 deaths, as compared with 290 cases and 43 deaths reported in the previous week.

Personal.—Dr. Robert C. Moon has returned to Philadelphia from the West Indies.——Dr. Montgomery H. Biggs, retiring chief resident of the Philadelphia Hospital, was tendered a testimonial reception at the University Club, April 9. Formal addresses were made by Drs. William Pepper, W. B. Stanton, C. Y. White and Charles Browne.

Medical Inspection for March.—The report of the revision of medical inspection of the bureau of health for March shows that for the month all inspections made, excluding schools, were 10,667; 2,158 fumigations were ordered, and 45 patients were examined for special diagnoses. Medical inspectors made 6,783 visits to the schools and excluded 1,124 children from attendance. The inspectors collected 323 cultures, made 283 injections of antitoxin and performed 460 vaccinations.

Bubonic Plague.—It has been demonstrated positively by the United States Public Health and Marine-Hospital Service that the cases of suspected plague on the British steamship *Burrsfield*, from Bombay, are bubonic plague. The men ill with the disease are confined in the United States Quarantine Hospital at Reedy Island, and the steamship is held at the quarantine station. One of the patients died April 11. Every effort is being made by the authorities to prevent the spread of the disease.

TENNESSEE.

The State Meeting.—The seventy-third annual meeting of the Tennessee State Medical Association was held in Memphis, April 10-12, and the following officers elected: President, Dr. L. A. Yarbrough, Covington; vice-presidents, Drs. J. L. Andrews, Memphis, A. B. Cooke, Nashville, and J. R. Rathmell, Chattanooga; secretary, Dr. George H. Price, Nashville (re-elected); treasurer, Dr. W. C. Bilbro, Murfreesboro (re-elected); delegate to the American Medical Association, Dr. T. J. Happel, Trenton; alternate delegate, Dr. Heber Jones, Memphis. Nashville was selected as the place for holding the next annual meeting in 1907. The following resolution was unanimously adopted:

Resolved, That the Tennessee State Medical Association recommends to all affiliated county societies to make no insurance examinations for old line life insurance companies for less than $5. This resolution is to have no bearing on those fraternal orders where the examinee pays for his own examination.

The report of the meeting will be continued next week.

GENERAL.

Spring Term of the Naval Medical School.—The spring term of the Naval Medical School, Washington, D. C., commenced April 14.

To Raise Standard of Immigrants. The house committee on immigration and naturalization has reported favorably on the immigration bill. This raises the head tax from $2 to $5, and provides an educational test for immigrants. Every person above the age of 16 years admitted to the United States must be able to read some language. It excludes imbeciles, the weak-minded, and manual laborers of poor physique.

Mosquito Extermination Society.—The third annual convention of this society was held in New York, April 11. William J. Matheson, president, in his opening address said that a large percentage of individuals in this country lose their lives or are incapacitated for work by disease caused by mosquitoes. He said that the society asks for the co-operation of every scientist and layman who desires to better his own or his neighbor's condition of existence. The "Mosquito Brief," otherwise known as the "confession of faith," is designed to convey to laymen information regarding these insects.

Sanitation in Cuba.—Minister Morgan, at Havana, reports that as an additional precautionary measure against yellow fever the sanitary department of that city has reapplied the regulations for house-cleaning enforced by General Ludlow in 1899, during the period of the American intervention, but which was discontinued in 1900. All buildings in the city are rigidly inspected and those found to be in an unsatisfactory condition are thoroughly cleaned by a sanitary brigade. Old clothes, paper and rubbish are carted away, loaded on large scows and dumped into the sea, five miles outside the harbor mouth. According to *Public Health Reports*, 120 men are at present engaged in this work under the direction of five inspectors. Thirty-five carts are in constant service, but the task has been so much heavier than was anticipated that it is proposed to enlarge the brigade in order that the city may be cleaned before the warm and damp season begins.

THE CHICAGO TUBERCULOSIS EXHIBITION.

Successful, Well-Attended Display of Statistics and Data on Tuberculosis Prophylaxis.

Objective demonstration of the causes and means for the prevention and cure of tuberculosis was the essential object which induced the National Association for the Study and Prevention of Tuberculosis to collect from all parts of the United States and from foreign countries whatever seemed to be illustrative of the progress made. Six cities have now seen the exhibition and there can not be any doubt that it has materially helped to arouse great public interest and to crystallize more or less spasmodic efforts. The Chicago Tuberculosis Institute secured the exhibition for a much longer time than the other cities (April 2 to 28) added to it, and arranged for conferences and lectures which, to judge by the profound interest taken in them, must have exerted a most salutary influence. Six conferences were held in the first two weeks, and also daily afternoon lectures, all of them bringing out crowded houses. A separate hall was set aside for them, with the banner of the international crusade against tuberculosis and many appropriate mottoes on the walls.

The formal opening on April 2 will remain a memorable occasion for Chicago. Dr. Frank Billings, as the president of the Chicago Tuberculosis Institute, introduced the principal speaker, Governor Charles S. Deneen, who outlined in his address the duties and limitations of the state's share in anti-tuberculosis efforts. Dr. Whalen, Chicago's commissioner of health, dwelt more particularly on milk supply and inspection as a factor of importance in the crusade. Dr. Webster, the president of the Illinois Board of Health, described the pioneer efforts made by the board. The great assistance to the maintenance of anti-tuberculosis efforts by a system of obligatory insurance for workingmen was lucidly shown by Prof. Charles R. Henderson of the University of Chicago. A touching demonstration of the pauperizing effects of the disease was given by Miss Jane Addams of Hull House. After addresses by Drs. Cigrand and Mix on other important phases of the problem this first conference adjourned.

Great interest was also manifested in the second conference of April 4, with Dr. H. B. Favill in the chair. Drs. Evans, Pettit, Sachs and Gray spoke on the subject of "Outdoor Treatment of Tuberculosis" from every point of view, and Miss Fulmer, head nurse of the Chicago Visiting Nurses' Association, presented the plans for a camp for tuberculous patients to be started immediately near Chicago. The announcement of the perfected plans for the establishment of a tuberculosis dispensary on novel lines by the Chicago Institute aroused considerable interest. The land has been given for it and funds for the building are accumulating. It is intended to play a rôle similar to that of the social settlement, with the difference that the medical and sanitary problems of the neighborhood will receive first consideration. A diet and milk kitchen, and a roof-garden school are the most distinct features of the plan.

Most interesting facts were brought out at the conference of April 6. The important subject of industrial workers and tuberculosis was discussed under the chairmanship of Prof. Graham Taylor. Particular interest was aroused by the statistics of Mr. Perkins, president of the cigarmakers' union. He demonstrated the tremendous tax levied by the disease on this one group of industrial workers. Dr. A. C. Klebs showed how preventive efforts and early treatment of tuberculous patients had effected great financial saving to organized labor and sick-benefit associations in other countries. He cited particularly the German insurance system, which had found of advantage a very considerable outlay of money for the establishment of sanatoria and healthy dwellings of the workingmen. Contrary to the usual conception of the subject, he showed that the system was not governmental and paternal, but socialistic in the broad sense of the word. Drs. Hamilton and Hedger gave interesting statistical data and also spoke of their experience in settlement work in various districts. Mr. Bisno gave the lay point of view on tuberculosis among garment workers.

The conference of April 9 took up the subject of "Charitable Organization and Tuberculosis," under Mr. S. C. Kingsley's chairmanship. The principal point brought out was the limitations of charity in dealing with the problem. The sustained, systematic effort necessary can not be maintained by charity, which has to concentrate on the care of the hopelessly advanced patients as its most legitimate field. Dr. Podstata's address forcibly dwelt on the inadequacy of institutional provisions for advanced consumptives in Cook County. The announcement by him of the establishment of a hospital for such cases within the city limits of Chicago was received with much satisfaction. Mr. Mullenbach told of the experience of the municipal lodging house with tuberculosis, demonstrating the great prevalence of consumption among the lodgers and the institution of preventive measures adopted for the safeguard of others. Mr. Bicknell of the Bureau of Charities and Mr. Riddle of Hull House told of their experience among the poor, and especially dwelt on the defective method of lodging house inspection in vogue in Chicago.

A most animated conference was the one held on the evening of April 12. Mr. Edwin G. Cooley, superintendent of schools, presided and outlined the various problems confronting the school management in dealing with tuberculous children and teachers. Rev. Mr. White of the board of education told of the plan adopted by the board to exclude such children, and other speakers insisted that such a plan was of great advantage, if proper provision could be made for such children. Drs. Churchill and Ryerson spoke of the medical aspects of this problem, and especially the difficulties encountered in the establishment of the diagnosis. Miss Addams described and recommended the establishment of garden schools, where children with early tuberculosis or those of tuberculous parentage could be taught out-of-doors in appropriate shelters. The results in such schools had been eminently satisfactory in Germany. Miss Fulmer told of the often deplorable condition among the poor children with tuberculosis of the glands, bones and joints, and the absolute lack of proper provisions for them. Dr. S. A. Knopf, New York, who had arrived earlier than expected, made a very forceful address on the deficiency of ventilation in public buildings, and especially that of the schools. This brought out a general discussion of this important subject in which several of the teachers present joined, showing the defects of systems of artificial ventilation and bringing many valuable suggestions for improvement in this as well as in the methods of cleaning of school rooms now employed.

Under the auspices of the Chicago Medical Society the Western Tuberculosis Conference convened April 14, Dr. H. B. Favill presiding. From Illinois and the neighboring states delegates had arrived in good numbers, and at the end resolutions were presented and adopted to make this conference an annual occasion, on which men and women interested and working in the cause could meet. It was the prevalent impression that this gathering is to become of the greatest importance to activity in this direction in the middle West. The principal addresses were made by the guests of honor, Dr. L. F. Flick, Philadelphia, the acting president of the national association, and by Dr. S. A. Knopf of New York. Both urged in eloquent language the great necessity of co-operation of both governmental and social elements in the crusade, which was so successfully inaugurated in this country by the National Association for the Study and Prevention of Tuberculosis and the Chicago Tuberculosis Institute.

The management of the Chicago Tuberculosis Institute can certainly congratulate itself for having inaugurated a campaign against the disease under the most favorable auspices. It has created not only a deep impression on the public mind, but it has brought together the most active workers and experts in the West for the one purpose of the eradication of that disease which most vitally affects the social welfare and health.

CANADA.

Outbreak of Smallpox Among Indians.—Consul Worman reports from Three Rivers that there is a serious outbreak of smallpox among the Indians and halfbreeds at Seven Islands, below Quebec. On account of the large number of laborers employed at Seven Islands in connection with the various industrial operations of Clarke City, the Dominion government and the provincial government have both taken steps to supply a staff of physicians and nurses, as well as medicine, and have ordered the icebreaker *Champlain* for service as a dispatch boat to this section of Quebec.

British Medical Association.—The honorary secretaries, Drs. J. N. G. Starr, D. J. Gibb, and Prof. J. J. MacKenzie, of the Medical Laboratories, University of Toronto, make the following announcement in connection with the seventy-fourth annual meeting of the British Medical Association, to be held at Toronto, Aug. 21-25, 1906:

MEETINGS OF SECTIONS.

The sections will meet on Tuesday, Wednesday, Thursday and Friday, August 21, 22, 23 and 24, at 9:30 a. m., adjourning at 12:30 p. m. each day.

SECTIONAL COMMITTEE OF REFERENCE.

The president, vice-presidents and secretaries of each section will form a committee of reference, and shall exercise the power of inviting, accepting, declining or postponing any paper and of arranging the order in which accepted papers shall be read.

GUESTS.

Papers by guests will be presented on invitation. If the committee of reference desires to invite persons to read papers in the section who are not eligible to become members of the association, their names should be submitted for the approval of the council. If it is desired to ask any such persons to attend the meetings of the section and to take part in the discussions a general permission to issue such invitation should be obtained.

All papers read are the property of the British Medical Association, and may not be published elsewhere than in the *British Medical Journal* without special permission.

DISCUSSIONS.

Secretaries are requested to communicate to the general secretary a preliminary statement of the arrangements made for the discussions in the section to be laid before the council at the earliest possible moment. This should consist of a statement of the subjects selected, together with the names, if possible, of the gentlemen who have undertaken to open the discussions.

PAPERS.

The offer of a paper should not be accepted on its title alone, and save under exceptional circumstances no paper should be accepted for reading until it has been sent to the secretaries.

The secretaries are requested to communicate to the general secretary of the association, 429 Strand, London, W. C., not later than June 15, a complete list of papers approved and accepted for reading.

It is suggested that the secretaries resident in the United Kingdom should collect papers from members on that side, and that the secretaries in Canada should deal with all papers in the Dominion and in the United States.

Only titles of papers which have been accepted, and which may be reasonably expected to be read, should be included in the program of sectional proceedings.

Offers of papers ought not to be accepted in excess of the number likely to be read. Failure to observe this condition leads to many inconveniences and gives rise to complaints of unfair preference.

REPORT IN THE BRITISH MEDICAL JOURNAL.

A report of the actual proceedings of the section will be published in the *British Medical Journal*, and in any communication addressed to persons who offered papers to be read in a section two things should be made clear:

1. Papers read are the property of the British Medical Association, and can not be published elsewhere than in the *British Medical Journal* without special permission.

2. The authors of papers not read have no claim for the publication of their papers in the *British Medical Journal*. Papers can not be "taken as read." If not read, they form no part of the proceedings of the section.

Secretaries are requested to co-operate in preparing the report of the proceedings of their section for publication in the *British Medical Journal*, with the reporter of the *British Medical Journal* appointed to the section, and to hand to him all matters for publication for transmission to the editor of the *British Medical Journal*, 2 Agar Street, Strand, London, W. C.

The attention of authors should be particularly directed to the time limit (see below), and the text of papers submitted for publication in the *British Medical Journal* as part of the report of the section should represent what is actually read to the section.

It is important that each author should hand the text of his paper in proper form for publication to one of the secretaries of the section immediately after it is read. It should be made clear that neglect to comply with this request may result in the omission of the paper in question from the proceedings of the section subsequently published in the *British Medical Journal*.

TIME LIMIT.

The attention of the council of the association has been called to the non-observance by readers of papers of the rule as to the time limit, which is as follows: "No paper must exceed fifteen minutes in reading and no subsequent speech must exceed ten minutes." The attention of presidents and secretaries of sections is particularly requested to this rule.

FOREIGN.

Oppression in Russia.—A St. Petersburg exchange states, March 31: "The dismissals from office and the arrest of medical men for participation in the political intrigues still continue. Dr. Fink, physician to the local prisons, has been dismissed because in his report to his superiors he called attention to the bad sanitary conditions of the political inmates of the prisons."

The Curable Tuberculous to Test African Climate.—The German authorities are discussing with favorable consideration the plan of sending a number of working people with mild forms of tuberculosis to German Southwest Africa instead of caring for them in sanatoria at home. The climatic conditions are said to be ideal, and by this plan they will be given a thorough test. The committee in charge of the temporary colony includes Kirschner and Katz of Berlin.

Bill to Regulate Marriage in Roumania. Dr. I. T. Thomescu and other senators have recently drawn up a bill which prohibits the marriage of the tuberculous, uncured syphilities, persons with heart disease, with general paralysis and infectious diseases of all kinds. A letter from Braila in the *Med. Klinik* states that some regulation of the kind is urgently needed in Roumania as an almost incredible disregard for such matters prevails and persons with florid syphilis now marry without the least restraint.

Proposed X-Ray Institute for India.—It is reported that the government of India has decided to establish an institution at Dehra Dun as a center for the practical instruction of medical officers in *x*-ray work, and as a depot for the storage of *x*-ray apparatus. The institution will be under the charge of an officer of the Indian Medical Service. Classes of instruction, according to the *Lancet*, will extend over a period of three months and facilities will be given officers who desire to acquire a knowledge of this special branch of medicine.

Progress in Enlightenment.—As a sign of the times we note a recent editorial in the Munich *Med. Wochft.* calling attention to the unprecedented way in which the national legislature voted appropriations for hospitals and hygienic measures. Heretofore these matters have received grudging attention with scant favor, but this year the comments were all favorable and commendatory. This transformation is due, the editorial hints, to the campaign of enlightenment which a committee from the Munich Medical Society (Aerztlicher Verein) has been quietly conducting for some months.

Glasgow Corporation and the Abuse of Alcohol.—The health committee of the Glasgow corporation recommended that a handbook be issued on "The Abuse of Alcohol and Its Results." The town council approved the recommendation and the pamphlet has been put in circulation. It consists of statements from the report of the Parliamentary Commission on Physicial Deterioration, and deals with the effect on adults and the effect of parental intemperance on the children. Emphasis is laid on two points: First, that the abuse of alcoholic stimulants is a most potent and deadly agent in producing physical deterioration, and second, that drinking habits are increasing among women of the working classes.

Central Sanitary Board for the Soudan.—Last October Sir R. Wingate, governor-general of the Soudan, approved the establishment of a board to advise the Soudan government on general medical and sanitary questions, including the treatment of epidemics. The president is Col. G. D. Hunter, D.S.O., R.A.M.C., and the members are eight in number, including the director of the Soudan Medical Department (Dr. J. B. Christopherson), the medical officer of health of Khartoum (Dr. A. Balfour), three medical officers of the Egyptian army, and a sanitary engineer. The *Lancet* states that this is a great advance, for the board will have to examine all schemes for medical and sanitary development, besides all legal ordinances and proposals connected with the public health.

Prizes Offered by Spanish Society of Hygiene.—Six prizes, the amounts ranging from $100 to $200, are offered by the Sociedad Española de Higiene. The competing articles can be written in Spanish, French or Italian, and must be sent in sealed envelopes. The Fernandez-Caro prize is for the best work on the hygiene of mines and means to enforce it. The Urgarte prize for the best on the subject of work and health, and their reciprocal influence on the duration of life; the Maura prize on sanitation of rural communities; the Guerra prize on Sunday rest and its relation to health; the Vadillo prize on hygiene and customs, and their mutual influence, and the Romanones prize on hygiene of the workingman's life in Spain. All communications must be addressed to the secretary-general, Sr. D. Mariano Belmas, Puerta del Sol, 9, Madrid, Spain, and be received before September 30 of the current year.

Sanitary Regulations for Hairdressers in Glasgow.—The Glasgow sanitary authorities and representatives of the hairdressers of the city, according to the *Glasgow Medical Journal*, have decided on certain regulations for the proper sanitary conduct of barber shops and hairdressing establishments. Shelves, fittings and tables on which instruments are placed must be of glass, marble, slate or other similar material. Clean towels must be placed on each headrest. No sponges or combs are to be used unless disinfected. Razors must be wiped on paper, and only clean hair brushes must be used. Shaving brushes are to be placed in a disinfecting solution after use, and only liquid or powdered soap or shaving cream is to be used. Other recommendations deal with rotary brushes, the cutting of hair in the case of skin affections, etc.

Smallpox and Yellow Fever in Ecuador.—Passed Assistant Surgeon Lloyd, of the Public Health and Marine-Hospital Service, reports that the situation in Guayaquil is very discouraging. From March 4 to 22, inclusive, there were thirteen deaths from smallpox and thirty-six from yellow fever. Local authorities give the present mortality at about 20 per cent. At the rate given for the nineteen days an estimate for March would be about 300 cases, with nearly sixty deaths. The actual number of deaths is probably, he states, a little under this figure, and the number of cases perhaps a little more than 300, because many mild cases are probably unrecognized. As there has never been a total of more than

twenty-six cases in the lazaretto at any one time, the indications are that perhaps two-thirds of the patients are not removed to the lazaretto. Inquiry among practicing physicians leads to the belief that this statement is not exaggerated. Many deaths are also inscribed in the records without specifying the nature of the fever, and Dr. Lloyd states that he has not considered these in the estimate given. Probably not half a dozen of the patients treated outside of the lazaretto have been protected from mosquitoes. He visited a number of patients who were suffering from typical attacks of yellow fever, and in not one case was any attempt made to screen the rooms. Should these conditions continue, Dr. Lloyd thinks that a longer quarantine would be justified or that passengers should be kept under observation before embarking, as contemplated in the regulations. Owing to the fact that adults who were born and reared in Guayaquil have recently been attacked by yellow fever, he is considering the advisability of recommending that the issuing of immune certificates be suspended.

Statistics in Regard to Adenoid Vegetations.—An examination was recently made of all the school children in Holland, between the ages of 6 and 12, for the discovery of adenoid vegetations. The minister of the interior issued an order that all the teachers should examine the children in their charge. To each teacher was sent a circular describing the principal external signs of adenoid vegetations. About 6 per cent. of the 800,000 children examined were reported as having them. As merely external signs were noted, this proportion is probably far below the real figures. In this and in other statistics on record the number of children with adenoid vegetations, discovered from the aspect of the face alone, was only 3.3 per cent. When the various external signs were noted it was 6 per cent., but when with the external signs the hearing also was examined, the proportion rose to 16 per cent., while local examination showed an average of 29.8 per cent. Although the statistics might not be reliable, yet the examination of the children, collecting of data and discussion of the subject aided materially in enlightening the public.

Cod Liver Oil in the Schools.—The gratuitous and compulsory administration of cod liver oil to all children for whom the school doctors prescribe it is included in the curriculum of the primary schools in parts of the district of Neufchatel, Switzerland. It is not stated whether the cod liver oil is prescribed for physical or moral degeneracy. In the latter case it might fill a long-felt want in the schools in this country as a substitute for the banished corporal punishment of our forefathers.

Remarkable Longevity.—A woman said to be 125 years old is now living in a Madrid hospital, in the service of Dr. H. Briz. She was born in Granada in 1780, her baptismal record being inscribed on the archives of a certain church. She entered the hospital thirteen years ago on account of a traumatism which left her blind.

LONDON LETTER.

The International Congress of School Hygiene.

The Duke of Northumberland presided over a preliminary meeting in connection with the Second International Congress of School Hygiene, which is to be held in London during August, 1907. Sir Lauder Brunton, president of the congress, in the course of a general statement on the arrangements said that the first congress was held in Nuremberg in 1904 and marked an epoch, because it was recognized then to a great extent that education should not be considered apart from physical conditions. The French are determined to do all in their power to make the congress in London a complete success, and other countries have also taken the matter up. He said that he was delighted with the reception that was accorded to the idea of an international congress in Canada and also in South Africa. He hoped that the congress would be a thoroughly representative gathering, not only of the colonies, but of every civilized country in the world. It is desired to see the important changes advocated in the physical education of children carried into practical effect. The congress, he said, promised to be one of the largest and most important ever held in London. Lord Reay then moved: "That in view of the importance of school hygiene in developing a strong and vigorous race, the necessity for scientific methods being followed in the training of the young, and for hygienic surroundings, being supplied in order to promote the health of the children during school life, this meeting consisting of representatives of educational authorities, medical men, teachers and others, is unanimously of opinion that it is desirable to hold the second international congress in London in August, 1907, to which representatives from India and the colonies should be invited in addition to representatives from other countries." He pointed out the enormous importance of hygiene in the elementary schools and particularly those in the poor districts of London. It is necessary, he said, that teachers should be trained to understand practical hygiene and that in this way great advantages would be reaped by the education given.

The Compulsory Medical Examination of School Children.

The question of the physical condition of the people has attracted much attention of late and considerable public alarm has been produced by the reiterated assertions of a number of faddists, who proclaim that the nation is physically deteriorating. As shown in former letters to THE JOURNAL, there are no grounds whatever for this pessimism. The council of the National League for Physical Education and Improvement has sent a deputation to the president of the board of education for the purpose of impressing on the government the importance of medical inspection of schools. This is to include the recording at least once every year of particulars of height, weight and chest girth of each child; the condition of eyes, ears, nose, throat; the detection of any disease, deformity or defect of general health, and the employment of all means possible to prevent the diffusion of offensive or infective diseases among children. The deputation urged that the examination should be compulsory and under the control of a central authority. The deputation was thoroughly representative and consisted of liberal and conservative members of parliament, the bishop of Southwark, Sir Lauder Brunton, Prof. Howard Marsh of Cambridge, the chief rabbi and Mr. Howard of the Salvation Army. Mr. Birrell, the president of the board of education, pointed out the difficulties arising from expense and from the possible prejudices of parents, but expressed his own sympathy with the general purposes of the league and his hope that they would be able to win that support of public opinion which would justify action. Professor Marsh pointed out that such an examination would do much to banish such ailments as measles, diphtheria and scarlet fever as completely as rabies has been banished by recent measures.

Fatal Accident to a Girl in Performing a Chemical Experiment.

A girl, aged 15, attending the Plymouth Technical School, met her death in a manner which should prove a warning to those responsible for the teaching of practical chemistry to children. In performing an experiment she had to suck a solution of caustic soda up into a pipette. Some of the solution entered her mouth and was swallowed. This experiment is provided for in the syllabus of the board of education and is carried out in practically all the technical schools of the country. The girl's mouth and throat were badly burned and she died a month later. The teacher who had conducted the experiment had included it in his instruction for the last ten years without accident. Now that this sad accident has happened, no doubt the authorities will insist that in future the experiment be conducted so as to make such an occurrence impossible. This could easily be done. At the inquest the father of the child pathetically asked: "Why was not a safety pipette used"? A pipette with a bulb would retain any excess of liquid which might be drawn up. A still safer and very ingenious invention has been introduced by Mr. Elias, who has called the attention of the authorities to it. It is termed a "fountain bulb." By compression of the bulb a burette or pipette can be accurately charged and all suction by the mouth is dispensed with.

Oysters and Sewage.

In the court of appeal an important case has been tried in which the urban district council of Warblington sought to have quashed a judgment of Mr. Justice Walton, who held that they as the sanitary authority were liable in damages for loss caused by the contamination of oyster beds situated on the foreshore of the manor of Emsworth. The council devised a scheme for the drainage of Warblington, the effect of which was to discharge the sewage just above the oyster beds. Dr. Bulstrode, a health officer of the local government board, visited the town and made a report in which he pointed out the danger that the oyster beds ran from contamination with sewage. Subsequently some oysters were supplied for a banquet, after which some of the guests were taken ill and died from typhoid fever. The result of an inquiry was to attribute the disease to the oysters. The trade of the proprietor of the beds being thus ruined, he brought an action to restrain the council from continuing to discharge sewage in the neighborhood of his oyster beds, so as to render the oysters liable to contamination and unfit for food. Mr. Justice Walton held that the plaintiff was not entitled to an injunction, but to damages, and ordered an inquiry. The defendants appealed, and the court affirmed the previous judgment.

The Invalid Children's Aid Association.

This association, which has been doing good work for seventeen years, now appeals for help. Its object is the care and relief of children suffering from tuberculous disease of the spine, bones, joints or glands, rickets, deformities, etc. These children require months and sometimes years of treatment, but they can not be retained in hospital indefinitely, and at home they are very liable to relapse even after successful operations. They are visited by women who are members of the association and, if possible, sent into the country; when this is impracticable they are provided with spinal couches or carriages, splints, crutches and the like, which the parents could not procure. Over $15,000 is spent yearly in the maintenance of beds constantly occupied in various homes in the country and at the seaside. About $2,500 is spent annually on surgical appliances, spinal carriages and other means of alleviation and physical improvement. A new departure in the association's work is an attempt to place children suffering from incipient phthisis under open-air and favorable conditions. Over 12,000 children have been under the care of the association, which works in co-operation with hospitals and other charitable agencies.

Pharmacology

A Hopeful Sign for Better Pharmacy.

A few weeks ago some of the progressive pharmacists of Chicago organized a local branch of the American Pharmaceutical Association; last week our news columns recorded the formation of a similar organization in Philadelphia. This movement is an encouraging sign and we certainly hope that it means that the retail druggists of the country have at last realized the position into which they have been gradually drifting.

For a number of years the efforts of a great number of retail druggists appear to have centered in obtaining better profits from "patent medicines." Evidently out of these efforts has developed a great, and in many respects a powerful organization, known as the N. A. R. D., with hundreds of affiliated local associations, the sole aim of which appears to be to aid "patent medicine" manufacturers to foist their wares on the public rather than to encourage its members to do better work as pharmaceutical chemists.

Largely through the efforts of this Association thousands of direct contracts have been entered into between "patent medicine" manufacturers and retail druggists by which the latter, in consideration of the additional profit promised them, voluntarily agree to refrain from discriminating in any way against the products of the manufacturer, and, while not so stated, to increase the sale of their articles.

It is largely due to the moral, or more correctly to the immoral, effect of this that retail druggists in all parts of the United States have apparently lost sight of the direct interests of the community at large and their true functions as pharmacists, and have not taken an active part in the agitation that is being waged against frauds in "patent medicines," but have, on the other hand, arrayed themselves against legislation that has been introduced in a number of state legislatures to eliminate secrecy, and with it the more evident possibilities of fraud, from the sale of popular nostrums.

The reawakening of pharmacists to the importance and need of higher ideals and higher aims in their vocation than the sale of nostrums at full prices, is indeed a promising one, and one that is worthy of our endorsement and support. To illustrate the objects and the aims of the new Philadelphia association we quote from the circular letter sent out as an invitation to pharmacists to attend the initial meeting:

"Among the more direct objects to be sought for and attained by the institution of a local branch, are:

"The development of a scientific spirit among the members of the profession.

"A more complete adherence to the Pharmacopeia of the United States and other generally accepted formularies in making the preparations to be used in the practice of medicine.

"The discovery and exposure of fraud and of fraudulent practices in connection with the materials used as medicine.

"The elimination of secrecy and fraud from the practice of pharmacy, and the cultivation of a proper appreciation, by members of the medical profession and others, of the ability, duty and position of an up-to-date pharmacist."

We physicians are in part responsible for the degradation of the retail pharmacy through our thoughtless prescribing of ready-made nostrums; and we should encourage this effort of the American Pharmaceutical Association to bring about better conditions. Undoubtedly a majority of the retail druggists of the country—certainly all the intelligent and educated among them—are opposed to the toadying to the "patent-medicine" men and will be glad of the promise of a better state of affairs which is becoming more and more evident. Pharmacy is to medicine what the ordnance department is to the army in the field; and the antagonism between the two, which has been developing in recent years, is destructive to the best interests of both, and, especially, of the public.

Deaths from Bromidia.

Dr. Horatio C. Wood, Jr., Philadelphia, writes:

One of the deleterious results of using proprietary mixtures even when the formula is known is that the physician gets in the habit of thinking of the mixture as a remedial entity, instead of a combination of active ingredients, and is thereby led to use this combination in cases in which he would have avoided the individual drugs making up the mixture. The following item is taken from the Philadelphia *Evening Telegraph*, February 13, and also appeared in several New York papers; it preaches an eloquent but pathetic sermon on this subject:

Within an hour after his father, a Brooklyn physician, had given him a dose of bromid, H. G. P., a prodigal son, died yesterday at his father's home in Brooklyn. Two years ago, when he appeared to have sown his wild oats, the father made him superintendent of his country place, near Grant's Mills, Delaware County. A week ago the son left his place, and at 1 o'clock yesterday morning appeared at his father's Brooklyn home. He was nervous, and at 9 a. m. begged for a sedative.

"I prescribed the usual quantity of bromidia," the young man's father told a reporter. "He was weak and had suffered from weak heart and kidney trouble for some time."

An hour later the father found the son dying and administered restoratives, but to no avail.

In an article published in THE JOURNAL, June 10, 1905, page 1836, I quoted in regard to bromidia the remarkable statement of the manufacturers that it is "the safest hypnotic known," and questioned how the addition of potassium bromid and tincture of hyoscyamus could overcome the depressant action of the chloral, which is the active ingredient of this nostrum. If the physician had thought of his bromidia as a solution of chloral rather than as a solution of bromid he probably would have hesitated before using it in an alcoholic case.

The following appeared in the Bangor (Me.) *Commercial*, March 8:

"Frank H. Perkins, a newspaper reporter of Plymouth, Mass., was found dead in a room in a hotel in Augusta, Sunday. The coroner stated that death was due to bromidia poisoning, but whether the drug was taken accidentally or with a suicide intent is a matter of conjecture. Perkins was a newspaper correspondent in Plymouth for 22 years. He left a few weeks ago to accept a position on the city desk of the Kennebec *Journal*. While a resident of Plymouth, he was correspondent for a number of Boston papers, and in recent years was connected with the Plymouth *Observer*. He was 55 years old and unmarried. It is understood that his nearest surviving relative is an aunt in Middleboro."

The above item was sent to Dr. O. C. S. Davies, Augusta, with a request that he send us a more complete report of the case. In his reply Dr. Davies stated that Mr. Perkins had at one time been an inmate of an inebriates' home and that he had gone to Augusta to do newspaper work, but had been unable to hold the position because of his condition. Dr. Davies, in his letter, says: "When the body was found, there were eleven one-ounce bromidia bottles about the room or on his person. Nine were entirely empty and the other two were about half full. None of these bottles indicated that they had been purchased on a physician's prescription, only the druggist's label marked 'bromidia' being on them."

Death from Headache Powders.

Dr. J. A. McCullum, Arkadelphia, Ark., reports a death from headache powders, self-administered: "Mrs. D. G. was subject to attacks of migraine, for which she had been in the habit of taking headache powders—the kind called 'Dixie pow-

ders.' She had taken at least three or four (possibly more) just preceding her death and while in a state of collapse from sick headache. Hypodermics of strychnin, digitalin and atropin with counterirritation with mustard plasters to inside of limbs and over spine, and hot water and mustard footbaths failed to revive her and she lived only a few hours."

Headache Powders and Deaths from Heart Disease.

Dr. W. H. Graves, Dodge City, Kas., writes:

"I was called to see a patient in a deplorable state of collapse from taking headache powders. I went to the drug store to investigate and found that the tablets were put up by a firm of high repute and long standing, but there was nothing on the label on the bottle or on the circulars to indicate the contents of the tablets. Neither was there any formula in the price list. I wrote to the firm in regard to the matter and learned what I suspected: that the tablets contained acetanilid. But the firm thought that as the average dose, according to the United States Dispensatory, was from five to fifteen grains, a tablet containing two grains could not do any harm unless it had been used recklessly. I protested that there was nothing on the package or in the price list to warn any one against the reckless use of an unknown and, therefore, doubly dangerous remedy. I called attention to the fact that in 1890, the first census since the use of coal-tar synthetics became at all general deaths from heart diseases were 38 per cent. more than in 1880, and in 1900 they were 72 per cent. more, allowing for the increase in population—this in the United States! They replied, expressing their astonishment and concern at the facts, to which their attention had never been called, and assuring me that they would at once take steps looking to a withdrawal of the preparation from the market.

"If the letter from one of whom they never heard before has such an effect on a manufacturing firm, surely letters of protest from old customers, known and esteemed for many years, will have decidedly beneficial influence."

Newspapers for "Patent-Medicine" Legislation.

One of the most encouraging developments of the past few months is the fact that many of the leading newspapers have come out in favor of regulating the "patent-medicine" business. The Chicago *Tribune*, one of the most influential newspapers of the country, is one of these, and we reproduce the following editorial from its issue of April 13:

RIDING THE SALE OF POISONS.

Protests continue to pour in against the proposed amendment to the regulations of the pure food bill relating to patent medicines, to which attention was called by the *Tribune* a few weeks ago. The bill as passed by the senate made it unlawful to sell a patent medicine containing certain dangerous drugs without a label stating their presence and the amount of them. The amendment permits proprietary preparations having less than two grains of opium or one-quarter of a grain of morphin to the ounce to be sold without such label to put the buyer on his guard.

There are two reasons why this should not be allowed. A quarter of a grain of morphin to the ounce may seem a trifle to the patent medicine manufacturer. The dose may be deadly for one who has never used morphin and is susceptible to its effects. The purchaser of a patent medicine which has been so heavily drugged may think an ounce is not too much to take at once and may put himself to sleep forever. There have been numerous instances lately of children killed by a patent medicine which was loaded with opium. There was nothing on the label to put the parents on their guard, and they unknowingly poisoned their children. That could not have occurred if there had been a decent law on the statute books.

In the next place the use of a patent medicine containing even an extremely small quantity of a drug like morphin may make him its slave. There is no question that thousands have become addicted to the use of narcotics in this way. If they had known what was in the nostrum they were taking they would not have touched it. Whenever a patent medicine contains such drugs as opium, morphin, or cocain, even in the smallest quantities, the label should set out the fact. Then the purchaser will buy at his own risk.

There would not be so many buyers as there are now. The patent medicine men are aware of it and that is the reason why they are lobbying so energetically in support of their dangerous amendment. It is strange that the members of the house committee are unable to see that they are co-operating in an attack on the life and health of the community. They are contributing to the spread of a baneful drug habit which it is so hard to cure. The amendment is said to have been accepted "tentatively." It should be rejected peremptorily by the committee, and if the amendment should be reported the house should make short work of it.

The proprietary medicine manufacturers have energetic agents at work in Washington. Organizations of physicians and other associations of citizens realizing the harm done by the indiscriminate and covert sale of poisons should bestir themselves to counteract their influence. Congress should be made aware that public sentiment is even more against the sale of unlabeled preparations containing poisons than it is against the sale of other fraudulent and deleterious commodities.

The Chicago *Evening Post*, April 12, has an editorial on the same subject, which we quote in part:

KILL THIS EVIL AMENDMENT.

It is the duty of every reputable physician and pharmacist in the United States, not only for his own sake but for the sake of his fellows, emphatically and formally to condemn one of the amendments to the pure food bill proposed by the United States Proprietary Association.

Briefly, this amendment provides that the maker of a patent medicine or proprietary article that is not prescribed by a physician, or one for which the formula does not appear in the United States Pharmacopeia or in the United States Dispensatory, shall not be required to print on the label the amount of poisons or narcotics it contains, provided this amount does not exceed two grains of opium or one-quarter grain of morphin to the ounce.

What druggist or doctor can read this amendment without being amazed at the blunted moral sense that could suggest it and shocked at the tremendous possibilities for evil that it so subtly aims to hide! * * * It was asserted that many patent preparations necessarily contained small quantities of narcotics and that when these were diluted as proposed in the amendment they would do no harm, "provided the patient did not know what he was taking."

Could ignorance or downright mendacity go further than this? No harm to give a person one grain of morphin in every four ounces of nostrum he swallows! No harm to make slaves to some drug habit, physical and moral wrecks, so long as the poor victims do not know the danger they are running! No harm to coin money at the expense of the health of thousands!

This amendment is utterly and absolutely bad. Yet it has been tacitly accepted by the committee and may become a feature of the pure food law. In that case it would legalize the selling of dangerous and harmful nostrums by anyone, for the sale of patent medicines is not restricted to druggists.

Let every physician, every druggist, every person who knows the awful dangers that lurk in the indiscriminate taking of narcotics, send his earnest protest against this amendment to his congressman and senators.

In this amendment lies unbounded power for harm; its mere proposal represents selfish commercialism at its lowest moral stage.

Even the Chicago *Daily News*, a paper which carries the most wretched "patent-medicine" advertisements, seems to be ready to defy the Proprietary Association of America, for in the issue of April 14 it too came out editorially against the "patent-medicine" men's amendment to the pure food bill, in an editorial entitled, "Another Attack on the Pure Food Bill." From this we quote:

Following the announcement that the makers of certain food preparations have succeeded in saddling the pending pure food bill with an amendment which threatens to render the measure nugatory comes the news of fresh opposition from another quarter. Deferring to the wishes of the makers of certain proprietary compounds, members of the House have given "tentative" adherence to an amendment which practically legalizes the sale of dangerous narcotics. . . . The person who consumes morphin in small doses without knowing what he is taking soon may find himself depending on the stimulant and developing a dangerous taste for the harmful drug. The very fact that he supposes the compound to be a medicine and regards its temporary quieting or exhilarating effect as beneficial, leads him to indulge in its unrestricted use, whereas he would resist vigorously any tendency toward becoming habituated to the use of opium or morphin sold by its proper name. In this as in the other features of the food bill, the consumer has a right to know whether he is getting something for his money that is likely to injure him. This is the principle adhered to in other countries, and it is the principle that should guide Congress unless this government is to go on record as legalizing a form of commercialism in which profits are sought at the risk of health and even of life.

We might quote similar expressions from newspapers in other parts of the country, but the above is sufficient to show that the Proprietary Association of America has "lost its grip" on papers of the town in which its headquarters are located.

Lay Resolutions Endorsing the Nostrum Campaign.

LEBANON, O., April 12, 1906.

To the Editor:—I enclose a copy of a memorial to the next general assembly of the Cumberland Presbyterian Church on the subject of medical advertisements, adopted by the Miami presbytery at its meeting in Lebanon, April 4, 1906. So far as I know this is the first instance of any religious body taking such action. It is to be hoped that many will follow the example. The work of THE JOURNAL on the nostrum question is heartily approved by all reputable physicians in Warren County.

B. H. BLAIR, M.D.

WHEREAS, There appear in the columns of our church paper and other periodicals, medical advertisements which are objectionable because of their misleading, deceptive, untrue, and fraudulent character; and

WHEREAS, The publication of such advertisements tends to suggest the presence of disease, which does not exist, to cause a postponement of early diagnosis and appropriate treatment of many serious maladies, and to injure the physical, mental and moral well-being of many readers who implicitly rely on what they have read in their church paper; and

WHEREAS, Our official church organ, by its course in admitting such advertisements is subjecting itself to ridicule while other periodicals of recognized standing are refusing all medical advertisements; and

WHEREAS, Many of the popular nostrums advertised contain alcohol, opium, chloral or cocain or other drugs in quantities, the indiscriminate use of which tends to produce drug fiends and inebriates and thereby to defeat the cause of temperance as presented and advocated by the same paper; and

WHEREAS, Reputable Christian physicians of unquestioned professional standing and eminent qualifications, on whose judgment we must rely on questions of medical character and whose labor and influence are exerted for the moral and physical betterment of humanity, it is to be observed, are a unit in condemnation of such advertisements; and

WHEREAS, The injuries wrought and evils perpetrated by the practice of charlatans and quacks are recognized, only in their fullest, by physicians and in part by intelligent laymen; and

WHEREAS, No amount of money received from such advertisements can right these wrongs; and

WHEREAS, We affirm our affection for the *Cumberland Presbyterian* and express our confidence in its management and editorial control and observe with pride its attainment. Therefore, be it

1. *Resolved*: That the General Assembly direct its board of publication, through its agents, to refuse all advertisements of a medical character unless said advertisements are first approved by the board to be hereinafter named. And

2. *Resolved*, That this special board be composed of three physicians, selected by the board of publication, for their known high professional standing, eminent qualifications, ripe experience, and unquestioned integrity.

Societies Take Action.

PHILADELPHIA, April 7, 1906.

To the Editor:—Will you kindly insert in the columns of THE JOURNAL the enclosed resolutions of the Medicolegal Society of Philadelphia?

These resolutions echo not only the sentiments of the members of this society, but of all the medical societies of Philadelphia. ALBERT M. EATON.

The Medicolegal Society of Philadelphia thanks the Board of Trustees of the American Medical Association for establishing a Council on Pharmacy and Chemistry. It considers this innovation of paramount importance to the general practitioner of medicine.

This work comes at the right time; is done in the right spirit, and should be received by the medical profession with real thankfulness.

To the editor of THE JOURNAL of the American Medical Association we owe a debt of gratitude; his policy has been plainly and fearlessly presented, every position he has taken against all degrees of quackery he has sustained, and he should be encouraged to hold to this high standard.

The Medicolegal Society feels that this good work can not be assumed and performed exclusively by the Board of Trustees of the Association nor by the editor of THE JOURNAL.

We believe that all members of the American Medical Association should dedicate themselves to the promotion of this propaganda to a successful issue, and that every physician who is eligible should become a member, thus bringing to the organized profession strength, influence and wealth; factors of inestimable value in increasing the influence of the American Medical Association to both physician and state and the upbuilding of scientific medicine in America.

W. T. HAMILTON, M.D., Secretary.
ROYAL W. BEMIS, M.D.
ALBERT M. EATON, M.D.

At the annual meeting of the Morris County (N. J.) Medical Society, held at Morristown, March 13, 1906, resolutions were adopted commending and endorsing the work of THE JOURNAL A. M. A., the *Ladies' Home Journal*, *Collier's Weekly*, the *Farm Journal*, and the Marine (Ill.) *Telegram* in enlightening the profession and the public regarding the nostrum evil, and especially commending THE JOURNAL A. M. A. for refusing to publish advertisements of medical agents the composition of which is concealed. The society also deprecated the fact that daily and weekly papers, periodicals representing religious denominations and organs engaged in reform work, including even some medical journals, accept advertisements of "patent medicines" a great percentage of which are rank frauds. The society also offered its aid and co-operation in any wise effort toward the enactment of legislation that will protect the public from the evils of "patent medicines."

The Cleveland County (Ark.) Medical Society at its March meeting adopted a resolution heartily endorsing the work which the American Medical Association has done and is doing in regard to the control of the "patent medicine" evil, and declared its intention of aiding the association in every way possible.

The Denver and Arapahoe County (Colo.) Medical Society, at a meeting held April 3, 1906, endorsed the resolutions on the nostrum evil which were passed by the Philadelphia County Medical Society January 10, and published in THE JOURNAL January 20; and the resolutions adopted by the New York Academy of Medicine, January 18, and published in THE JOURNAL January 27.

The society also adopted the following resolutions:

Resolved, That the secretary is hereby requested to tender the thanks of this society, especially to *Collier's Weekly*, the *Ladies' Home Journal*, and *Everybody's Magazine*, for their excellent work in behalf of the public health, in exposing impure drugs, impure foods and adulterated liquors.

Resolved, That we deeply appreciate the power and influence of the lay press in supporting the Pure Food Bill which recently passed the United States Senate and is now pending in the House of Representatives.

Resolved, That a copy of these resolutions be sent to each member of Congress of the State of Colorado with the request that they support the bill as it passed the Senate.

Resolved, That a copy of these resolutions be sent to the secretary of every county and district medical society in the state of Colorado with the request that they be presented to the respective societies for their consideration and their adoption urged.

Resolved, That a copy of these resolutions be sent to THE JOURNAL of the American Medical Association; and also to the daily press of Denver, requesting its co-operation in this endeavor to promote the public health and welfare.

W. W. GRANT,
GEORGE H. STOVER,
DANIEL S. NEUMAN
Committee

Madison County (Ky.) Medical Society at a recent meeting passed resolutions endorsing house bill No. 53, introduced by L. F. Johnson of Franklin County, the purpose of which is to regulate the sale of "patent medicines" in Kentucky.

At the regular meeting of the Dodge County (Neb.) Medical Society held at Fremont, March 8, 1906, resolutions were adopted endorsing the pure food bill as passed by the United States Senate during the session, and commending the policy of the *Ladies' Home Journal*, *Collier's Weekly* and THE JOURNAL of the American Medical Association in the fight against nostrums.

The society also ordered a copy of the resolutions sent to their representative in Congress requesting him to support the pure food bill on behalf of the physicians of Dodge County.

At a meeting of the St. James' Parish (La.) Medical Society, held December 7, 1905, resolutions offered by Dr. B. A. Colomb were adopted endorsing the movement against the "patent medicine" fraud and resolving to aid the lay journals and THE JOURNAL of the American Medical Association in this campaign by not prescribing such preparations. The Society also advised that the American Medical Association and its component societies distribute literature among the laity giving reliable information regarding the principal "patent medicines."

The Wayne County (Mich.) Medical Society at a meeting held March 5, passed resolutions endorsing the work of THE JOURNAL, the *Ladies' Home Journal*, *Collier's Weekly*, and the *Druggists' Circular* in the campaign against the proprietary and "patent" medicine evils, and asking members of the society not to use, or to sanction the use of remedies the nature and quantity of whose ingredients are unknown.

Similar resolutions were adopted by the Oakland County (Mich.) Medical Society, and by the Medical Society of the Borough of the Bronx (N. Y.). This last named society also commended the work of the Council on Pharmacy and Chemistry and urged each member to abide by the Council's reports and to prescribe nothing which the Council does not approve.

Letters of Commendation.

Dr. R. H. Ballard, Wheeling, W. Va., writes:

"I notice with much pleasure the position your JOURNAL takes regarding proprietary medicines. May the good work go on until the medical journals generally are forced to strike from their pages the 'thousand and one' advertisements the very existence of which is a cause for shame on the profession of medicine."

Dr. Walter W. Stebbins, Mount Horeb, Wis., writes:

"I wish to commend the fight you are making on nostrums. Keep up the good work."

Dr. W. J. Burdell, Lugoff, S. C., writes:

"Congratulations on the fight against nostrums and also congratulations to the editor for the splendid JOURNAL he is giving us."

Dr. W. K. McCoy, Gum Springs, W. Va., writes:

"I assure you of my unqualified endorsement of your fight against nostrums, whether 'ethical' or not."

The Methods of the Cheney Medicine Co.

Drs. Brown and Lenox, Rogers, Ark., send us an account of a case of catarrh which was not cured by Hall's Catarrh Cure. The patient, Mr. Robert Parks, consulted these physicians for catarrh and stated that he had just finished his twenty-sixth bottle of Hall's Catarrh Cure, but that instead of being benefited he was worse. Mr. Parks wrote to the Cheney Medicine Co., the makers of Hall's Catarrh Cure, giving his experience, and asking the firm to pay $100 in accordance with the advertisements: "$100 for any case of catarrh which it will not cure" or to refund the money he had paid.

The following is a copy of a letter which he received in reply:

TOLEDO, OHIO, March 30, 1906.

ROBERT PARK, Rogers, Ark.

DEAR SIR:—Yours of recent date received, and in reply will say, as we have already said, that many cases require much more than you have taken for a cure, and as this is the case and Hall's Catarrh Cure is not placed on the market on the "No cure, no pay" plan, we would not feel at all justified in refunding the money paid for this trial of the medicine. Will furtner say that you have failed to state much regarding your disease, symptoms of same, of how long standing, symptoms of the action of the medicine, etc. Had we more information concerning your case, we might have been able to make some helpful suggestions regarding the treatment. Yours very truly,

F. J. CHENEY & CO.

A. G. A.

The above is an example of the shrewdness and the unscrupulousness of nostrum vendors. Their brazen offers of reward are fortified by conditions impossible to fulfill. Of course, a patient should not expect to get results from simply twenty-six bottles! He should keep on until old age carries him off, or he must be very sure to inform the company of his slightest symptoms or he will fail to reap the benefits of their valuable remedy. It will be remembered that Mr. Cheney is the author of the "Red Clause," he is the man who bragged to his fellows at the last meeting of the American Proprietary Association, of which he was president, of having a lobbyist in the different state legislatures so as to be ready in case any untoward legislation should be introduced. He is too shrewd a business man to risk having to pay $100 to every individual with catarrh who tries his nostrum without being cured.

Medical Legislation

Medical Men in Congress.

The Committee on Medical Legislation, in its efforts to secure the enactment of medical legislation, has felt the need of more representation in the halls of Congress. For the first time in several years the medical profession is represented in the House, the following two physicians having taken their seats in the present Congress:

DR. HIRAM RODNEY BURTON, of Lewes, Sussex County, Delaware, is a Republican member of the Fifty-ninth Congress. Dr. Burton was born in Lewes, Sussex County, Delaware, Nov. 13, 1841, and attended the schools of his native town. He taught two years in Sussex County and engaged in the mercantile business in Washington from 1862 to 1865, after which he entered the Medical Department of the University of Pennsylvania and was graduated in 1868. He then began the practice of medicine at Lewes, where he has since resided. Dr. Burton has played a prominent part in the politics of his native state for the past thirty years. In 1877 he was appointed deputy collector of customs for the port of Lewes; during the years from 1890 to 1893 he served as acting assistant surgeon, United States Marine-Hospital Service; he was appointed delegate to the national Republican conventions of 1896 and 1900; ran for state senator from the fifth district of Delaware in 1898; is a director in the Queen Anne's Railroad and in the Lewes National bank, and was elected to the Fifty-ninth Congress.

DR. ANDREW JACKSON BARCHFELD, Republican representative from the Thirty-second Pennsylvania district, was born in Pittsburg, Pa., May 18, 1863. He received his education in the public schools and Pittsburg Central high school, and was graduated from Jefferson Medical College, Philadelphia, in 1884. He has been actively engaged in politics since attaining his majority; was elected school director in 1885; a member of the common council of Pittsburg in 1886 and 1887; was a delegate to the Republican state conventions in 1886, 1894 and 1901; for some years a member of the Republican state committee; ran for Congress in 1892 and was defeated; took an active interest in presidential and gubernatorial campaigns in his state. Dr. Barchfeld stands high in the medical profession of his state and country. He is a member of the Pittsburg South Side Medical Society, Allegheny County Medical Society, Pennsylvania State Medical Society and American Medical Association, is president of the board of directors of South Side Hospital, Pittsburg, and a member of the staff. He was elected to the Fifty-ninth Congress in 1904 by a large majority.

DR. JACOB H. GALLINGER, Republican, of Concord, N. H., has represented the medical profession in the Senate since March 4, 1891.

He was one of a family of twelve children, and was born in Cornwall, Ontario, March 28, 1839, of Dutch ancestry, his great-grandfather having emigrated from Holland before the War of the Revolution.

Receiving a common-school and academic education, he studied medicine and was graduated in 1869 from the New York Homeopathic Medical College and Hospital. He settled in Concord, where he resided, pursuing the practice of medicine and surgery until elected to Congress. Dr. Gallinger was identified with the leading medical organizations of his state and country, and was a frequent contributor to medical literature.

He began his political career in 1872 when he was elected a member of the House of Representatives of New Hampshire, since which time he has continuously played a prominent part in the affairs of his state and country. He served his state as a member of the constitutional convention in 1876, was a member of the State Senate in 1878, 1879 and 1880; in 1879 and 1880 was surgeon-general of New Hampshire; in 1885 he received the honorary degree of A.M. from Dartmouth College; is a trustee of the George Washington University of Washington, D. C. For eight years he was chairman of the Republican State Committee, resigned and was elected in 1898, 1900, 1902 and 1904; in 1888, as chairman of the delegation from the State of New Hampshire to the Republican National Convention, he made a speech seconding the nomination of Benjamin Harrison; in 1900, was also chairman of the New Hampshire delegation to the Republican National Convention at Philadelphia which nominated William McKinley. He was at one time a member of the National Republican Committee and was elected to the Forty-ninth and Fiftieth Congresses. He declined renomination to the Fifty-first Congress. He was elected United States Senator to succeed Henry W. Blair and took his seat March 4, 1891. In 1897 he was re-elected by a unanimous vote of the Republican members of the legislature and the votes of five Democratic members. He was re-elected in 1903, having the distinction of being the only man in his state who was elected United States Senator for three full terms. His term will expire March 3, 1909.

Correspondence

Dr. McCormack's Organization Work.

JACKSONVILLE, ILL., April 17, 1906.

To the Editor:—I write to ask if it would not be desirable to do something to secure for Dr. McCormack audiences somewhat in proportion to the importance and value of the great humanitarian work which he is doing. It seems to me a shame for him to go on from day to day making these important talks to little groups of doctors and citizens, when every person is so vitally involved in the subjects discussed.

No one, who may call on a physician for services, should fail to hear these topics considered. The patrons of physicians will be greatly benefited and will look on the physician with

an increased respect if he is worthy, and if not will set about to make him worthy or discard him as unworthy. It is impossible for the local medical men to do this work effectively without more detailed information as to what is to be expected.

Last Tuesday evening Dr. McCormack talked to our citizens and the room was filled with our best people. Everybody was delighted, but all united in saying that it was a great misfortune that only two or three hundred people should have had the privilege of being present.

This is what I hear every place Dr. McCormack has talked. They say, "If we had only known something of the character of his address beforehand there would have been two or three times as many present."

The fact is, Dr. McCormack is doing a great missionary work, probably the greatest missionary campaign by any individual to-day, and we should recognize it as such and give it the support and advance announcement which it deserves. The profession, as well as the people, should be better instructed in advance as to the field to be covered and the objects of these talks. If it could be made plain that the primary object is to help the people and give them a proper conception of what organized medicine stands for, it would go far toward securing the coöperation of all good citizens in doing away with the inherited antagonism to the medical profession, which has long existed among our people.

The profession, as well as the people, should learn from him that the basis of most of our professional difficulties and misunderstandings with the public are to be found in the jealousies and antagonisms within our own ranks, which we are making a great campaign to eliminate. The doctors of the past have kept themselves poor by hating each other and misleading the public. Everyone should understand that one of the purposes of this great work in which Dr. McCormack is engaged is to improve the condition of the profession by pointing out its poverty, brought about by envy, jealousy and poor business methods.

He most admirably brings about a frank and open discussion of these subjects among the doctors and between them and all classes of the public. He drives home the lesson that a jealous and envious doctor, and one kept in poverty, is a danger and menace to the community, and plainly advises the public against the employment of such. Neither the doctors nor the people realize the number or importance of these problems of mutual interest.

His statement of the poor business methods of many physicians, as well as their bad professional methods, attracts attention and does great good. The drug store evil, the social disease evil, and inattention to sanitary and health matters are a few of the subjects of mutual importance which receive attention in his addresses and never fail to arouse the public.

The remedy for these and other evils and antagonisms which exist he finds in a complete understanding (organization) among ourselves and a frank discussion of every interest of the profession with selected classes of the public, as well as the general public and patrons of the physicians. If physicians would realize the importance of these subjects they would soon see, what Dr. McCormack makes so plain, that the medical profession has no interest, including our financial condition, which is not of far more importance to the public than to the doctors.

If some plan could be devised by which at least the members of our county societies were informed in advance of the scope and importance of these addresses, it would certainly aid Dr. McCormack in his work. No man can do this effectively for himself. In order that the lawyers, bankers, editors, clergymen, teachers, druggists, legislators, commercial bodies, city and county officials, civic leagues, W. C. T. U. and Y. M. C. A. members, club women, farmers' organizations, labor unions, and all others, can be impressed with the importance of the subject, they must have some advance information as to the personality of the man as well as the character of his address. Each doctor should endeavor to have his patrons present. He will be amply rewarded by the better respect and better pay which they will give him, for they will certainly hear some of the most vital questions of the day presented in a most charming, effective and practical way. Dr. McCormack can tell the plain truth in a way which excites great interest and desire to do better, but never leads to bitterness or leaves a sting.

This work has such unlimited possibilities for good to the public, to the sister professions, and to our own profession, that it is unfortunate that we do not secure for our field worker in this great campaign of education a better hearing. Scores of my own citizens have expressed their regret at not being more carefully informed as to what was to be presented in order that they could have attended. The purposes, the evils to be corrected, the classes to be reached, the remedy to be applied, and the possibilities of the work should be understood in advance if the greatest good is to be accomplished by these addresses.

You cannot too strongly impress on the profession and on the public the value and importance of the subjects, and you may rest assured that there will be no disappointment on the part of either after hearing one of Dr. McCormack's most admirable and practical addresses.

I write you in the hope that some better plan may be devised by which the profession and the public may have more advance information in order that a greater number of people may have the privilege of this instruction.

CARL E. BLACK.

Need for Additional Nomenclature.

CHICAGO, April 14, 1906.

To the Editor:—In view of the recent laudable attempts to establish the functional diagnosis of the alimentary tract by means of minute examination of the feces on a systematic and trustworthy basis—an attempt which I firmly believe will eventually justify itself in the satisfactoriness of its methods and the value of its findings—it seems as though a suitable nomenclature should be adopted in order to clarify and simplify the literary features of the undertaking. This nomenclature should be uniform with that of the pathology of the urine, since both are concerned with excretory products.

The word "feces," which is universally, and I believe exclusively used to designate the excrement of the bowels, is the plural form of the Latin word, *fax*, meaning a sediment, of which the genitive form is *fæcis*, and in order to follow the nomenclature of the urine, I would suggest that the affix *sia* be applied to the root of the word, making *fæcia*, and this, in conjunction with the basic word, be used to express the pathologic condition in question. Thus, "hemafecia" would mean blood in the feces, "pyofecia" pus in the feces, "bilifecia" bile salts in the feces, and so on.

The question of nomenclature may seem to some a small and insignificant matter, but it is, I venture to think, by no means an unimportant factor in the orderly and systematic arrangement, and even in development, of a branch of applied science.

THOMAS G. ATKINSON.

The Association Button.

CHICAGO, April 11, 1906.

To the Editor:—While traveling in the south recently I was accosted one morning by an elderly gentleman who certainly would not have spoken to me had it not been that I had on the button of the American Medical Association. I found that he was a practitioner from Ohio, that he belonged to the American Medical Association, but he did not have on a button. We were on good terms at once, and I enjoyed meeting him very much. This brought to my mind the great advantage that I believe would accrue to the members of the American Medical Association if each one would wear his button all the time. There is a fraternal feeling among the profession, probably stronger than that among any of the fraternal societies; yet, without some badge when we meet a strange physician, we do not know whether he is a physician or not, and if he is not a member of the American Medical Association we have some question about his standing, even though he claims to be a physician. The button would be an introduction at once and would place physicians on a pleasant footing, even though they had never met before. If all the members would wear their buttons it would soon be discovered by other physicians that it was

very desirable to belong to this great organization. I hope some plan can be formulated which will induce the members of the Association to put on this badge. It is small, unobtrusive, and the laity do not even know its meaning; therefore, I can see no objection to it. But certainly none of us need be ashamed of belonging to the American Medical Association, even if the laity knew what the button meant.

E. Fletcher Ingals.

[Dr. Ingals' suggestion is a good one. There was a time when the doctor was known by his peculiar dress; his gold-headed cane was the insignia of his calling. But now there is no distinctive mark to separate him from his fellow mortals. Possibly some will say that it is not necessary, and probably this is true, but when traveling it is very pleasant, sometimes, to be able to go up to a man one has never met before, and with confidence extend the hand of greeting. The American Medical Association button is a means of introduction that will often bring two congenial souls together, to the pleasure of both.—Ed.]

Trip to China and Japan.

St. Paul, Minn., April 14, 1906.

To the Editor:—The Great Northern Railway Company has made me a very generous offer. If I can organize a party of 100, to include physicians, their families and their friends, it will give us round-trip rates from St. Paul to Japan and China and return for $700. This rate includes a double berth from St. Paul to Seattle and return, dining-car service to Seattle and return, first-class hotel in Seattle if necessary either way, first-class outside stateroom on the 28,000-ton steamship *Minnesota* from Seattle to China and return, with not more than two in a room, first-class hotel accommodations in Japan and China, jinrickishas, carriages or sedan chairs in Japan and China when desired, first-class railway transportation in Japan and boat transportation in China. For any one joining the party on the steamship in Seattle and leaving the party at Seattle on its return, a rate of $625 will be made. If any members of the party wish to remain in Japan at their own expense instead of going to China with the steamship a refund of $75 is made. The above rates also include guides. The party will leave St. Paul about July 21, sailing from Seattle on July 25, and reach Seattle on its return October 5 and St. Paul about October 9.

If any physicians wish further details it will afford me pleasure to answer any questions. Alexander J. Stone.

Hereditary Transmission of Yellow-Fever Parasite in the Mosquito.

Birmingham, Ala., April 14, 1906.

To the Editor:—I have just received a copy of "Yellow Fever Institute Bulletin No. 15," containing the account of an attempt to prove the "hereditary transmission of yellow-fever parasite in the mosquito."

In this experiment, fourteen mosquitoes, the progeny of three laboratory-grown mothers, were used, divided into three sets.

The mother of Set 1 was hatched in the laboratory. On October 3 she was allowed to sting a yellow-fever patient; again, on October 5, she stung same patient. On October 8, 10 and 12, she was allowed to feed to her fill on an immune. On October 17 she laid eggs for Set 1.

The mother of Set 2 was hatched from larva, "and for some time fed on immune blood." On October 4 she stung a yellow-fever patient. On October 6, 8, 10, 12 and 15 she fed on blood of an immune. On October 19 she laid eggs for Set 2.

The mother of Set 3 was raised from larva. On October 4 she stung a yellow-fever patient. On October 6, 8, 10, 12 and 14 she fed on blood of an immune. On October 18 and 19 and November 2 and November 13 to 18 she laid eggs for Set 3.

Now, let us suppose for a moment that hereditary transmission in the mosquito is a fact.

Immunity is supposed to be due to the presence in the blood of an immune of an antibody, and when the antibody disappears from the blood immunity ceases.

These mother mosquitoes were fed first on yellow-fever blood, then on immune blood, and afterward laid the eggs from which were hatched the experimental mosquitoes.

Is it not reasonable to suppose that the yellow-fever parasite taken with the yellow-fever blood, was destroyed by the antibody taken afterward in the immune blood, thus rendering it impossible to transmit the parasite by the eggs deposited at a later date?

And is not this experiment just as valuable in a positive way as the case of Marchoux and Simond, whose reported case was caused by mosquitoes hatched from eggs deposited by a mother fed only on syrup and yellow-fever blood?

J. M. Lowrey.

Tropical Gangrene in Guam.

Norfolk, Va., April 9, 1906.

To the Editor:—In The Journal, April 7, a paragraph appeared under the above heading, doubtless inspired by a Washington dispatch of the Associated Press which was published widely in the newspapers recently. The dispatch related to a report made by a lay official in the Island of Guam referring to a peculiar disease which is prevalent in that island and which has already been recognized by professional authority under the name rhinopharyngitis mutilans. (Report Surgeon-General of the Navy, 1905, et al.)

The Associated Press paragraph states that the report from Guam refers to the disease as *gangrosa*. It is not to be wondered at that the correspondent of The Journal did not know what this meant, but he was hardly justified in assuming from the form or sound of the word that it meant gangrene. As the heading and content of the paragraph convey an impression which is very far from the truth, I hope the explanation necessary to enable The Journal to set itself right will not be unacceptable.

The Spanish adjective *gangoso* (masculine), *gangosa* (feminine), means snuffling, nasal, catarrhal, ozenous. It is applied by the Spanish (and, after them, by the Chamorros of Guam) to any person who has a chronic nasal affection, and the word is entirely without special application or meaning in connection with the *rhinopharyngitis mutilans* prevalent in Guam. In Spain, or in Guam, *un hombre gangoso* or *un gangoso* is a snuffler, a man who has the snuffles. A woman so afflicted is *una gangosa*. Gang(r)osa is a misspelling of the feminine form of this adjective and not the name of a disease. No form of gangrene is prevalent in Guam.

I have recently served more than two years in Guam as a medical officer and as health officer of the island, a longer time than any other American medical man has ever spent there, and feeling, as I do, a keen interest in all that pertains to the island and its welfare, I venture to ask you to correct the wrong impression which you have inadvertently given in the paragraph referred to.

A prominent physician of Philadelphia, whose daughter happens to be living in Guam at the present time, was so alarmed by this "gang(r)osa" nonsense as published by the Associated Press that he sent me the paragraph and asked me what it meant.

I send you herewith a reprint, from the *Journal of Tropical Medicine*, Feb. 15, 1906, of the latest article I have published on the disease, *rhinopharyngitis mutilans*. As the *Journal of Tropical Medicine* reaches a very limited number of readers in America, as neither the article nor its substance has been offered to or has appeared in any American publication, as Guam is an American possession and as our American medical men are taking an increasing interest in tropical medicine, you may care to take some more extended notice of the subject than the mere correction of the misinforming paragraph to which I refer, and if you do the article I inclose is entirely at your disposal.

James Farquharson Leys,
Surgeon United States Navy.

[In the article referred to Dr. Leys describes the disease as beginning with sore throat and showing, on examination, a small ulcer on the back of the pharynx, on a posterior faucial pillar or on the free edge of the palate. The ulceration almost always extends upward, destroying the soft palate and

attacking the bones of the palate and nasal septum, finally destroying these entirely. While the disease is usually arrested at this stage, leaving the face of the victim deformed from the falling in of the nasal cartilage and skin, in less than 10 per cent. of the cases the skin of the nose and face are attacked. In such cases one can look through the anterior nares into the mouth and down the throat.

The disease appears to be infectious, and, although somewhat amenable to local surgical and antiseptic treatment, the infection is very difficult to eradicate and the affection is prone to recur. There are no constitutional symptoms, the general condition being in marked contrast to that in tuberculosis and secondary syphilis.

The disease is known in various parts of Polynesia and probably also in the West Indies. It has been attributed to leprosy, syphilis, tuberculosis, and has been considered as a sequel of yaws. The first opinion is not entertained by those conversant with leprosy; the second is negatived by the fact that it attacks adults who have been in good health and who show no signs of hereditary syphilis and also children who have had no opportunity of acquiring it. Its restricted geographical distribution is inconsistent with a syphilitic origin, and the absence of constitutional symptoms speaks against its syphilitic nature. The victims present no evidence of tuberculosis in other parts of the body, and the disease does not extend downward, the larynx remaining unaffected.

Most authors who have mentioned the affection, as Manson, Daniels, Maxwell, Rat and others, have regarded it as a sequel of yaws. Dr. Leys, after reviewing the published opinions and their reasons, comes to the conclusion that the disease is distinct from yaws and offers a problem in tropical medicine that will well repay the attempt to solve its etiology according to modern methods of investigation. The opinion that it is a sequel of yaws is based mainly on the coincidence of the two diseases, but it is easily seen that while yaws prevails wherever rhinopharyngitis is known, the same is also true of tuberculosis and syphilis, while rhinopharyngitis is limited to a few localities, yaws being prevalent over a much greater area.]

Pulmonic Second Sound in Health and Disease.

PHILADELPHIA, April 16, 1906.

To the Editor:—In THE JOURNAL, April 14, 1906, appears a clinical note on the pulmonic sound in health and disease. There is suggested the undoubted, and often overlooked fact, that an evidently accentuated pulmonic sound in certain normal persons can be rendered normal by exercise, as the result of an equal distribution of the blood volume of the body, so to speak. Dr. Hardy concluded: "If this be true, it would seem that too much stress has been laid on this sign as an early indication of pulmonary tuberculosis, thus giving an opportunity, at least, for misleading conclusions." It is needless to say that a constant and pathologic increase in the intensity of the pulmonic sound is a valuable aid in the diagnosis of early pulmonary lesions, indicating as it does an overtension in the pulmonary circulation, almost, if not always, due to mechanical causes (congestion, consolidation, etc.). This increase in intensity, however, must be constant enough and marked enough to be certainly pathologic, and just at this point enters the personal equation of experience and judgment that renders the pulmonic sign valuable to one observer, and a source of error to another. Certain medical men are better off, I am sure, without any teaching about the pulmonic sound, since ear and stethoscope fail to bring the proper result in the absence of a natural sense of discrimination.

The general rule may be laid down, none the less, that a truly pathologic increase in the intensity of the pulmonic sound will never disappear until its causal condition is removed; and that such an increase, when due to tuberculous infiltration or congestion, will remain constant in spite of exercise, and will, as a rule, become exaggerated thereby. Under such conditions there can be no approximation of the aortic and pulmonic systemic pressures short of a cure. This is equally true of mitral disease and every other pathologic process that tends to produce over tension in the pulmonic circulation.

ROBERT N. WILLSON.

Pauper Fees by Wealthy Corporations.

In THE JOURNAL, March 3, 1906, page 671, we referred to the absurdly low fees offered by the Maryland Casualty Company in their new schedule of fees. The subject came up for discussion at a meeting of the Jefferson County (Ky.) Medical Society, held March 27, 1906, at which Dr. Hugh R. Manning, Louisville, presented some letters from this company, and in discussing the matter said:

Much has been said and written of late about physicians' fees, especially the fees paid by various insurance companies for the examination of applicants for life insurance, and for first attention and services to "personal accident" and "employers' liability" insurance, all of which has been brought about by the action of practically all the companies in reducing the medical fees that were already so low as to be on a starvation ratio. . . . I maintain that no physician should make an examination of an applicant for life insurance for a fee less than $5, and that such examination should be made in a strictly honest and conscientious manner; whenever the policy to be issued the applicant is for a sum over $1,000, or whenever a microscopic examination of the urine is to be made, the fee should never be less than $10. Why, gentlemen, if you have a title company make an examination of the title of a piece of property you are about to purchase, that company will charge you a fee of $25 whenever the value of that property is $1,000 or less. Then is not the opinion of one of our profession as to whether a man is physically sound and a desirable risk for $1,000 of life insurance worth more than $2? If not, then it is not worth anything. The whole action of an insurance company must be based on the examination and report of the examiner, and the examiner should be paid for his expert knowledge or judgment in the matter. When you go to buy a horse you pay a veterinary $5 to look the animal over to ascertain whether he is sound, in which case you have $100 or $200 involved, and you think the money well spent; whereas, the insurance companies would have us make examination of their applicants for life insurance, requiring a great deal more technical training, where there is a thousand or several thousand dollars involved, and they offer us as remuneration for such services the miserable fee of $2. Just think the matter over. Aren't your services worth as much as a veterinary's? Isn't your time as valuable as that of a clerk's in a title company's office?

The remedy for these evils lies wholly in the united and concerted action of the profession. We will have to get together as lawyers have done, demand our rights—a reasonable compensation for the services we render—and we will secure them; but this end can not be secured without the united effort on the part of a majority of the profession. In other words, "The fault is not in our stars, but in ourselves, that we are underlings."

On receipt of the company's fee bill, which was published in the article above referred to, Dr. Manning wrote the company the following letter:

HAST BUILDING, Feb. 9, 1906.

Mr. Charles W. Maydwell, Manager Claim Division, the Maryland Casualty Company, Baltimore, Md.

Dear Sir:—I have to acknowledge the receipt of your communication of the 6th inst., inclosing new schedule of fees, effective March 1, 1906, and I regret the necessity of declining to accept such reduction in compensation as indicated therein.

In pursuing the course above indicated, of course, it is fully understood by me that my connection with your company terminates March 1, 1906, provided it is your determination to maintain such a schedule of fees, but I would like to be permitted to present to you some of my views as to why I do not consider it wise on your part and the part of the company to enforce it. No doubt you will find without great difficulty licensed and so-called doctors who will be glad of the opportunity of serving you for the miserable fees allowed by the schedule, and even then you will be paying them more than double what their services are worth; but no professional man of any intelligence, ability or reputation will serve your company or any individual for such remuneration as is offered by this new schedule. As to the increase in the volume of business and the "wedge by which you secure an entree into a new family" is concerned, it is a dream, a delusion and a snare; it should rather be stated that the increase in volume of "work" and consequent growth of "pauper practice" in many instances would make a doctor busy to serve you for less than a third of the fees paid by individuals of poor or moderate financial condition. Families into which it is desirable to have an entree always secure the services of higher-classed men than such of those who would be willing to accept such fees as indicated in your new schedule. If there is any particular department in your company where you need and demand, more than elsewhere, brains, intelligence, judgment and ability, it is in your field surgeon, for by his conservative and judicious action he saves you a hundred times the cost of his services, and incidentally prevents you many lawsuits and complications. You will pardon the personal allusion, but in the short time that I have been connected with the company I have saved the company many, many times the fees I have received. In one instance that I recall a doctor (who is of the class and kind whose services could doubtless be secured at the rate given in the new schedule) treated one of your policyholders for six weeks on account of an injury to the hand, without discovering the fact that the patient had a broken thumb. This little oversight on the part of the doctor, of course, had the effect of giving the policyholder double time for his total disability, to say the least. I merely recite this case to illustrate how it is possible that a cheap surgeon may be a very dear one. What would you think of a surgeon who would send you a bill of $2 for amputating your finger or a number of your fingers, furnishing his own anesthetic (Squibb's ether at $1 for eight ounces), his own dressings (at a cost of no less than from 25 to 50 cents), his own instruments, his time, his horse and buggy or automobile—all for the sum of $2? Further more, this was an emergency call, so must be answered at once regardless of office hours and everything else, and would require not less than from an hour to an hour and a half under the best

of conditions. I can imagine you would think, if you did not say, that that doctor had better get a job carrying a hod, for which he could get 50 cents an hour for eight hours every day and make a great deal more out of it. Likewise, I am certain that you would conclude that he can not have much more ability than the hod-carrier, and mentally resolve that in the future should you have to have anything of the kind done you would employ some one else to do it. Think of a surgeon in a city the size of Louisville performing an amputation at the hip-joint for $25. Compared with a hip-joint amputation, or even excision of the hip-joint, an abdominal section is a picnic, child's play, and the mortality of the former as compared with the latter is as one hundred is to one. A man would be nothing short of a fool who would take all this hazard, do all the work and neglect his private practice, which might pay him ten times the amount for the insignificant fee of $25; and I for one do not care for it.

Thanking you for past courtesies and kindnesses, and assuring you that I shall be glad to serve you at any time in the future at anything like a reasonable fee, or a minimum fee that may be collected from an individual, and hoping that you may be able to see my viewpoint, I am, Yours truly,

HUGH R. MANNING.

Following are the company's reply and Dr. Manning's answer:

BALTIMORE, Feb. 26, 1906.

Mr. Hugh R. Manning, Louisville, Ky.

Dear Sir:—You favor of the 9th inst., respecting our new schedule of fees, was received during my absence from the city, and a reply thereto has, for this reason, been delayed.

We have, as you suggest, found very many doctors willing to sign this schedule, and we know from experience that they are men fully qualified to perform the services required of them.

In view of the fact that such a large majority of our surgeons have agreed to be governed by the schedule in submitting their bills for services, I feel justified in asking you to give further consideration to the matter and advise us if you can not find it possible to give the schedule a fair trial, with the understanding that if it does not work out to your satisfaction the matter can be taken up for further discussion. Yours very truly,

CHARLES W. MAYDWELL,
Manager Claim Division.

HAST BUILDING, March 5, 1906.

Mr. Charles W. Maydwell, Manager Claim Division, Maryland Casualty Company, Baltimore, Md.

Dear Sir:—I thank you for the courtesy of your letter of the 26th ult., asking me to give further consideration to the matter of your new schedule of fees, with the understanding that should it not prove satisfactory after a fair trial to take up the matter for further discussion.

In reply I have to state that my action in declining to accept the new schedule of fees, under date of Feb. 9, 1906, was not taken without due consideration, and I still adhere to the views therein expressed, viz., that the fees allowed are inadequate and not acceptable to me. That there are others in the profession that share my opinion in this matter is evidenced by the clipping I have cut from THE JOURNAL of the American Medical Association, issue of March 3, 1906, herewith inclosed, which purports to have been written by Dr. C. H. Emery, of Bedford, Ind., a small town of about one-tenth the size of Louisville, Ky., and where the cost of living is much less. Doubtless you will hear from others along the same line, and I expect that you will find it a very unpopular measure.

There is a way in which a doctor may make a reasonable fee in all cases coming for first detention, provided he secures the "after-service." He can increase his charges against the patient, or make more visits than are warranted by the condition, or tell the patient that the insurance company pays only one-third fees and that he must make good for the balance—in short, by many dishonest and disreputable means, too numerous to mention; but I do not care to join the ranks of those who do this kind of work, and I imagine that it will, sooner or later, have a telling effect in the insurance field. A man who will practice deception to his patient will have no scruples in doing the same way by a corporation, and is a very unsafe man to deal with in any way. There is no field, unless it may be the insurance field, in which greater deception can be carried on without fear of detection than the practice of medicine; there is no professional field more full of shysters and charlatans, maintaining a degree of respectability unwarranted by their conduct. No respectable or self-respecting man can afford to work for the fees offered by the new schedule, unless he desires to put the "pauper Maryland Casualty Company" on his charity list and do their work for "glory." You can feel reasonably sure that the doctor has to have a living somehow, and you will have more "bogus" claims that will go through without a question, doubtless many others for which suit will be entered to enforce collection, and I verily believe that you will find small surgeon fees more expensive. Very truly yours,

HUGH R. MANNING.

Association News

Lodging-Houses and Boarding-Houses.

In the announcement in THE JOURNAL, April 7, it was stated that, in a future issue, a list of the boarding-houses and lodging-houses would be given; and the Committee on Hotels and Transportation volunteered to secure accommodations for all members who should request such service. It has been made clear, however, that great confusion and much annoyance are bound to result if any considerable proportion of those who attend the meeting negotiate directly with the proprietors of these houses while others are dealing with the same people through the committee. It has seemed best, therefore, to withdraw that part of the announcement and to simplify the work of placing members by having all applications and engagements pass through the hands of the committee. Members wishing the assistance of the committee will please specify the number of rooms desired, whether or not board is also desired, and the rate beyond which the committee shall make no engagements.

The committee advises early application, since, naturally, the most desirable accommodations in each class will be the first to be given out, on the principle of first come, best served. Members who delay action until arrival will be given the best that remains, but they should bear in mind the possibility of delay and disappointment.

The committee will spare no pains to place each applicant comfortably and satisfactorily, and will give to each its personal attention. CHARLES HARRINGTON, Chairman,
366 Commonwealth Avenue, Boston.

Excursion to Nova Scotia.

As on of the attractions following the Boston session a nine days' tour to New Brunswick, Nova Scotia, Maine and New Hampshire is being arranged. The party will visit a day or two in St. John, N. B., Digby, N. S., Bar Harbor, Me., and Portsmouth, N. H., and touch at the ports of Portland and Eastport, Me., and Lubec, N. B. A booklet fully describing the tour may be obtained from Dr. E. R. Campbell, Bellows Falls, Vt. As it will probably be necessary to limit the number of the party those desiring to go should write promptly.

Marriages

LESTER CURTIS, M.D., to Mrs. Mary B. Hibbard, both of Chicago, April 11.

FREDERICK H. LITTLE, M.D., to Miss Amelia Timm, both of Muscatine, Iowa, April 5.

S. D. LARGE, M.D., Hopkins, Mo., to Miss Sadie Musser, in St. Joseph, Mo., March 31.

CHARLES A. WORTHEN, M.D., to Miss Agnes L. Fitzgerald, both of Lynn, Mass., April 6.

JOHN B. SIMMS, M.D., Center, Texas, to Miss Julia A. Jordan of Neuville, Texas, April 8.

E. B. VAN ARSDEL, M.D., to Miss Marion Louise Farmer, both of Alamagordo, N. M., April 7.

W. HARRIMAN JONES, M.D., to Mrs. Ida Belle Musselman, both of Long Beach, Cal., March 29.

MAURICE OSTHEIMER, M.D., of Philadelphia, to Miss Martha S. McIlvaine of Downingtown, Pa., April 18.

WILLIAM HARRISON KENNEDY, M.D., Shelbyville, Ind., to Miss Effie Eleanor Burnham of Chicago, April 14.

SAMUEL MISLEY TRAVER, M.D., Steelton, Pa., to Miss Helen Elizabeth Harrison of Germantown, Pa., April 18.

NATHANIEL ORR, M.D., Charlotte, N. C., to Miss Susie Hales of Fredericksburg, Va., at Houston, Va., March 31.

GEORGE MONTGOMERY TUTTLE, M.D., New York City, to Mrs. Mabel Holden Kirkbride of St. Louis, in Florence, Italy, April 4.

Deaths

John Campbell, M.D. Albany (N. Y.) Medical College; a member of the medical department of the United States Army from 1847, when he joined as lieutenant, until 1886, when he retired as colonel, receiving in April, 1904, the rank of brigadier general retired; lieutenant-colonel and medical inspector, U. S. V. during the Civil War; a veteran of the Mexican War and of the various Indian campaigns, died at his home in Cold Spring, N. Y., Dec. 25, 1905, aged 84.

Edgar Allen Jones, M.D. Birmingham (Ala.) Medical College, 1898; professor of pathology in his alma mater; pathologist and bacteriologist to Hillman Hospital, Birmingham; secretary of the Jefferson County Medical Society, and a member of the Medical Association of the State of Alabama, died at the home of his uncle in Woodlawn, Ala., April 10, from tuberculosis, after an illness of more than two years, aged 29.

Jacob W. B. Wellcome, M.D. St. Louis College of Physicians and Surgeons, 1883; a pioneer of the Minnesota Valley; a member of the American Medical Association, Minnesota State Medical Society and Brown County Medical Society, died at his home in Sleepy Eye, April 8, after an illness of nearly a year, from malignant disease of the neck, aged 84.

Edward A. Crane, M.D. Harvard University Medical School, Boston, one of the organizers of the United States Sanitary Commission during the Civil War; a sanitary expert; for many years a resident of Paris, France, and editor of the *American Register*, died suddenly at his home in Paris, February 25, aged 73.

Archibell C. M. Moir, M.D. Tufts College Medical School, Boston, 1896; some-time house physician in the Cambridge Hospital; a member of the medical staff of Newton Hospital, and a member of the Newton Medical Improvement Society, died suddenly, March 29, at his home in Newton Highlands, Mass.

John Dickenson Curran, M.D. College of Physicians and Surgeons in the City of New York, 1901, of Binghamton, N. Y., for four years a member of the staff of the State Hospital in that city, died from typhoid fever at St. Augustine, Fla., April 7, after an illness of five weeks, aged 32.

Sanford Bert McClure, M.D. Medical College of Ohio, Cincinnati, for three years a contract surgeon in the United States Army, on duty in the Philippine Islands, died at his home in Walnut Hills, Cincinnati, April 6, from typhoid fever, after an illness of three months, aged 33.

Harry McKennan, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1889, secretary and treasurer of the Æsculapian Society of the Wabash Valley, and a member of the Illinois State Medical Society, died at his home in Paris, Ill., March 30.

T. Park Lewis, M.D. New York Homeopathic Medical College and Hospital, New York City, 1899, formerly of Waterville, N. Y., died recently while on his way home from Tucson, Ariz., where he had been living for two years on account of his health.

Andrew B. Stevens, M.D. University of Buffalo, Medical Department, 1873; the oldest practitioner of Watertown, N. Y.; a veteran of the Civil War, died at his home in Watertown, April 7, from heart disease, after a short illness, aged 66.

William W. Cozart, M.D. Medical College of the State of South Carolina, Charleston, 1866, a prominent practitioner of Granville County, N. C., died suddenly at his home, near Dutchville, N. C., April 7, from heart disease, aged 72.

Edward H. Kellers, M.D. Medical College of the State of South Carolina, Charleston, 1858, surgeon in the Confederate service during the Civil War, died suddenly from angina pectoris, at his house in Charleston, April 5, aged 70.

Thomas Beaver Wintersteen, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1899, formerly president of the Montour County Medical Society, died at his home in Danville, Pa., April 5, aged 33.

Andrew Jackson Smoot, M.D. University of Maryland School of Medicine, Baltimore, 1852, died from heart disease, April 11, at his home, Society Hill, Cooksey, Charles County, Md., after a lingering illness, aged 77.

Edgar A. Aikman, M.D. Rush Medical College, Chicago, 1891, a member of the American Medical Association and one of the best known physicians of Vermilion County, Ind., died at his home in Clinton, April 11.

Emmett Roberts, M.D. Geneva (N. Y.) Medical College, 1850, for many years a prominent practitioner of Berrien County, Mich., died at his home in St. Joseph, April 9, after an illness of one year.

Samuel B. Smale, M.D. Toronto University Medical Faculty, 1888, one of the oldest practitioners of Huron County, Ont., died at his home in Wroxeter, March 26, from pneumonia, after a short illness.

Hugh Cary, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1884, of Tenstrike, Minn., died in St. Anthony's Hospital, Bemidji, Minn., from nephritis, February 7.

Walter Alonzo Van Voorhis, M.D. Western Pennsylvania Medical College, Pittsburg, Pa., 1890, died at his home in Philadelphia, April 4, from the effects of a self inflicted gunshot wound.

George G. Palmer, M.D. Medical College of the State of South Carolina, Charleston, 1876, died at his home in Cartersville, S. C., from tuberculosis, after a prolonged illness, April 2, aged 52.

John S. Burridge, M.D. (Years of Practice, Illinois), formerly of Erie, Ill., died at the home of his daughter in Dyer, Tenn., February 18, from jaundice, after an illness of three weeks, aged 72.

Francis Elmer Fuller, M.D. College of Physicians and Surgeons of Chicago, 1902, died at his home in Adrian, Mich., January 25, from pneumonia, after an illness of four weeks, aged 43.

Samuel E. Winnemore, M.D. New York University, Medical Department, New York City, 1856, a Confederate veteran, died at his home in Benton, Ala., March 28, from heart disease, aged 72.

John Wesley Moak, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1902, died at his home in McGregor, Ont., April 17, from nephritis, after an illness of six weeks, aged 31.

Frank B. Nailor, M.D. Transylvania University, Medical Department, Lexington, Ky., died at his home near Vicksburg, Miss., January 1, from cerebral hemorrhage, aged 69.

Jarvis U. Woods, M.D. Hahnemann Medical College, Philadelphia, 1868, died at his home in New Haven, Conn., April 1, from cerebral hemorrhage, after a short illness, aged 63.

John Hamilton Hissey, M.D. College of Physicians and Surgeons, Baltimore, 1878, died at his home, near Honesville, Md., March 29, after a long illness, aged 53.

Morris Rogers, M.D. University of Iowa, Medical Department, Iowa City, 1869, died at St. Joseph's Hospital, Deadwood, S. D., Aug. 19, 1905, aged 67.

W. H. M. Kyle, M.D. Trinity Medical College, Toronto, 1900, of Grosse Point, Mich., died at his father's home in Palmerston, Ont., April 7, after a short illness.

P. A. Letourneau, M.D. Chicago Medical College, 1881, died at his home in Frenchtown, Mont., April 8, after a long illness, from pulmonary abscess.

R. A. Hutcheson, M.D. Medical College of Georgia, Augusta, 1883, died at his home in Toccoa, Ga., from a self-inflicted gunshot wound, February 7.

J. B. Henion, M.D. Eclectic Medical College of the City of New York, 1883, died suddenly at the Quincy House, Boston, March 10, aged 67.

B. H. Leblanc, M.D. Laval University, Medical Department, Quebec, 1885, of Point St. Charles, Que., dropped dead in Montreal, April 3.

G. W. Kelly, M.D. (Years of Practice, West Virginia), died at his home in Glendale, W. Va., April 6, after a long illness, aged 79.

George H. Alway, M.D. Detroit College of Medicine, 1894, died recently at his home in Detroit.

William McIntyre, M.D. (Examination), Ohio, died at his home in Warrensburg, Ohio, April 7, aged 82.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

A SOUND OF WORDS.

A subscriber writes: "The other day, a bright young girl, who had lived in the country and knew something about the barnyard, was reading an article for me in which the word cachectic occurred several times. She had some trouble with its pronunciation. About the fourth time she met it she began, 'Cache-e, cachee-, cachectic,' and then in desperation looked up with the remark, 'Every time I say that word I feel like a hen that had just laid an egg.'"

SYRUP OF LACTUCARIUM.

NEWARK, N. J., April 8, 1906.

To the Editor:—1. Can you give me the formula of Aubergier's Syrup Lactucarii? A druggist dispensed this instead of the U. S. P. Syrup Lactucarii, claiming that it was no more potent but of better flavor. 2. In the National Standard Dispensatory the editors in discussing Antipyrin say it is incompatible with Natrium salicylas. I have seen these two drugs combined several times, and have always seen a clear white solution result. Will you explain in what way they are incompatible? J. L.

ANSWER.—1. Aubergier's Syrup of Lactucarium is a proprietary remedy, its exact composition, of course, is not known. It is generally believed to be a syrup flavored with orange flower water and containing very little of the active constituents of lactucarium. The following formula appears in Hager's "Pharmaceutische Praxis," vol. 1, p. 272

French extract of lactucarium	1|5
Hot water	500|
Sugar	1000|
Orange flower water	50|
Citric acid	1|5

The extract and 50 gm. sugar are dissolved in the hot water and the solution filtered. In the filtrate, after clarification with egg albumin, if needed, the remaining sugar is dissolved and then the orange-flower water and citric acid are added. The French extract of lactucarium referred to in the formula is not identical or even similar to the official lactucarium. 2. When antipyrin and sodium salicylate are triturated together a pasty mass results and such a mixture, therefore, can not be dispensed in powder form. A solution of antipyrin and sodium salicylate remains clear indefinitely and apparently no change occurs.

THE DOCTOR'S THREE FACES.

CLEVELAND, OHIO, April 9, 1906.

To the Editor:—The epigram quoted in your issue of March 31, 1906, page 979, seems to have been a favorite one among the old doctors. The following lines may be of interest to some of your readers. They may be found in a book entitled: "A Treatise of One Hundred and thirteene diseases of the Eyes and Eye-Liddes," by Richard Banister, Mr. in Chyrurgery, Oculift, and Practitioner in Phyficke. Imprinted in London, 1622.

"*The Surgeon divided into foure parts, or the Surgeon's Comment.*"

1. A Surgeon's like a God whom they adore:
   When death about the ficke man's bed doth fore,
   Then hath he great refpect, and high regard;
   Fed with the fmoaky promife of reward.

2. But as the Patient doth begin to mend,
   So doth the Surgeons God-head ftraighwayes ends
   Yet fush attendance on him ftill is giuen,
   As if he were an Angel comne from Heaven.

3. When health and ftrengh the Patients doth lofpire,
   To fleep, eate, walke, and fit up by the fire:
   Then ftrait the Surgeons ftate Angelicall,
   In their refpeft unto a man doth fall.

4. Laft, when the ficke or fore are heal'd agaone.
   And that the Surgeon feekes reward for's paine:
   Hee's neither counted God, nor Angel then,
   Nor is he intertained as a man.
   But (through ingratitude) that helleth euill,
   They bid the Surgeon, as welcome as the deuill.

The following lines, which I have seen credited—wrongly, I believe, to Pope, were doubtless inspired by the same sentiment:

"God and the doctor we alike adore,
But only when in danger, not before;
The danger o'er, both are alike requited,
God is forgotten, and the doctor slighted."

Pope who suffered from ill health during his entire life, always expressed the highest regard for the medical profession, and one time said, "They are in general the most amiable companions and the best friends, as well as the most learned men I know."

ALBERT REFUS BAKER, M.D.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending April 14, 1906:

Truby, W. F., asst.-surgeon, granted 30 days' leave of absence.

Moncrief, Wm. H., asst.-surgeon, granted 7 days' leave of absence.

Kneedler, Wm. L., surgeon, reported for treatment at Army General Hospital, Presidio of San Francisco, Cal.

Harvey, P. F., asst.-surgeon-general., left Chicago, Ill., on 21 days' leave of absence.

Childester, W. C., asst.-surgeon, reports on 30 days' leave of absence from duty in Philippines Division.

Gandy, Charles M., surgeon, relieved from duty at Fort Wayne, Mich., May 10, 1906, and ordered to surgeon general's office for temporary duty, and on completion of this duty will proceed to West Point, N. Y., as heretofore ordered.

Lewis, Wm. F., asst.-surgeon, reports in temporary charge of chief surgeon's office, Department of the Lakes, Chicago, Ill., in addition to his present duties.

Hallock, H. M., surgeon, sick leave further extended 30 days.

Richard, Charles, surgeon, granted 15 days' leave of absence, to take effect on the completion of his duties at Lisbon, Portugal.

Stone, John H., asst.-surgeon, granted 5 days' leave of absence, with permission to go beyond sea.

Usher, F. M. C., asst.-surgeon, granted 3 months' leave of absence, to take effect about May 1, 1906.

Banister, John M., deputy surgeon-general, promoted to the rank of lieutenant colonel, to rank from March 29, 1906.

Stark, Alexander N., surgeon, promoted to the rank of major, to rank from March 29, 1906.

Lynch, Charles, surgeon, promoted to the rank of major, to rank from April 2, 1906.

Truby, A. E., asst.-surgeon, granted 21 days' leave of absence about April 26, 1906.

Carswell, R. L., asst.-surgeon, leave of absence extended 30 days.

Blanchard, R. M., asst.-surgeon, relieved from duty in Philippines Division and ordered to proceed to and take station at Camp McKinley, Honolulu, Hawaii Territory.

Smart, William, asst.-surgeon, granted two months' leave of absence.

The following named assistant surgeons will report in person, on the dates specified, to Major William H. Arthur, surgeon, president of the examining board at the Army Medical Museum Building, Washington, D. C., appointed by Paragraph 7, Special Orders 219, War Department, Sept. 21, 1905, for examination to determine their fitness for advancement: April 24, 1906: Koerper, Conrad E., DeLaney, M. A., Halloran, Paul S., first lieutenants. May 7, 1906: Whitmore, Eugene R., Smart, Robert, first lieutenants. May 8, 1906: Buck, Carroll D., Nelson, Kent, first lieutenants. May 9, 1906, Allen, John H., Bevans, James L., first lieutenants. May 10, 1906: Ekwurzel, Geo. M., Whitcomb, Clement C., first lieutenants. May 11, 1906: Reno, William W., Roberts, William, first lieutenants. May 12, 1906: Sweazey, Verge E., Bloomburgh, Horace D., first lieutenants.

The following-named assistant-surgeons will report in person to Lieutenant-Colonel George H. Torney, deputy surgeon-general, president of the examining board at the General Hospital, Presidio of San Francisco, Cal., appointed by Paragraph 9, Special Orders No. 54, War Department, Oct. 17, 1906, at such time after April 30, 1906, as may be designated by him for examination to determine their fitness for advancement: Brownlee, Charles Y., Murtagh, John A., Patterson, Robert U., O'Connor, R. P., Heard, George P., Noble, Robert E., Brooke, Roger, Jr., Devereux, John R., Brechemin, Louis, Jr., Krebs, Lloyd Le R., Woodall, William P., first lieutenants.

Brown, Ire C., contract surgeon, left Fort Niobrara, Neb., with troops for Fort Washakie, Wyo.

Long, Stephen M., contract surgeon, order for Philippine service revoked; leave of absence extended two months.

McCallum, Francis M., contract surgeon, granted an extension of one month to his leave of absence.

Newton, Ralph W., contract surgeon, recently arrived at San Francisco, Cal., from Philippine service, ordered to temporary duty in the Department of California.

Adair, George F., contract surgeon, ordered from Fort Terry, N. Y., to Madison Barracks, N. Y., for temporary duty.

Purnell, Julius M., contract surgeon, relieved at Fort McDowell, Cal., and ordered to duty at Presidio of Monterey, Cal.

Marshall, John S., examining and supervising dental surgeon, returned to the Army General Hospital, Presidio of San Francisco, Cal., from temporary duty at Honolulu, H. T.

Stone, Frank P., dental surgeon, left Army General Hospital, Presidio of San Francisco, Cal., for duty at Fort Sam Houston, Texas.

Ware, William H., dental surgeon, left Fort Logan, Colo., and arrived at Fort Wingate, New Mexico.

Baker, Charles L., contract surgeon, granted leave of absence for three months.

Dillon, G. Parker, contract surgeon, relieved from further duty at Fort McDowell, Cal., and from treatment at Army and Navy General Hospital, Hot Springs, Ark., and ordered to duty at Fort Bliss, Texas.

Koyle, Fred T., contract surgeon, relieved from duty at Fort Bliss, Texas, and ordered to duty at Fort McDowell, Cal.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 14, 1906:

Warner, R. A., asst.-surgeon, ordered to the Naval Academy, April 10.

Schaller, W. F., asst.-surgeon, appointed assistant surgeon, with rank of lieutenant, junior grade, from March 21, 1906.

Kaufman, J. B., A. H. Robnett, M. H. Ames, C. K. Winn, W. S. Kuder, asst.-surgeons, appointed assistant surgeons, with rank of lieutenant, junior grade, from March 24, 1906.

Bucher, W. H., surgeon, ordered to Washington, D. C., April 14, for duty in attendance on course of instruction at the Naval Medical School.

Dorsey, B. H., asst.-surgeon, detached from duty with naval recruiting party No. 4, and ordered home to wait orders.

Winn, C. K., asst.-surgeon, ordered to duty with naval recruiting party No. 4, at Des Moines, Iowa, April 30.

Kuder, W. S., asst.-surgeon, ordered to the Naval Hospital, Boston, Mass.

Kaufman, J. B., and Ames, M. H., asst.-surgeons, ordered to the Naval Hospital, Norfolk, Va.

Robnett, A. H., asst.-surgeon, ordered to the Naval Hospital, New York, N. Y.

Farenholt, A., surgeon, detached from the *Oregon*, and ordered home to wait orders.

DeBruler, J. P., asst.-surgeon, detached from the *Oregon* and ordered home to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending April 11, 1906:

Mead, F. W., surgeon, granted leave of absence for one day, April 16, 1906.

Guiteras, G. M., surgeon, granted leave of absence for two days, from April 16, 1906.

Wertenbaker, C. P., surgeon, relieved from duty at St. John, N. B., and directed to proceed to Quebec, Canada, with the commissioner of immigration.

Young, G. B., P. A. surgeon, granted leave of absence for three days from April 6, 1906.

Stimpson, W. G., P. A. surgeon, granted leave of absence for three days from April 11, 1906.

Blue, Rupert, P. A. surgeon, directed to report to the director of the Hygienic Laboratory, Washington, D. C., for temporary duty.

Blue, Rupert, P. A. surgeon, directed to proceed to Reedy Island Quarantine Station for temporary duty, on completion of which to rejoin station in Washington, D. C.

Anderson, J. F., P. A. surgeon, directed to proceed to Reedy Island Quarantine Station for special temporary duty, on completion of which to rejoin station in Washington, D. C.

White, M. J., P. A. surgeon, granted two months' leave of absence from July 15, 1906.

Lloyd, B. J., P. A. surgeon, granted leave of absence for fifteen days, from May 1, 1906.

McCoy, G. W., P. A. surgeon, granted leave of absence for one month, from April 8, 1906.

Frost, W. H., asst.-surgeon, temporarily relieved from duty at Baltimore, and directed to proceed to Ellis Island, New York, for temporary duty.

Bailey, G. W., acting asst.-surgeon, granted leave of absence for two days, from April 19, 1906.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for twenty-one days from April 13, 1906.

Griffitts, T. B. D., acting asst.-surgeon, granted leave of absence for thirty days from May 1, 1906.

Achenbach, John, pharmacist, granted leave of absence for thirty days, from April 3, 1906.

McKay, Malcolm, pharmacist, granted leave of absence for one day.

Scott, E. B., pharmacist, granted leave of absence for four days, from March 31, 1906, under Paragraph 210 of the Regulations.

Ryder, L. W., pharmacist, granted leave of absence for three days, from April 5, 1906.

Van Ness, Jr., Geo. L., pharmacist, granted leave of absence for thirty days, from April 25, 1906.

BOARD CONVENED.

A board of officers was convened to meet at San Francisco, on April 13, 1906, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon H. W. Sawtelle, chairman; P. A. Surgeon J. M. Holt, recorder.

CASUALTY.

Acting Assistant Surgeon N. D. Richardson, died at San Francisco Quarantine Station, April 9, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended April 13, 1906:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, March 24-31, 1 case.
California: Los Angeles, March 24-31, 15 cases; San Francisco, March 17-31, 27 cases, 4 deaths.
District of Columbia: Washington, March 31-April 7, 1 case.
Florida: Jacksonville, March 31-April 7, 1 case.
Georgia: Augusta, March 26-April 2, 4 cases.
Kentucky: Covington, March 31-April 7, 2 cases.
Louisiana: New Orleans, March 31-April 7, 5 cases.
Maryland: Baltimore, March 31-April 7, 3 cases.
Michigan: Detroit, March 24-April 6, 2 cases; Grand Rapids, March 31-April 7, 1 case.
Mississippi: Natchez, March 31-April 7, 1 case (on vessel).
Missouri: St. Louis, March 31-April 7, 2 cases.
New Jersey: Hudson County, April 1-8, 4 cases.
New York: Buffalo, March 24-31, 1 case; New York, March 31-April 7, 2 cases.
North Carolina: Greensboro, March 31-April 7, 3 cases.
Ohio: Cincinnati, March 30-April 6, 3 cases; Cleveland, 1 case.
Tennessee: Knoxville, March 31-April 7, 1 case.
Utah: Ogden, March 1-31, 3 cases.
West Virginia: Wheeling, March 30-April 6, 2 cases.
Wisconsin: Appleton, March 31-April 7, 4 cases.

SMALLPOX—FOREIGN.

Africa: Capetown, Feb. 24-March 3, 4 cases.
Austria: Gallicia (province), Feb. 18-March 3, 4 cases; Voralberg (district), 17 cases.
Canada: Seven Islands, March 21, present; Winnipeg, March 24-31, 1 case.
Chile: Iquique, March 3-10, present.
China: Hongkong, Feb. 10-24, 24 cases, 17 deaths.
Ecuador: Guayaquil, March 4-22, 13 cases.
Egypt: General, Dec. 17-31, 77 cases, 14 deaths.
France: Paris, March 17-24, 6 cases, 1 death.
Germany: Kehl, Jan. 1-31, 1 death.
Gibraltar: March 18-25, 4 cases.
Great Britain: London, March 17-24, 5 cases.
Greece: Patras, Feb. 27-March 6, 3 cases, 2 deaths.
India: Bombay, March 6-13, 8 deaths; Calcutta, Feb. 24-March 3, 189 deaths; Karachi, Feb. 25-March 11, 53 cases, 20 deaths; Madras: March 3-9, 48 deaths; Rangoon, Feb. 24-March 3, 83 deaths.
Italy: General, March 15-22, 35 cases.
The Netherlands: Rotterdam, March 24-31, 3 cases.
Russia: Moscow, March 3-17, 19 cases; Odessa, May 17-24, 6 cases.
Spain: Tarragona, March 17-24, 2 deaths.
Turkey: Constantinople, March 11-18, 2 deaths.

YELLOW FEVER—FOREIGN.

Ecuador: Guayaquil, March 4-22, 36 deaths.
Mexico: Merida, April 10, 1 case; Salina Cruz, March 18-24, 1 case (imported); Tehuantepec, March 18-24, 1 case (imported); Vera Cruz, April 7, 1 death (imported).

CHOLERA—FOREIGN.

India: Bombay, March 6-13, 2 deaths; Calcutta, Feb. 24-March 50 deaths; Rangoon, 2 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Feb. 17-24, 17 cases, 16 deaths.
India: General, Feb. 24-March 3, 3,425 cases, 2,739 deaths; Bombay, March 6-13, 411 deaths; Calcutta, Feb. 24-March 3, 59 deaths; Karachi, Feb. 25-March 11, 67 cases, 58 deaths; Madras, March 3-9, 1 deaths; Rangoon, Feb. 24-March 3, 30 deaths.
Peru: Callao, Feb. 24-March 5, 1 case; Lima, 1 case, 1 death; Mollendo, 1 case; Paita, 2 cases, 2 deaths; Trujillo, 13 cases, 6 deaths.

Book Notices

THE AUTOMOBILE. A Practical Treatise on the Construction of Modern Motor Cars, Steam, Petrol, Electric and Petrol-Electric. Based on Lavergne's "L'Automobile sur Route." Edited by P. N. Hasluck. Special Edition, Enlarged, with 804 Illustrations, 8 Full-page Plates and an Addendum. Vols. 1 and 11. Cloth. Pp. 451-864. Price, $7.00 net. Chicago: W. T. Keener & Co.

If there is one thing more than another brought out in the automobile articles in this number of THE JOURNAL, it is that the physician who wishes to save himself from worry and expense should learn the details of the construction of his automobile. Some of this information may be had from books and some can only be had from actual, often painful, experience. Frequently it will be the cheapest and most satisfactory way to have a short course in instruction from a competent chauffeur or automobile machinist. The novice, however, should preface any such instruction by an understanding of the general principles of auto motors, etc., which he may gain from some good book on the subject. The work before us, in two handsome volumes, is well called a compendium of information, and it discusses every feature of the automobile with the details of construction, operation and repair. The first chapter is an interesting history of the evolution of the automobile, and then are taken up the various forms of motive power, steam, gasoline and electricity. The second volume takes up the details of wheels, tires, springs, frames, brakes, lubrications and then discusses the chief automobiles of England and the continent, as well as many American cars. The information about motors and motive power is of universal application and can be recommended for those who wish instruction. The illustrations are particularly valuable, being abundant and with full explanations, and will be much appreciated by the student.

SELF-PROPELLED VEHICLES. A Practical Treatise on the Theory, Construction, Operation, Care and Management of all Forms of Automobiles. By J. E. Homans, A.M., with Upward of 500 Illustrations and Diagrams, Giving the Essential Details of Construction and Many Important Points on the Successful Operation of the Various Types of Motor Carriages Driven by Steam, Gasoline and Electricity. Cloth. Pp. 652. Price, $2.00. New York: Theo. Audel & Co. 1905-1906.

This readable book discusses the entire subject from history through all the methods of application of power to the details of accessories. The illustrations are very good, clear and fully described. The subdivisions of the matter render reference from page to page easy. The book is written "for the practical information of such persons as have neither the time nor inclination to delve deeper into the subtleties of mechanics than the construction and the management of their machines require," and we can recommend it to anyone interested in the subject.

ORGANOTHERAPY, OR TREATMENT BY MEANS OF PREPARATIONS OF VARIOUS ORGANS. By H. B. Shaw, M.D., F.R.C.P. Illustrated. Cloth. Pp. 256. Price, $1.75 net. Chicago: W. T. Keener, 1905.

Almost one-third of Dr. Shaw's book is concerned with the thyroid and parathyroid glands. Other sections deal with the suprarenal glands, the alimentary tract, including the pancreas and liver, and genitourinary organs. A final section under the heading of "Other Organs and Tissues" considers the pituitary body, thymus, spleen, hemal lymphatic lymph glands, lymphatic glands, marrow, muscle, nerve tissue and placenta. A most commendable feature of the treatise and a most rational one is the fact that, in relation to each organ, the anatomy, physiology, chemistry and pathology are considered before the reader is introduced to the question of organotherapy. This is done without the too laborious citation of authorities, yet it could not be said that the author has omitted important references. Obscure questions in anatomy, etc., are dismissed satisfactorily with statements of the best opinions of the present time.

The same spirit of fairness and broad treatment is to be seen in the chapters dealing with organotherapy, which has been treated with sufficient thoroughness, considering the degree of chaos which manifestly exists in this field. In instances in which serum therapy, with specific cytotoxic serums, has been practiced and advocated, the results, which are largely negative, inconclusive and often misinterpreted, are given by the author. A reading of the book impresses one strongly with the great need of more physiologic knowledge, without which organotherapy, with one or two luminous exceptions, can be put to nothing more than empirical use.

Chemistry of the Proteids.. By G. Mann, M.D., B.Sc., University Demonstrator of Physiology, Oxford. Based on Prof. Otto Cohnheim's "Chemie der Eiweisskörper." Cloth. Pp. 606. Price, $3.25. New York: The MacMillan Co. 1906.

Recent Advances in Physiology and Bio-Chemistry. Edited by Leonard Hill, M.B., F.R.S. Contributors, B. Moore, M.A., D.Sc., J. J. R. Macleod, M.B., L. Hill, M.B., F.R.S., M. S. Pembrey, M.A., M.D., and A. P. Beddard, M.A., M.D., with Diagrams. Cloth, Pp. 740. Price, $5.00 net. New York: Longmans, Green & Co. 1906.

The appearance of these two books in the market is a striking evidence of the spirit of the times, and of the rapidly increasing interest and participation in the progress of biologic investigation in the English-speaking countries. They will be welcomed not only by students of the biologic sciences, but also by those practicing physicians who desire to keep abreast of the advances that are being made in the chemistry of living processes both in health and disease, and from which we must expect most of the progress that will be made along many lines of medical research for years to come.

Mann's "Chemistry of the Proteids" originated in a plan of the author to present to English-speaking students a translation of the standard work on the chemistry of the proteids, Cohnheim's "Chemie der Eiweisskörper"; but, being extremely full of original and independent ideas (as we have learned from his work on "Physiological Histology") Mann found himself unable to adhere to the production of a mere literal translation of another's work. As a result we have a book based on the work of Cohnheim, brought up to date from the second German edition, and so amplified that instead of the 308 pages of Cohnheim we have 584 pages of text in Mann's book. The increase in size represents partly the natural growth of the subject matter, partly an expansion of the consideration of certain topics that seemed of particular importance to the author, and partly the incorporation of his original ideas and their consideration. Thus we find much emphasis laid on the relation of the inorganic salts to the proteid molecule, a matter that those in this country who are familiar with J. Loeb's work will appreciate. As Mann said in his first book, salt-free proteids are dead proteids—it is the presence of salts that puts life into them. This view, of course, rests on an acceptance of the importance of electrical phenomena in chemical reactions and biologic processes, and Mann particularly urges the view that even the colloids are electrolytes that undergo dissociation to a certain degree. The work of Fischer and others on the synthesis of proteids is given quite fully. Taken all in all, this work is an important addition to the scientific literature in the English tongue.

The scope of the second book is indicated by its title, and we are promised that if this first effort meets with sufficient success it will be followed by further publications of like nature, an enterprise that is bound to be welcomed by all those who have the interests of medical science at heart. The book opens with a consideration of the chemical and physical principles underlying metabolism and enzyme action in general, which are then applied to a discussion of the problems of secretion. More specialized topics are then taken up, including the consideration of the atmosphere and the effects of increased and decreased atmospheric pressure. Separate chapters are given to the topics of carbohydrate, fat and purin metabolism; the relation of water to metabolism; the formation of urea and the secretion of urine; the formation of lymph and the mechanism of absorption from the small intestine. Recent work on hemolysins, cytotoxins, etc., as well as on the internal secretions, are also briefly summarized. The important question as to the amount of space that shall be given to bibliography has been compromised by putting at the end of each section references to the chief reviews on the topic, and also to most of the important papers. The book carries the impression that it is written for the advanced student, or perhaps better for the ordinary student who is not content with learning the fundamentals of the essentials of medicine, but wishes to know along which lines progress is being made, and what suggestions original minds have brought forth that will lead him into new fields for himself. The number of students of this type is growing, both among those who have graduated in medicine and among those who are at the beginning of their work, and the publication of such books is undoubtedly the greatest aid in the development of men who appreciate that medicine is a biologic science in the truest and broadest sense of the word.

Miscellany

Metabolism of Colds.—H. Wakefield (*Medical Record*), thinks that colds represent the results of disorders of metabolism due to local circulatory disturbances following the unequal exposure of some part of the body to cold. The degree of temperature is subordinate to the state of inequality produced, for a cold may be due to the extrinsic effect of either cold or heat if sufficiently pronounced or abrupt to insure a localized action of definite heterogeneity for the balance of the organism. The author has discovered that cold heightens and heat lowers the specific gravity of protoplasm in general, not excepting that of the parenchyma, that the molecular weight or density of our parenchyma and all the living protoplasm is increased by cold and decreased by heat. This is not a nervous effect but a direct responsive reaction of protoplasm, *per se*, as is attested by the fact that it is as marked in nerveless unicellular and multicellular organisms as in those of the highest types of nervous organizations. In a common cold the author says that primarily a condition of disequilibrium is produced. A subject, during a period of normal heat balance, gets wet, cold feet; a state of contraction of the tissues of the lower extremities is attained, the blood is ejected from the peripheral vascular areas to the more roomy reservoirs of the splanchnic veins, which readily dilate to receive it, with the result that a pernicious splanchnic venous stasis is produced, concurrent with a capillary and arterial blood deficiency in the extremities and with an inevitable suboxidation of the dependent tissues in the extremities. The author then describes the various stages through which such an affection passes. The usual treatment has been more or less successful in the past, but only with a vague idea of the pathology and etiology of the condition.

Anemia in Porto Rico.—The Anemia Commission reports further on its work in Porto Rico. The outdoor clinic was opened on June 1, 1905, at Aibonito. As soon as the principal station was thoroughly organized and in good running order, substations were opened at various other towns. The attendance of the patients at the clinics naturally fluctuated, but the majority attended regularly. Those from long distances were given enough medicine to last them for a longer interval than those patients who lived close at hand. A tent hospital of 60 beds was used for patients suffering from severe grades of the disease and for patients who had come great distances. This hospital also afforded opportunity to study and to keep under observation cases presenting symptoms of especial interest. The commission studied the effects of thymol and betanaphthol in the treatment of this disease, and their relative value is discussed. The commission states that the specific treatment of anemia in Porto Rico is beyond question. Both betanaphthol and thymol are excellent in their results and each, the commission states, has its special uses. The repeated use of these anthelmintics weekly for two or three months in cases in which there is intense anemia is not advised. Betanaphtbol in these cases, by adding an element of irritation to an already diseased kidney, may aggravate the existing process. Tbymol is less irritating, and the commission believes that consecutive doses of either drug is sufficient to bring the patient if not to a cure, at least to the assurance of a practical cure. The report refers at some length to the many "patent medicines," chiefly iron preparations, which are being sold in the island for the relief of this condition, and states that it should be remembered that these remedies are paid for from the earnings of a class said to be starving in poverty, and that the list of "snre cures," etc., is too long and too disgusting to contemplate without anger. The commission found that iron is of practically no value in the treatment of this condition except as it is of value in the after-treatment of malaria or of syphilis.

The Therapeutic Value of Alcohol.—A. D. Blackader (*Montreal Medical Journal*), does not consider alcohol an efficient cardiac or respiratory stimulant. In some conditions with a determination of blood to the interior of the body, the administration of alcohol by dilating the superficial vessels

and equalizing the circulation may be of considerable service. Alcohol is not a stimulant to the nervous system. Its action is that of a narcotic, relieving nervous strain, and promoting rest. No other narcotic can be used so freely with so few injurious by-effects. Alcohol in disease is a valuable food, replacing carbohydrates, and as a general rule saving proteid metabolism. It places no tax on the digestive organs; if used intelligently it increases their secretion. In low and asthenic conditions it may have also a favorable action on the hepatic cells, stimulating them to increased activity. In infections of all forms alcohol should be used cautiously. In large amounts it probably will do harm by destroying the resisting powers of the organism. The effect of alcohol varies much with the individual and its employment demands much discrimination and careful and frequent observation. Its prolonged use is liable to lead to degenerative changes in the heart, blood vessels, and secretory organs.

Profits from Dr. Pierce's Prescription.—At the trial in the libel suit brought by the World's Dispensary Association against the Curtis Publishing Company, the following figures were given by Lee H. Smith, vice president of the company, regarding the profits in the "Dr. Pierce's Favorite Prescription" business since 1899: 1899, $167,425.08; 1900, $188,607.09; 1901, $113,725.27; 1902, $143,731.86; 1903, $192,222.93; 1904, $78,241.72; 1905 (loss), $38,441.31. The sales from May, 1903, to May, 1904, amounted to $971,550.92; from May, 1904, to May, 1905, $752,935.97; decrease, $218,614.95. Sales from May, 1903, to December 31, 1903, were $585,735.41; and from May, 1905, to December 31, 1905, $447,655.98; decrease, $138,080.43. Total decrease in twenty months, $356,694.38.

Protection of Animals in Turkey.—The Constantinople correspondent of the *Lancet* states that the employment of senile, debilitated or diseased horses has been forbidden. The Turks, on the whole, are kind to animals, and at almost every house in Stamboul there is a receptacle of some kind which is kept full of water for the use of the innumerable street dogs. The *Lancet* states that a cabman who runs over one of these animals while it is taking a nap in the middle of the street is compelled to pay a fine, and that the Sultan is said to spend a large sum annually in feeding the numerous stray dogs round his kiosks and palaces.

Diagnosis of Liver Abscess.—Sexton says that more skill is required in diagnosing abscess of the liver than in diagnosing most other tropical diseases. The beginning of the abscess is often so obscure and its development so insidious that at times it is difficult to determine the presence of pus. Abscess of the liver, he states, may be confounded with intermittent malaria, typhoid fever, right sided pleurisy, cancer of the liver, gallstones, suppurating hydatid cyst, and many other diseases.

Spermaceti to Help in Removal of Cysts.—Pozzi has recently called attention anew to the advantages of filling a thin walled cyst with spermaceti as an aid in its removal. He first recommended it several years ago in his Handbook of Gynecology, and time has confirmed its value. The cyst is evacuated as usual and rinsed out. Melted spermaceti is then injected. By the next day the spermaceti inside the cyst has cooled into a hard ball so that the cyst can then be shelled out without the slightest difficulty.

Practice in Surgery.—Barbat, in the *California State Journal of Medicine*, states that no individual should attempt to operate who does not keep in constant training, either as an operator or an assistant, because his results will be bad, and he will bring legitimate surgery into disrepute.

Diet After Laparotomies.—Dr W. B. Chase, in the *American Journal of Obstetrics*, declares that the diet of patients after abdominal section calls for the greatest circumspection. He advises following the rule that nourishment, by the mouth, before the stomach retains or digests it, is positively harmful.

Survival of the Fittest.—Dr. S. M. Miller, Knoxville, Tenn., states that the influence of selection in the improvement of strains is clearly observed along the entire developmental line from the lowest visible organism to the highest order of physical perfection.—*Southern Med. and Surg.*

Climatology.—Dr. F. G. Byles, Denver, declares that a physician should not prescribe a drug or medicine the physiologic action of which is unknown to him, and that it is equally important that he understand the physiologic action of a climate before prescribing for a patient in this respect.—*Colorado Med. Journal.*

Prognosis in Alcoholic Insanity.—Dr. C. L. Hamilton says that in the more acute forms of alcoholic insanity it is always best to give a guarded prognosis to the patient's family; at the same time, he says, they should be encouraged by the statement that a large percentage of these patients recover.—*Illinois Med. Jour.*

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.
State Medical Association of Texas, Fort Worth, April 24-26.
Arizona Medical Association, Phoenix, April 24-25.
Medical and Chirurg. Faculty of Maryland, Baltimore, April 24-26.
Nebraska State Medical Association, Lincoln, May 1-3.
New Mexico Medical Association, Albuquerque, May 2.
American Therapeutic Society, New York City, May 3-5.
Oklahoma Medical Association, Oklahoma City, May 8.
Indian Territory Medical Association, Oklahoma City, May 8.
Utah State Medical Association, Salt Lake City, May 8-9.
Nevada State Medical Society, Reno, May 8-9.
Louisiana State Medical Society, New Orleans, May 8-10.
Arkansas Medical Society, Hot Springs, May 8-10.
Montana State Medical Association, Butte, May 9-10.
Kansas Medical Society, Topeka, May 9-11.
Ohio State Medical Association, Canton, Ohio, May 9-11
American Climatological Assn., Atlantic City, N. J., May 12-14
American Assn. of Physicians, Washington, D. C., May 15-16.
Missouri State Medical Association, Jefferson City, May 15-17
Iowa State Medical Society, Des Moines, May 16-17.
North Dakota State Medical Association, Fargo, May 16-17
New Hampshire Medical Society, Concord, May 17-18.
Amer. Assn. of Path. and Bacteriologists, Baltimore, May 18-19.
American Gynecological Society, Hot Springs, Va., May 22.
Illinois State Medical Society, Springfield, May 22-24.
South Dakota State Medical Association, Watertown, May 22-24.
Connecticut State Medical Society, New Haven, May 23-24.
Indiana State Medical Association, Winona Lake, May 23-25.
Michigan State Medical Society, Jackson, May 23-25.

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Third Annual Meeting, held in Philadelphia, March 21, 1906.

DR. JAMES M. ANDERS in the Chair.

New Species of Parasite in Man.

DR. CHARLES WARDELL STILES, U. S. P. H. and M.-H. Service, described a parasite which is regarded as belonging to the family of filaria. It measures from 32 to 52 millimeters in length. It was found in Georgia and was taken from an ulceration of the leg. The only parasite which it most nearly approaches in similarity is one described for certain South American birds. He regards it as a tropical or subtropical parasite, of which Georgia will probably form the northern geographical border. It is immature as it occurs in man, and until the adult stage is observed he believes it impossible to say much concerning it. He regards the infection a surgical rather than a medical matter.

DR. JUDSON DALAND spoke of the prevalence of filaria on the eastern coast of India. The hospitals, however, do not show as many cases of filariasis as would be expected. This is because the patients do not apply promptly for aid.

DR. ALLAN G. SMITH questioned whether this new parasite should be regarded as definite for man and suggested the possibility of its presence in the local infection as accidental. He thought it probably is related to the hook worm species. Had it gotten into the general economy he thinks it would have grown to a larger size than that attained.

Malaria in the Tropics.

COL. WILLIAM C. GORGAS, Chief Sanitary Officer, Isthmus of Panama, contributed this paper, which was read by Dr

McFarland. Colonel Gorgas, since 1898, has served four years in Cuba and two years at Panama, part of the time with troops, but most of the time he has been connected with municipal sanitation. At Panama he is in charge of the yellow-fever wards, and all non-immunes with fever from any cause coming into Ancon Hospital are sent to these wards. The larger proportion of such cases are malaria, about 200 malaria being treated per month. His experience has shown that malaria in the tropics is by far the most important disease to which tropical populations are subjected. While the per cent. of fatalities is not nearly so great as from some other tropical disease, the degree of incapacity produced is much greater than that from all other diseases combined. At Santiago, while there were more deaths from yellow fever and typhoid than from malaria, it was the latter disease which prostrated the Army. Even at Havana, where malaria was by no means so general as would be expected, a greater number of persons died from malaria every year than from yellow fever. As a result of their mosquito work in Havana, the deaths from malaria, which for many years had averaged about 350, were 351 in 1901; 77 in 1902; about 50 in 1903; and since remained at about 40.

He regards Panama as favorable a place for the development of malaria as could be found. Three-fourths of the disability among the laborers are due to malaria. To correct this the greater effort was directed toward draining localities adjacent to towns and dwellings. In places that could not be drained oil was used very freely. An equally important measure is the giving of prophylactic doses of quinin. Thorough screening was also carried out. With 22,000 men on the payrolls during February, only 22 per 1,000 were incapacitated every day on account of sickness, three-fourths of which was due to malaria. In his wards at Ancon he has personally treated 1,055 cases of malaria in the last six months. In each case blood examinations were made and the character of the parasite recorded. The estivo-autumnal variety predominated, but the attacks, in general, were mild and yielded easily to treatment. Among the 1,055 cases there were only five deaths. There have been 20 cases of hemoglobinuric fever in the past eight months, with only three deaths. The treatment has been the persistent use of quinin, given for the first three or four days hypodermically, but as soon as vomiting ceases it is given by the mouth; 20 grains in the twenty-four hours, hypodermically, and 30 grains by the mouth, has been the ordinary course pursued. As sanitary conditions are improved, Colonel Gorgas believes it a rational hope that malaria will decrease in the same ratio.

Clinical Notes on a Recent Epidemic of Dengue Fever.

Dr. Aristides Agramonte, secretary of the Board of Infectious Diseases, Havana, Cuba, contributed this paper, which was read by Dr. John M. Swan. He said that the city of Havana and neighboring towns suffered from a well-marked epidemic of dengue fever during last year. From the middle of September to the first of December he personally attended 154 cases, and saw many others in consultation. He questions whether the disease may not be endemic there, assuming epidemic form at long intervals. During the period referred to he has seen but few children attacked and no infants. The degree of immunity conferred by an attack of dengue he believes is slight. He has seen four instances in which the disease reappeared in the same individual after an interval which excluded the possibility of relapses.

All efforts to infect individuals by the bites of mosquitoes previously applied to cases of dengue fever have been unsuccessful. Notwithstanding this, the circumstantial evidence is directly in favor of insect transmission, and he believes that mosquitoes are responsible for the extensive and rapid propagation of the disease, and that the inability to demonstrate this theory is due to incomplete technic. Finlay for twenty years defended the same theory regarding yellow fever before it was demonstrated. The spread of dengue fever occurs much like that of yellow fever, from house to house, along the same side of the street, attacking more frequently the members of a family than the transient visitors. Observation of many of the cases indicates an incubation period of from three to seven days, but in one special case cited, the period of incubation seemed to be from thirty-six to fifty-six hours.

Cephalalgia, rachialgia and fever usher in the attack, and the eruption may be observed in eight cases out of ten. Dr. Agramonte remarked on a few of the clinical features which, in his opinion, have been treated with undeserved disdain or entirely overlooked. Among these is the eruption, which is seen most frequently. The character of the eruption is modified by the patients' complexion and surface conditions. In the case of a plethoric, blonde German woman the eruption was like that of scarlatina. In the African it is most puzzling, and this race has a marked degree of resistance against dengue fever. Albuminuria in a slight degree has been found in almost every case, disappearing rapidly with defervescence. Exceptionally the albumin in the urine has been in considerable quantity, precipitating by the "heat-and-acid" test, but rarely containing casts or epithelium. The early appearance of albumin in dengue he suggested might be considered a differential sign between this disease and yellow fever. Observation of the epidemic shows that an attack of dengue leaves the individual a fit subject for the acquisition of other severe infections. The mortality is regarded as low, for in an estimated population of 266,000 only six or eight deaths were directly attributable to dengue.

The diagnosis is not difficult when it is known that an epidemic exists, but it is most easily mistaken for yellow fever during the first forty-eight or seventy-two hours. Faget's sign is a fairly constant differential index; in dengue the tendency is for the pulse to correspond with the variation in the degree of temperature, although there is sometimes a comparatively slow pulse as a result of the generally depressed condition. A most careful and painstaking examination of cases can only help to differentiate these diseases.

Officers Elected.

The following officers were elected: President, Dr. Roland G. Curtin, Philadelphia; vice-presidents, Dr. Abraham Jacobi, New York; Dr. Aristides Agramonte, Havana, Cuba; secretary, Dr. Joseph McFarland, Philadelphia; assistant secretary, Dr. John M. Swan, Philadelphia; treasurer, Dr. Wharton Sinkler, Philadelphia; councilors, Dr. James M. Anders, Dr. Judson Daland, Dr. Thomas H. Fenton and Dr. B. F. Stahl, all of Philadelphia.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held Feb. 27, 1906.

The President, Dr. P. K. Brown, in the Chair.

Personal Experiences with Football Injuries.

Dr. R. L. Wilbur described the football injuries that had come under his care for the past six years (omitting 1903), at the Leland Stanford, Jr., University. These included nearly all of the severe injuries and a large proportion of the minor ones. In the 88 individuals treated the most frequent injuries were the following: Fractures of the clavicle, 3; of both bones of the leg, 3; of the nose, 5; of the ribs, 5; sprained ankles, 6; severe knee injuries, 21; muscle tears, 5. The majority of the knee injuries were sufficiently severe to be followed by an effusion into the synovial sac. If seen within the first twenty-four hours these were treated by adhesive plaster tightly applied to the slightly flexed knee, and by rest in bed, elevation of the joint, cold locally, and a saline cathartic. After a few days a second bandage was applied, and if the knee appeared to be strong, a gap was left in the plaster posteriorly and the patient was allowed to walk with the aid of a cane. In ten days, in favorable cases, the player was able to do light work, but for three weeks or more the knee cap and the lateral portions of the joint were protected by adhesive plasters.

If the patient was not seen within the first twenty-four hours, a day elapsed before the adhesive bandage was applied, the treatment being otherwise practically the same as in the former case.

Sprains of other joints were treated on much the same lines as those of the knees. Muscle tears can be readily repaired by applying plaster in the direction of the muscle fibers and

binding them down with circular strips. After three to six days, active work can be resumed without removing the bandage. In the author's experience early rest and ambulatory treatment with adhesive bandages gives as good final results as where the injured muscles or joints are treated along more conservative lines. The injuries seemed to follow "open plays" about as frequently as "mass plays."

DR. A. B. SPALDING said that one reason why football injuries are so frequent is that the coaches urge the players to overlook injuries of all kinds. Furthermore, when an injury occurs, the coach does not allow the player to take proper care of himself. He mentioned a case in which a sarcoma developed in a subcutaneous clot, apparently on account of lack of care. The game should be more carefully supervised by physicians. The open game is quite as dangerous as the closed game.

Abdominal Exploration.

DR. C. M. COOPER stated that the mortality in diagnostic operations, even in large hospitals, is estimated at from one to two per cent., and that the mortality in private practice, by unskilled operators, is unquestionably higher. He believes that the peritoneal adhesions which sometimes follow these operations are less frequently due to the exploration itself than to some condition of sepsis that was already present before the operation. An exploratory operation should never be undertaken until all other diagnostic means have been exhausted. Many useless operations might thus be avoided. Furthermore the diagnosis may not be cleared up by the exploratory operation; and many patients have been closed up on account of supposed cancer, where the later developments showed that some other condition was present. In spite of these objections, exploratory operations are frequently indicated.

Examples of indications for operation are as follows: Stomach trouble with continued absence of free hydrochloric acid and the presence of lactic acid and the Oppler-Boas bacilli; or stomach trouble with continuous delay in emptying; or dyspepsia developing in middle life that does not yield to well-directed medical treatment, especially if anemia, wasting and occult blood in the stools are present.

DR. F. B. CARPENTER stated that continued pain is often an indication in itself for an exploratory operation. Adhesions may be found in such cases, and by breaking up these the pain may be relieved.

DR. TERRY advocated a long incision for exploratory operations long enough so that the operator may put his hand through with comfort. Sometimes continued pain is due to lesions of the solar plexus and surgical intervention is then of no avail.

DR. GEORGE B. SOMERS believes that the exact diagnosis is often of less moment as a guide to operation than are general indications. For example, it makes very little difference whether we operate on an ovarian or a tubal abscess. In either case the operation is indicated.

MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA.

Regular Meeting, held March 19, 1906.

The President, DR. HENRY W. CATTELL, in the Chair.

Quackery: What Are We Going to Do About It?

MR. CHAMPE S. ANDREWS, counsel of the Medical Society of the County of New York, described the laws of that state and their successful application against illegal practitioners in the metropolis, and gave suggestions for similar action in Philadelphia. A great cause of surprise, he said, is the fact of the different classes of society interested by the quack: The lawyer from one view; the doctor from an entirely different standpoint; the student of religions from a still different view. There is much to attract the sociologist and the criminologist. Among the different branches of the healing art which the quack takes up were mentioned those of the oculist, the hydropath the electropath the fraud pure and simple, who claims to be a physician; the osteopath, the vitapath; the fraud who practises on the consumptive poor; the so-called specialist in diseases of men, the patent medicine quack.

Mr. Andrews recounted specific instances of quackery and of arrests. One instance was that of a Mrs. Browning Weaverson, who belonged to a cult which claimed to cure disease by the application of human waste. The patient was a woman, 60 years of age, with cancer of the leg. For five days a plaster, composed of human waste of the patient, had been applied. Gangrene had set in and the patient was at the point of death. Another was that of a Jew named Benjamin, who practiced among the women of the East Side, claiming to have a drug which cured sterility. About 25 women had appeared in court who had taken the drug, the effect of which was to cause a swelling of the abdomen.

The midwives were said to be the most difficult class of quacks to convict. They are most effectively reached through the postoffice authorities. The water-cure fad seems to dominate the German section. A curious fact brought out in these trials is that almost every quack when brought into court has somebody who has been deceived into believing that they have been greatly benefited. Among the electropaths was one Rohrer, who had established a diploma mill operating chiefly among Swedish immigrants. Fifty of these graduates had been convicted. Rohrer was himself the head of what might be called the massage trust of New York. He is an example of the men who use electricity and claim that they are free from the medical law. In this class are the quacks who have the so-called electric chair, electric shoes, electric trusses, "magic boots," etc. An account was given of the quack who had represented himself as being associated with the celebrated Dr. Koch. Action has been brought against him which will make impossible the existence of the Koch lung institutes.

A case of special interest was that of a carpenter, rejected for life insurance on account of a slight condition of the kidneys, who had fallen into the hands of one Kane who was professing to cure by the use of radium. He greatly exaggerated the man's condition, but said that if he could afford to buy of him a certain quantity of radium, which would cost $10,000, he could cure him. The man actually did get together $9,872, which he paid the quack, being treated for about a year. An arrest followed for grand larceny and the man is now serving a term in the penitentiary. A vial filled with greenish colored fluid, claimed to be the so-called radium, and which had been taken from the safe of the quack, was shown. The vial was about an inch and a quarter in diameter, and the part which was said to cost $10,000 was about an inch in depth.

The professional abortionist will not give drugs because this makes his conviction easy. Mr. Andrews said that when every state shall have a comprehensive medical law the profession will have a medical instrument which will enable them to check the practice of almost every class of medical quackery, except the man who is a charlatan inside of his own profession. In referring to the attitude of the newspapers toward quackery, it was the opinion of Mr. Andrews that in their acceptance of the advertisements of the so-called specialists in diseases of men, abortionists and patent-medicine dealers, active assistance is given to the evil. He believes the time will come when the newspapers will be obliged to give up these advertisements, as some are now voluntarily doing. The President of the Board of Health of New York has sent to the County Society over 100 complaints against illegal practitioners. A police officer is detailed to the work of the society and does nothing else. The court sets aside a day in the week for the trial of these cases. There is the problem of much work to be done with but a small amount of money, but Mr. Andrews believes that the profession of New York will awake to the necessity of asking the general public to contribute toward the carrying on of the work which in reality affects the general public more than the profession. While much has been accomplished, Mr. Andrews believes that if the work were neglected for twelve months the city would be again overrun with quacks. He believes there should be some organized body behind the movement some concentric effort made to enforce the laws. He urges the formation of an organized body with a charter under the general corporation laws of one of the states. Should the American Medical Asso-

ciation, organized as it now is in every state of the Union, undertake the splendid work of suppressing the quack, he believes the effort would be attended with much success.

DISCUSSION.

Dr. Samuel G. Dixon, Health Commissioner of the State of Pennsylvania, thought the time has come when the members of the profession should present to the legislature a bill empowering the State Medical Examining Board to revoke the license of a physician practicing as a charlatan or a quack. Physicians should take as much pride in having a high standard of honesty and honor in the profession as do the members of the Bar. In his opinion the law-makers are ready to pass laws forbidding the sale of medicine unless the formula is printed in full.

Dr. John B. Roberts did not believe that the patent-medicine or quack evil is entirely a disease of the community, but a disease, to a certain extent, of the medical profession. The ease with which the public is duped by those whom intelligent men in general call quacks, is partly the result of quackish men in the professional ranks. The essence of quackery is a boastful assertion of skill and infallibility, and a desire to obtain large sums of money for treating disease. The sick often seek the advertising doctor and believe the false assertions of the patent-medicine label, because they have found the medical men known to them to be incapable, inefficient, or so exorbitant in fees that help seems impossible at their hands. The family which can obtain efficient medical aid for a moderate fee near its home does not often drift into the hands of the recognized quacks.

The college which graduates an ignoramus, the state examining board which gives a license to an unfit applicant, and the physician who places an unjust value on his services, or who deceives his confiding patient are potent agents in encouraging quackery. Some years ago, he said, the alumni of various medical schools were obliged to compel their alma maters to stop the output of half-educated graduates, and the profession has had need to be on the alert that medical examining boards do not permit improper men to obtain licenses to practice. These sources of supply of *quasi* physicians, Dr. Roberts said, have now been pretty satisfactorily checked. There remain, however, the secret remedy prescribers, the commission-giving consultant, and the big fee doctors to be disciplined by the medical profession itself.

Dr. Henry Beates said that the inability to successfully carry out the prosecution of quacks is due to the feebleness of the act of Assembly governing such matters. Efforts have been made to so amend the present law that to the usual fine there should be added a term in the penitentiary; also conferring the power to revoke the license of a practitioner who carries out quackish methods. These attempts to elevate the standard have met with opposition from every commercial medical college in the state of Pennsylvania. Dr. Beates strongly urged the organization of a movement to correct the evil of quackery.

Thomas W. Barlow, Esq., of the Philadelphia Bar, said that if an organized effort were made to prosecute offenders in Philadelphia as is being done in New York, there must of necessity be a change in the police rule; for, while in New York a day each week is given by the courts to the work of the society, in Philadelphia, were an arrest made, it would take from thirty to sixty days to secure an indictment and probably six months to obtain conviction.

Dr. S. Solis Cohen said that it is especially difficult to control the evil when men who are looked up to as leading lights, founders of colleges, etc., use their political influence against the effort. The medical profession, as a whole, and the medical press in particular, are not free from contamination with the patent-medicine evil. He expressed the hope that those interested, not of the medical profession, will point out to the newspapers the wrong they are doing in printing objectionable advertisements. Until the medical press is clean, the profession can not work in this direction. He doubts whether the American Medical Association is the body to lead in an organized movement against quackery, although it might properly co-operate with a national body, such as Mr. Andrews suggested, and that it would be quite proper for the Philadelphia County Medical and other bodies of physicians interested in the work to co-operate individually and collectively with such an organization. Regarding the suggestion of so amending the medical laws that a license may be revoked, he thought it would be injudicious to place such power in the hands of any other body than a court of law, and that a license should be revoked only by order of court after a full judicial hearing.

Dr. Persifor Frazer said that there are many quacks in geology and chemistry as in medicine. They are not, however, so well known. He endorsed the suggestions made by Mr. Andrews.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Scarlet Fever.

In the treatment of scarlet fever, C. F. Shollenberger, in the *Denver Medical Times*, states that there is no disease of infancy and childhood in which so much care is necessary in the treatment as scarlet fever. The important things to observe are to prevent complications and sequelæ, which so frequently arise during the convalescent period of scarlet fever unless exceedingly great care is observed. The patient should be instructed to remain in bed at least a week after the temperature has entirely subsided, and to continue on a liquid diet, preferably milk, for two weeks longer. During the active stage of the disease, whether mild or severe, the secretions from the nose, throat and mouth should be removed on pieces of linen and immediately burned. The fecal and urinary discharges should be disinfected, and any discharge from the ear after being removed by absorbent cotton should at once be destroyed. All linens, towels and bedding should receive thorough disinfection before being taken from the room. The feeding utensils should be properly sterilized, and after the removal of the patient the sickroom should be thoroughly disinfected by means of sulphur or formaldehyd gas. For the purpose of disinfecting the bed, furniture and feeding utensils, a strong solution of carbolic acid, 1 to 20, or corrosive sublimate, 1 to 200, should be used. All books and toys which have been in the sickroom should be thoroughly disinfected or destroyed. Failure to observe any or all of these precautions has produced a great many deaths.

The atmosphere of the sickroom should be kept pure and fresh and at a temperature of from 65 to 70 F., avoiding all exposure to draughts, either directly or indirectly. This author recommends that a sponge bath be given to the patient once or twice a day, and that during the period of desquamation or at any time when excessive pruritus is present, some soothing lotion should be applied to the entire body. For this purpose he recommends the following combination:

R. Menthol	gr. x	65
Unguenti zinci oxidi	ʒss	15
Lanolini q. s. ad to make	ʒi	30

M. Ft. unguentum. Sig.: Apply locally to the surface of the body.

The diet, of course, should be nutritious but mild, as has already been stated, consisting preferably of milk.

The medicinal treatment must be symptomatic, as no specific treatment has yet been discovered. Hydrotherapy is the best means of reducing the temperature, applied in the form of cold sponging, the cold wet pack or cold bath, depending on the individual case. Ice bags applied to the head are very serviceable. In giving the bath Shollenberger advises that the water be at first made lukewarm and gradually cooled until the desired temperature is reached. If active delirium is present and can not be controlled by hydrotherapy, potassium bromid or chloral hydrate may be given internally. In the treatment of the throat older children and adults may use some mild antiseptic gargle, while in young children spraying

should be employed. In the line of general treatment there is nothing better, he states, than the tincture of the chlorid of iron, especially when the stomach is in good condition. This preparation may be given in doses of from 3 to 10 minims each, and repeated every three hours, depending on the age of the patient. If the heart shows any signs of weakness, whisky, brandy or port wine is recommended as a stimulant, or strychnin sulphate in doses of 1 140 to 1 100 grain each, and repeated in from three to six hours.

COMPLICATIONS AND SEQUELÆ.

To prevent otitis media thorough irrigation of the fauces should be followed out. The younger patients will resist this irrigation of the fauces, and under such circumstances good judgment must be used as to the carrying out of this treatment. If the signs of otitis media arise, such as earache or pain referred to the ear, the instillation of hot water may be all that is necessary to relieve the distress. If this should not be sufficient, however, a solution similar to the following may be instilled into the ear:

℞ Tincturæ opii
Solutio cocainæ, 5 per cent., āā ..... ℥ss 2|

M. Sig.: Instill one or two drops into the affected ear.

The hot water bottle or hot salt bag should be applied externally. If pus is present the tympanic membrane must be incised. The ear should then be irrigated three times a day with a 5 per cent. solution of hydrogen peroxid, and if this discharge should persist after convalescence, irrigation must be continued at least twice a day until the pus has ceased to flow.

Enlargement of the glands of the neck is another very painful complication, and, according to this author, must be treated by the application of ice bags or cold cloths locally. If relief is not obtained within forty-eight hours hot poultices should be applied, and if there is any evidence of pus formation, a free incision, followed by sterilized irrigation and dressing, is necessary.

Arthritis as a complication frequently yields, without much stubbornness, to local treatment. For this purpose he recommends the following combination:

℞ Tincturæ aconiti ..... ℥ss 15|
Tincturæ opii
Spiritus chloroformi, āā ..... ʒvi 24|
Linimenti saponis q. s. ad to make ..... ℥iv 120|

M. Sig.: To be applied locally three or four times a day. The affected joints should be wrapped in absorbent cotton after the foregoing application has been made.

Although he does not regard this condition as a true rheumatic arthritis, he recommends small doses of sodium salicylate in such conditions.

When great gastric irritability is present, together with an accompanying enteritis, and the vomiting becomes excessive and continuous, he recommends large and frequent doses of bismuth subnitrate. In some cases minute doses of cocain may be given. The ice bag or mustard plaster applied to the epigastric region are of great service. Rectal feeding must be employed until the vomiting ceases, when the feeding by the stomach must be very gradually resumed.

Nephritis is the most severe and common complication of scarlet fever. Consequently, daily examination of the urine must be made for several days after convalescence has taken place. If there is any sign of disturbance of kidney secretion, diaphoresis may be employed by means of baths, hot packs, hot air, and hot drinks in small amounts. When marked dropsical effusion is present the free use of a hydragogue cathartic is indicated, and he recommends for this purpose the compound jalap powder. In order to render this more palatable for young children Shollenberger states that a cream of tartar lemonade may be substituted and sweetened and flavored with mild claret or wine. After the active congestion of the kidneys has been reduced, a stimulating diuretic should be given, and the following combination is recommended:

℞ Potassii acetatis ..... ʒii 8|
Infusi digitalis ..... ℥iii 90|

M. Sig.: One teaspoonful every four hours.

Flaxseed or mustard poultices placed over the region of the kidneys will often produce a stimulating effect, and assists in relieving the backache which is so frequently present. Some authorities recommend the local application of leeches over the kidneys, and others recommend dry cupping. Both of these are often objectionable to children.

If uremic convulsions should arise energetic diaphoresis must be procured. During the convulsion chloroform may be used to allay the violence of the attack; otherwise large doses of bromid or chloral hydrate will suffice.

D. R. Lucy, in the same periodical, recommends the following combination for general systemic treatment of scarlet fever, beginning about the second day:

℞ Tincturæ ferri chloridi ..... ʒii 60
Potassii chloratis ..... ʒi 4|
Glycerini
Aquæ, āā, q. s. ad to make ..... ℥iv 120|

M. Sig.: Take one teaspoonful in water every two hours.

Zinc Preparations.

In the treatment of herpes zoster the *American Journal of Clinical Medicine* recommends the use of zinc phosphid (U. S. P. 1890) as one of the most efficient remedies. As to its method of action, it is assumed that this preparation acts as a nutrient and relieves the condition by improving the deranged nutrition of the affected nerve tissue. Acting on this principle, the preparation has been used in numerous cases of stubborn neuralgia, in excessive hyperesthesia, and in other diseases of the peripheral nerve tracts, with marked success. It is suggested in this connection that the entire group of diseases following degeneration of the various tracts in the spinal cord, of which tabes dorsalis is one, the wet brain of alcoholics, general paresis, and neurasthenia are others, may be successfully treated by this preparation. As to the dosage one-sixth grain is the average dose for an adult, to be given one hour before each meal and just before retiring. The object of the time of administration is to avoid having the remedy broken up by the digestive fluids, with the evolution of phosphuretted hydrogen, and nauseous eructations, which are very unpleasant to the patient. In this size of dose it probably should not be continued for a longer period than one week at a time, each month.

In cases of epilepsy the zinc oxid pill is recommended by Gowers and Beevor when the bromids do not act properly.

In cases of heart complications with aortic regurgitation the following is recommended:

℞ Zinci phosphidi (U. S. P. 1890) ... gr. 1 s. .. 008
Ext. gentianæ q. s.
M. Ft. pillula No. i. Sig.: One such pill three times a day.

In hysterical affections the following is of value:

℞ Zinci valerianatis ..... gr. iii |20
Pil. asafetidæ co. (B. P.) ..... gr. ii |12
M. Ft. pil. No. i. Sig.: One such pill twice a day.

Medicolegal

Sudden Giving Way of Foot Not a Disease.

The Supreme Judicial Court of Massachusetts says, in the case of Noyes vs. Commercial Travelers' Eastern Accident Association, that the plaintiff, a man 76 years of age, was on the platform of a railroad station, about to take a train which was entering the station. He walked forward on the platform, near the side of the train, before it stopped, with a view to taking a forward car, when suddenly, without any apparent cause, "his right foot gave way," and he fell, coming in contact with the train, and his foot was crushed. On this description of the accident it could not be said as a matter of law that he was negligent. His foot had never before given way in a similar manner. So far as appeared, the injury was entirely accidental. In this particular the court could not rule that the accident prevented him from recovering on his contract with the association. Nor could it be said, as a matter of law, that such a disorder as the sudden giving way of his foot, without apparent cause, was a disease, within the meaning of the contract, such that he was precluded from recovery for that reason.

Condition of Family and Patients No Ground for Bail.

The Supreme Court of Mississippi says, in Winegarden vs. State, where the former was convicted of grand larceny, that, in an affidavit he made in support of an application for bail pending an appeal, he set forth, besides bad health in himself, that his family, a wife and daughter, were in poverty; that he was their only means of support; that his daughter had been an invalid for years, and needed his medical care, he being a physician who understood her case better than any one else; that he was in large practice as a doctor of medicine, making a specialty of diseases curable by medicine concocted by him from "native herbs and roots"; and that his large number of patients needed him very much at that time, and he thought that many of them would never be cured if they were deprived of his medical attention. The court says that it had deep sympathy for his family; but it was certain that their condition furnished no ground, under the law, on which to base an order of bail. The same was true of the deprivation of his services to his patients, to whom the court could extend its condolence only.

Power of Patient to Waive Statutory Privilege.

The Appellate Court of Indiana, Division No. 2, says, in Metropolitan Life Insurance Company vs. Willis, that in an application for insurance the insured "expressly agreed and stipulated that in any suit on the policy any physician who had attended him might disclose any information acquired by him in any wise affecting the declarations and warranties" made in the application. But when a physician was called as a witness objection was made that he was not competent to testify and answer the question as to the disease that the insured was afflicted with when he was called to visit him because it was a privileged communication between physician and patient. The court holds that it was error to exclude the evidence. It says that the Indiana statute which makes inviolate matters communicated by a patient to his physician in the course of his professional business has always been strictly construed, and the rule is that such confidential relations will be protected by the courts, except where the patient consents to their revelation by the physician. In Penn Mutual, etc., Company vs. Wiler, 100 Ind. 92, it was said: "Notwithstanding the absolutely prohibitory form of our present statute, we think it confers a privilege which the patient, for whose benefit the provision is made, may claim or waive it." Here the assured, by an agreement in writing, waived this statutory privilege, and this court has no doubt but that he had a right to do so. His waiver must operate as such to those claiming under him.

Corporations Barred from Doing Professional Business.

The Supreme Court of Ohio holds, in the case of State vs. Laylin, that a foreign corporation, the sole business of which, as authorized by its charter, is that of defending physicians and surgeons against civil prosecution for malpractice, which, in the prosecution and conduct of said business, issues and sells to members of the medical profession a contract whereby it undertakes and agrees to defend the holder of said contract against any suit for malpractice that may be brought against him during the term therein specified, but does not assume, or agree to assume or pay, any judgment that shall be rendered against him in such suit, is not engaged in the business of insurance, nor is the contract so issued and sold an insurance contract. But a foreign corporation, created for the purpose of engaging in and carrying on such business, is not entitled to have or receive from the Secretary of State of the State of Ohio a certificate authorizing it to transact such business in that state, for the reason that the business proposed is professional business, and as such is expressly prohibited to corporations by section 3235 of the Revised Statutes of 1903. It was urged that the company, being a corporation, an impersonal entity, could not and did not itself engage in the practice of law or the management and conduct of defenses in suits at law, but in what it did, or obligated itself to do, it undertook only "to act as the agent of the contract holder in retaining legal counsel, and in managing and maintaining the defense of the suit." But the court says that if this be not the engaging in or carrying on of professional business, then it would be difficult to conceive how professional business could be engaged in or carried on by a corporation. The conclusion reached, it further says, rendered it unnecessary to consider the question suggested that the contract issued and sold by the company was a contract, the making of which was against public policy, because of the stipulations and provisions therein contained, restricting the right to compromise.

Suggestion as to Instructions on Expert Testimony.

The Supreme Court of Missouri, Division No. 2, says, in the case of State vs. Wertz, a prosecution for rape, that part of the instruction given the jury was as follows: "Whether the hypothetical case on which the opinions of the experts are based corresponds to and coincides with the facts given in the evidence the jury alone must determine from the evidence produced in this case. And, if the jury finds such hypothetical questions supposed facts not given in evidence, they, together with the opinions of the experts based thereon, should be entirely disregarded by the jury in making up their verdict." It is clear that, if the hypothetical case on which the opinions of the experts were based did not correspond to and coincide with the facts given in evidence, the court should have excluded the questions and answers to such hypothetical questions; and this error was emphasized by the additional direction to the jury that they must determine whether there was any evidence upon which to base such hypothetical questions. This direction to the jury was manifestly erroneous and constituted reversible error.

Again the Supreme Court feels constrained to suggest to the trial court the propriety of following the old landmarks. The law on the subject of expert testimony has been repeatedly and correctly declared by the courts of Missouri, and such declarations have uniformly met the approval of this court and should be regarded as well-established precedents. Where medical experts testify in a case, it is usual and common for the court, in directing the jury as to the credit and weight to be given to such testimony, to simply say to the jury, by its instructions, that "the opinions given by the medical experts in this cause are testimony before you and subject to the same rules of credit or discredit as the testimony of other witnesses. The opinions neither establish nor tend to establish the truth of the facts upon which they are based. Whether the matters testified to by the witnesses in the cause as facts are true or false, is to be determined by the jury alone. Neither are the hypothetical questions put to the medical experts by the counsel in the cause evidence of the truth of the matters stated in these questions." An instruction substantially in this form would have covered the entire subject of the expert testimony given in this cause.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 7.

1 *Prevention and Treatment of Pneumonia. B. Robinson, New York.
2 *Synthetical Medicine. E. C. Savidge, New York.
3 The Hippocratic Era in Medicine. R. C. Newton, Montclair, N. J.
4 Plea for More Conservative Examination in Suspected Cases of Pulmonary Tuberculosis. C. C. Keeler, Denver, Colo.
5 *Intraligamentous Drainage for Non-suppurating Parametritis. L. F. Garrigues, New York.
6 Football and Moral Health. W. L. Howard, Baltimore.
7 Chorea and Some Disorders Simulating It. A. A. Fisher, Philadelphia.

1. **Prevention and Treatment of Pneumonia.**—Robinson claims that with the appearance of the first symptoms of pneumonia beechwood creosote should be vaporized more or less continuously in the patient's room. At frequent intervals the inhalations are stopped and the windows opened wide. Draughts must not be tolerated, although perfect ventilation is insisted on. Robinson regards creosote as the most useful single agent in the treatment of pneumonia, as a preventive and curative, if given properly and if continued for a sufficient length of time.

2. **Synthetical Medicine.**—The title of Savidge's paper is misleading inasmuch as it does not deal with synthetic remedies, as one naturally would suppose. The author says that synthetical medicine attempts to recognize and to postpone the future trouble which is menacing each individual.

3. **Intraligamentous Drainage for Parametritis.**—Garrigues made use of the following method in two cases of parametritis with very satisfactory results: After curetting the uterus, the cervix is drawn toward the healthy side, and a bullet forceps is inserted in the vagina to the side, and slightly posterior to the cervix, so as to put the vagina on the stretch. An incision, about three-fourths of an inch in length, is made through the vaginal wall, close to the uterus. Through this incision the forefinger is inserted, and, keeping close to the uterus, is pushed well up between the layers of the ligament into the hard parametrium, and then outward, so as to open up the mass freely for drainage. Should the Fallopian tube be much swollen it is opened by means of a blunt forceps under the guidance of the index finger. A good sized tube is introduced, either into the parametrium or into the tube, as the case may be, and the operation is complete. He advises against the use of sharp perforators, scissors, etc., the finger being the most accurate and harmless instrument that can be used. The operation is said to be not dangerous, usually not very difficult, and the results certain and satisfactory.

Boston Medical and Surgical Journal.

April 5.

8 Mental Symptoms of Cerebral Tumor. P. C. Knapp, Boston.
9 Operation for Cataract. F. E. Cheney, Boston.
10 *The Early Diagnosis and Aggressive Treatment of Pulmonary Tuberculosis in a Large Out-patient Clinic. J. B. Hawes, Jr., Boston.
11 *A New Needle Holder. J. D. Barney, Boston.

10. **Treatment of Tuberculosis in the Out-Patient Clinic.**—Hawes directs attention to the harm done to patients with phthisis by the treatment ordinarily given in out-patient clinics. The great difficulty is not that there is any lack of willingness on the part of the physician, but that the patients will not co-operate with him in his efforts to get at the trouble. Sometimes, however, by waiting until the diagnosis of tuberculosis is proved by the demonstration of tubercle bacilli, those in charge of out-patient clinics are sometimes responsible for the death of the patient. Hawes emphasizes that there must be an aggressive personal interest on the part of the physician in charge; that he must himself take the initiative, educate and encourage the patient and hustle for his future good even when the patient is listless and indifferent. Every effort should be made to diagnose the disease early, before bacilli appear in the sputum, by careful temperature records kept by the patients themselves, by the use of tuberculin, and by mensuration and spirometry. By doing this much good can be done in the treatment of tuberculosis in the out patient department.

11. **New Needle Holder.** The particular advantages of the instrument devised by Barney are: 1, Curved needles are gripped too securely to turn over; 2, needles are not broken.

New York Medical Journal.

April 7.

12 *Endothelial Spindle-Celled Sarcoma of the Dura Mater Penetrating the Brain. I. W. Blackburn and W. H. Hough, Washington, D. C.
13 Ascending Myelomalacia Caused by a Progressing Venous Thrombosis. M. G. Schlapp, New York.
14 Acute Intestinal Obstruction. H. Lilienthal, New York.
15 *The Vasomotor Factor in Asthma. F. Hare, London, England.
16 *What Causes the Pylorus to Relax? A. L. Benedict, Buffalo.
17 *Treatment of Diffuse and General Peritonitis, with Special Reference to the Murphy Method. J. B. Gibbon, Philadelphia.
18 Functional Heart Murmurs. R. Ellis, New York.
19 Motor Ocular Paralysis as a Complication of Acute Articular Rheumatism. L. Street, Kyoto, Japan.

12. **Sarcoma of Dura Mater.**—In the case described by Blackburn and Hough, the tumor originated from the dura mater just in advance of the sella turcica, and at the posterior inner angle of the orbital plate of the right frontal bone. As it grew upward it penetrated the brain and formed a large cavity in the base, mainly in the orbital surface of the right frontal lobe. In its invasion of the brain it destroyed both olfactory tracts, nearly destroyed the optic nerves and chiasm and thrust the cerebral structures before it, becoming almost wholly imbedded within the brain substance, yet the growth had no organic connection with the brain except slight incorporation with the leptomeninges.

15. **Vasomotor Factor in Asthma.**—Hare states that the meaning and mechanism of many asthmatic paroxysms may be summarized as follows: 1, Hyperpyremia; 2, widespread vasoconstriction compensated for by bronchial vasodilatation, or the converse; 3, vascular distension of the mucosa of the bronchioles; 4, obstructive dyspnea; 5, exaggerated combustion (catabolic expenditure); 6, gradual dispersion of hyperpyremia; 7, cessation of the vasomotor variation; 8, subsidence of vascular distension and asthmatic paroxysm.

16. **Relaxation of Pylorus.**—Benedict summarizes his objections to the acid theory of relaxation and closure of the pylorus as follows: 1. The local changes in reaction are physiologically inevitable. 2. The relative acidity of the chyme is not diminished by the passage onward of a small portion, yet the pylorus does not remain patulous. 3. While this failure of a continuous relaxation of the pylorus may be explained by the distal acidity, it is in close analogy with the action of other alimentary sphincters, which close without any exciting reflex that can be ascribed to differences in chemical reaction. 4. Fully half the stomach contents normally escape before it is conceivable that any great proportion of hydrochloric acid is present. 5. Clinical experience with dietaries shows that, other things being equal, meals that call for considerable hydrochloric acid secretion usually remain in the stomach longer than those which do not. 6. Clinical experience with stomach contents proves conclusively that deviation from the normal standard of hydrochloric acid secretion produces just the opposite effect to that which would be expected if this were the cause of pyloric relaxation. Even in achylia gastrica, there is no necessary abnormality of pyloric function, certainly not in the direction of retention.

17. **Treatment of Peritonitis.**—Gibbon subscribes to the value of the drainage treatment of peritonitis as outlined by Murphy. He believes that the Ochsner treatment of diffuse peritonitis is indicated in every case of appendicitis in which it is impossible to operate immediately, and after the removal of the appendix and the establishment of drainage.

Lancet-Clinic, Cincinnati.

April 7.

20 Asepsis in Obstetrics. J. M. Withrow, Cincinnati.
21 The Borderland of Disease. C. Pope, Louisville.
22 Later History of a Case of Cerebral Abscess. J. C. Oliver, Cincinnati.
23 Mercenary. E. S. M'Kee, Cincinnati.

University of Pennsylvania Medical Bulletin, Philadelphia.

February.

24 *Metrorrhagia Myopathica. R. M. Anspach, Philadelphia.
25 Fractures of the Humerus by Muscular Violence. A. P. G. Ashhurst, Philadelphia.
26 Philip Syng Physick; A Sketch. R. H. Harte, Philadelphia

24. **Metrorrhagia Myopathica.**—Under this term Anspach describes a condition which hitherto has been variously and incorrectly grouped under apoplexia uteri, senile endometritis, and preclimacteric bleeding. It is a symptom dependent on an anatomic or physiologic lesion of the uterine muscle which has not yet been demonstrated. He thinks that the anatomic lesion will probably be found in the elastic tissue constituents of the vessel wall and the subserous and supravascular layers. The physiologic lesion is most likely an insufficient contractile power of the uterus. The condition does not occur in nulliparous women, and, therefore, it must have some connection with the child-bearing process. The uterus is enlarged and softened; the os is patulous. The diagnosis of the metrorrhagica myopathica is only justified when all other possible causes for uterine hemorrhages have been excluded. This is especially urgent in reference to carcinoma. While curettement, atmocausis, etc., have little effect in treatment Anspach states that palliative measures should always be tried before resorting to hysterectomy. Obliteration of the endometrial cavity by means of destructive atmocausis is the alternative of hysterectomy in these cases. It is harder to perform correctly, however, and is more dangerous than hysterectomy, which is the operation of choice.

Bulletin of the American Academy of Medicine, Easton, Pa.
February.

27 *Influence of Recreation on the Individual and the Community. G. W. McCaskey, Ft. Wayne, Ind.
28 *Recreation in Its Effects on the Nervous System. W. J. Herdman, Ann Arbor, Mich.
29 *Ceremonials and Festa in the Recreation of Larger Groups of Individuals. B. Holmes, Chicago.
30 *Relation of Recreation to Education. R. K. Row, Berwyn, Ill.
31 *Recreation as a Sociologic Factor. D. C. Hawley, Burlington, Vt.
32 *Medical Features of the Papyrus Ebers. C. H. v. Klein, Chicago.

27-31.—See abstracts in The Journal, Nov. 25, 1905, pages 1684-1685.

32.—See article in The Journal, Dec. 23, 1905, page 1928.

Archives of Pediatrics, New York.
March.

33 Citrate of Soda In Infant Feeding. H. L. K. Shaw, Albany, N. Y.
34 Barlow's Disease (infantile scurvy) in the Island of Cuba. J. L. Duenas, Havana, Cuba.
35 *Hypertrophic Stenosis of the Pylorus, Operation, Recovery. J. Rogers and J. Howland, New York.
36 *Fat Problems and Goat's Milk in Infant Feeding. J. F. Bell, Englewood, N. J.
37 Diagnosis and Treatment of Chronic Polyarticular Diseases in Childhood. P. W. Nathan, New York.

35. **Hypertrophic Stenosis of Pylorus.**—Rogers and Howland report a successful operation on an infant three months of age, suffering from hypertrophic stenosis of the pylorus. The symptoms were typical. A posterior gastrojejunostomy, without a loop, was carried out with sutures. The length of the operation was twenty-five minutes.

36. **Fat Problems in Infant Feeding.**—As the result of clinical observation and experimentation Bell concludes that the digestion of fat retards the flow and diminishes the amount of gastric juice, at the same time lowering its digestive power. The ingestion of fluid oil increases the flow of pancreatic juice and probably the activity of its fat-splitting enzyme, steapsin. In case the fat is not fluid at body temperature, he states, it may still further retard and prevent the flow of gastric juice, coating over the gastric mucous membrane, thereby mechanically interfering with secretion. In the case of coagulable food, such as caseinogen, it may cover the curds with a layer of insoluble fat, thereby preventing the action of gastric juice on them, though the juice be secreted in sufficient amount and power, and also by preventing the action of the trypsin on them, though brought in contact with an increased supply of pancreatic juice, assuming that the action of the steapsin on the fats will be partially *nil*, or at least much impeded by the insolubility of their fat-covering permitting the curds to pass undigested. If goat's milk fat more closely approximates human milk fat than that of cow's milk, and if the proteid and sugar constituents are not more incompatible than in cow's milk and if there exists no serious commercial obstacle, goat's milk merits an extensive and thorough clinical trial in infant feeding.

The Ohio State Medical Journal, Columbus.
March 15.

38 *Phases of Civil Liability of Physicians and Surgeons and Remedies Therefore. E. B. Kinkead, Columbus.
39 *Need of Patent Medicine Legislation. T. Sollmann, Cleveland.
40 Removal of Foreign Bodies. J. M. Leslie, Chillicothe.
41 A Type of Appendiceal Abscess. C. A. Hamann, Cleveland.
42 Direct Inspection of the Esophagus and the Bronchial Tubes. E. L. Stillman, Columbus.
43 Medical Organization. B. H. Blair, Lebanon.
44 Prostatic Hypertrophy. T. G. Youmans, Columbus.

38. **Civil Liability of Physicians.**—Kinkead discusses many legal questions and in closing speaks briefly of "patent medicine." He says that it is the duty of medical men to cast aside some of that modesty which pervades the profession, come out in the open, and make war on "patent medicines." They owe it, he declares, to the people as well as to themselves. He thinks that to require a license of physicians before they can practice and at the same time to permit irresponsible persons to flood the state with worthless and injurious "patent medicines" is not consistent. The idea of surrounding a remedy with secrecy and exclusiveness is ridiculous. To permit citizens to take medicines on the printed directions of some unknown person, or of some person who is dead, without knowing whether it is what they need, is unfortunate, he says, and should not be permitted.

39. **Need of "Patent-Medicine" Legislation.**—Sollmann urges that the medical profession support any measure tending to the improvement, regulation and enforcement of the poison laws. However, great caution is necessary to keep out all sort of restrictions and omissions which would greatly lessen the effectiveness of these laws. The only practical remedy is complete publicity as to all the active ingredients of a medicine. That takes the moral responsibility from the shoulders of the manufacturer and places it on the consumer, who will be the chief sufferer if he disregards the warning. Sollmann points out that the passage of a formula law would make the druggist a morally responsible agent in the "patent-medicine" traffic, a result which Sollmann considers is desirable.

Medical Fortnightly, St. Louis.
March 10.

45 Adenoids. H. Stolte, Milwaukee.
46 *Use and Abuse of the Rest Treatment. F. P. Norbury, Jacksonville, Ill.
47 Acute Catarrhal Dysentery with a Report of Forty-six Cases. R. B. Chamlee, N. Birmingham.
48 Early Diagnosis of Tuberculosis. C. R. Russell, Keosauqua, Iowa.
49 Pain. J. T. Reddick, Paducah, Ky.
50 *Stomach Drainage in Long-Continued Indigestion. J. R. Maxwell, Keokuk, Iowa.

March 26.

51 *Use of Simple Hydrotherapeutic Means in the Treatment of Chronic Nephritis. A. C. Croftan, Chicago.
52 Heredity; Its Influence on Diseases of Children. F. M. Fuller, Keokuk.
53 Public Health. D. C. Brockman, Ottumwa.
54 Diagnosis and Treatment of Diseases of the Right Upper Abdominal Cavity. B. M. Ricketts, Cincinnati.

46. **Rest Treatment.**—The use of this method in the treatment of over 400 patients has fully convinced Norbury of its value. He urges, however, that to be successful its technic must be carried out just as carefully as is the technic of the surgeon when he operates. Each factor of the treatment must be considered and none left out, for it is the treatment as a whole which accomplishes results. These factors are isolation, rest, massage, electricity, diet, an educated, tactful nurse, a hopeful, healthful, optimistic physician and a suitable, wholesome, restful environment.

50. **Stomach Drainage in Chronic Dyspepsia.**—Maxwell cites three cases as proof that certain cases of long continued dyspepsia are not amenable to internal medicine, but can be cured by gastroenterostomy, the choice of the operation being left to the physician in charge.

51. **Hydrotherapy in Chronic Nephritis.**—Croftan attempts to show that such simple measures as hot bathing, properly administered, and the application of heat or cold to various portions of the body, can accomplish much in the treatment of the nervous, metabolic, gastroenteric and cardiovascular manifestations of nephritis. A judicious selection of the diet, especially with the end in view of maintaining adequate nutrition, is an indispensable adjuvant to treatment, for otherwise the organism can not maintain those reactive and reconstructive powers that alone can bring about an amelioration of the disease, and, as far as that may be possible, a restitution to normal. Drugs, on the other hand, in Croftan's opinion, should be given very sparingly in chronic nephritis. They should always be reserved as an emergency measure and hydrotherapeutic means should replace them whenever possible.

Medical Examiner and Practitioner, New York.
March.

55 *Significance of Albumin and Casts When Found in the Urine of Apparently Healthy Applicants for Life Insurance. E. W. Dwight, Boston.
56 Significance of the Commoner Microscopic Findings in Urinary Sediments. L. N. Boston, Philadelphia.
57 Albuminuria. P. F. Barbour, Louisville.

55. **Significance of Albumin and Casts in Healthy Individuals.**—Dwight believes that albumin in minute traces is not only frequently found in normal urine, but is a normal constituent of the urine. After severe exercise or mental strain, and under certain other conditions, it is constantly found in traces in

individuals who give every other positive evidence of being in good health. In 600 cases of so-called renal albuminuria, hyaline and finely granular casts were detected in 93.8 per cent. Dwight thinks that as we know there must be albumin to some extent in all cases which present renal casts, so we are justified in the assumption that in all cases in which the albumin is of renal origin, casts might be found if the search for them is prolonged and sufficiently accurate. He takes the position that the finding of a true renal hyaline cast indicates that the albumin in the urine, or at least a part of it, is of renal origin. A decision should not be based on the finding of albumin and casts in the urine.

Journal of the South Carolina Medical Association, Charleston.
March.

58 Modern Mastoid Operation. E. W. Carpenter, Greenville.
59 A Retrospect of Fifty Years' Progress in Medicine. M. J. D. Dantzler, Elloree.
60 Contracted Pelvis Relieved by Cesarean Section. C. B. Earle, Greenville.
61 *Veratrum Viride. L. B. Bates, St. Matthews.
62 Tuberculous Peritonitis. H. L. Wilson, Jordan.

61. **Veratrum Viride.**—Bates records his experiences with this drug, which he regards as the only remedy for continuous abnormal vascular tension. He has found it very satisfactory in the first stage of pneumonia, influenza, and bronchitis, in combination with morphin and sweet spirits of niter. In a very aggravated case of traumatic chorea from granular erosion of the cervix uteri which had resisted the usual routine remedies, fifteen drops of veratrum, at intervals of fifteen minutes, until three doses were given, afforded prompt relief. In the toxemia of eclampsia its use also was attended by success. After giving a good mercurial purge Bates injects from 25 to 30 drops of Norwood's tincture at intervals of thirty minutes until he secures complete muscular relaxation, when the convulsions generally cease in all cases unless there is cerebral traumatism. Shortly after the relaxation nausea and vomiting occur. He allows this to continue until he thinks the full physiologic effect of the veratrum has been exerted. Then he injects from ¼ to ½ grain of morphin to allay the vomiting.

The Journal of Infectious Diseases, Chicago.
March 2.

63 Bacteriology of Whooping Cough. D. J. Davis, Chicago.
64 *Studies on Human Parasites in North America. I. Filaria Loa. H. B. Ward, Lincoln, Neb.
65 *Disseminated Blastomycosis. P. Bassoe, Chicago.
66 Rôle of Phagocytosis in the Anthracidal Action of Dog Blood. L. Hektoen, Chicago.
67 Anthracidal Substance in the Serum of White Rats. J. M. Horton, Chicago.
68 Adjuvant Action of Serum, Egg Albumin, and Broth on Tetanus Intoxication. H. T. Ricketts and E. J. Kirk, Chicago.
69 Further Studies on Virulent Pseudodiphtheria Bacilli. A. Hamilton, and J. M. Horton, Chicago.
70 Identity of Fusiform Bacilli and Spirilla. R. Tunnicliff, Chicago.
71 Further Studies on Streptococcus Infections. G. F. Ruediger, Chicago.
72 Etiology of Pemphigus Contagiosus in the Tropics. M. T. Clegg and W. B. Wherry, Manila, P. I.

64. **Filaria Loa.**—In this paper, to which is appended a very full and instructive bibliography, arranged alphabetically, Ward reviews all the cases of *Filaria loa* on record, adds two new cases, and describes very fully the morphology and pathology of this organism.

65. **Disseminated Blastomycosis.** Bassoe reports a case of blastomycosis involving the lungs, lumbar vertebræ and subcutaneous tissues with multiple abscesses and fistulas and extensive amyloid degeneration. A full summary of the results of the gross and microscopic examination made after the death of the patient is given.

Annals of Surgery, Philadelphia.
March.

73 Frontal and Ethmoid Sinus Empyema. H. P. Moseley, New York.
74 Anatomy of a Case of Cystic Adenoma of the Thyroid. W. Keller, Galveston, Texas.
75 *Results of the Surgical Treatment of Exophthalmic Goiter. R. F. Curtis, New York.
76 A Toy Bicycle in the Esophagus. Removal by Esophagotomy. H. M. Rigby, London.
77 *Overlapping the Aponeuroses in the Closure of Wounds of the Abdominal Wall. C. P. Noble, Philadelphia.
78 Foreign-body Pseudo-Tuberculosis in the Peritoneum. C. M. Cooper, San Francisco.
79 Solid Tumors of the Mesentery, with report of case. J. Vance, El Paso, Texas.
80 *Chylous Cysts of the Mesentery. M. F. Porter, Ft. Wayne.
81 Perforating Duodenal Ulcer. J. M. Elder, Montreal.
82 Practical Points in the Surgery of the Large Bowel, Exclusive of the Rectum. C. B. Nancrede, Ann Arbor.
83 *Method of Permanent Drainage of Both Kidneys Through the Loin in Connection with Bilateral Nephrostomy. F. S. Watson, Boston.
84 *Contribution to the Surgery of the Kidney. G. Barling, Birmingham.
85 *New Method of Excision of the Knee Without Opening the Joint. C. P. Flint, New York.
86 Effect on Glandular Tissue of Exposure to the X-Rays. W. J. Taylor, Philadelphia.

75. **Surgical Treatment of Exophthalmic Goiter.**—In addition to the advice to divide the operation by performing preliminary ligation of the arteries and to use local anesthesia, Curtis adds that it is advantageous, if not absolutely necessary, to have the preliminary treatment by rest in bed, ice bag to the heart, bromids, etc., carried out at the hospital where the operation is to be done, in order that the patient may learn to know and trust the surgeon, to like the nurses, and to become familiar with her surroundings. This adds greatly to the efficiency of the control of the patient under local anesthesia. Of 14 patients operated on, 4 died, all from acute thyroidism. Of the 10 patients who recovered from the operation, one improved, but has not been seen since. One was improved for two years, relapsed, later had one artery tied on the other side with improvement, and again relapsed. Eight patients are said to be practically cured, having been followed for six months (two cases), eighteen months, two years, five years, seven years, eight years and twelve years, respectively. Two of the cases were slight, but the rest were serious, and some patients were in a dangerous condition. The four patients who died were all advanced cases. These results are encouraging, and partial thyroidectomy has apparently yielded better results than sympathectomy. In one of his cases the latter method has effected a practical cure after a relapse following thyroidectomy. On the other hand, a relapse, with fresh enlargement of the thyroid, occurred in one case after sympathectomy, and, perhaps, a thyroidectomy would have brought about a cure here had it been possible to get the patient's consent. A temporary improvement was obtained in one of the relapsed cases by ligation of one artery on the other side, the improvement lasting two years or more.

77. **Overlapping the Aponeurosis in Closure of Abdominal Wounds.**—Noble describes his method, which was first published in 1897, and directs attention to the fact that during the nine years in which the method has been in use but a single patient has presented herself with a postoperative hernia.

80. **Chylous Cysts of Mesentery.**—The basis of Porter's paper consists of a study of the literature on the subject, including the reports of 19 cases which he has been able to collect, together with one case which occurred in his own practice. A diagnosis of appendicitis had been made. On opening the abdomen through the right rectus muscle a group of chylous cysts was found together with a volvulus involving that portion of the ileum attached to the mesentery in which the cysts were found. The bowel and mesentery containing the cysts were excised and an end-to-end anastomosis was made with the aid of a Murphy button. The patient died on the morning of the seventh day. A postmortem examination showed leakage at the mesentery attachment at the point of anastomosis.

83. **Permanent Drainage of Kidneys.** The following article comprises the apparatus designed by Watson for draining the kidneys: 1. Two red-rubber drainage catheters. 2. Two bits of rubber drainage tube, each two and a half inches long more or less, according to the thickness of the patient's back), and of a size to fit tightly on the catheters and in the horizontal opening of the shield through which they are passed. 3. Two hard rubber shields about three inches in length, two inches wide, and curved to fit the back. There are three openings in each of the shields, two perpendicular and one horizontal; the latter should be a little narrower than the rubber tubing in order that it may compress the tubing firmly enough to prevent it, and the catheter which passes through it, from slipping to and fro. The former are long enough to admit tapes an inch wide. 4. Two pieces of strong

tape or elastic webbing. One end of this tape is attached to the outer of the two perpendicular openings in the plate. The tape should be long enough to pass around the body and is secured in the opening at the further end of the shield by a safety-pin, or such other device as may be preferred. Elastic bands have the advantage, as compared with tapes, of adapting themselves to the movements of the body and thus keeping the shield constantly apposed to the back. 5. A waistband long enough to go around the body and four inches wide. This band should be of stout material; its front ends are brought together by a couple of straps and buckles; on the lower border of the back of the waistband are attached four stout hooks, and there are two holes to allow the catheters to be led through the band. 6. Two flasks, 5 inches long by 4 inches high by 1½ inches wide, curved to fit the gluteal region; each having a nozzle projecting one inch above the middle of its top and just large enough to admit the ends of the catheters, and provided with a ring firmly soldered near either end of the inner side of the tops of the flasks. The flasks may be made of hard rubber, aluminum or any other suitable material having a surface that will not absorb urine. The *modus operandi* for employing the apparatus is given in detail, and for this part of the paper the reader is referred to the original article.

84. **Surgery of the Kidney.**—Barling reports six cases of disease of the kidney requiring nephrectomy. The six patients are alive and well. The conditions requiring the removal of the kidney were hypernephroma, pylonephritis and ureteritis, intermittent hydronephrosis, with extreme mobility of the kidney were hypernephroma, pyelonephritis and ureteritis, pyonephrosis simulating hepatic tumor, and pyonephrosis with large perinephritic suppuration due to renal calculus. The ages of the patients were 50, 26, 35, 25, 35 and 58 respectively. The first patient was operated on March 1, 1905, and the last Oct. 7, 1905.

85. **New Method of Excision of Knee Joints.**—Flint describes a method of excision of the knee joint which he thinks combines all the advantages of other methods without possessing any of their disadvantages. The skin incision should be rectangular, the two vertical cuts being well back at the sides of the leg, extending from a little above the level of the upper limit to the subcrural bursa to one inch below the joint line. These two vertical incisions are connected across the front of the tibia by a transverse incision. This rectangular skin flap with the subcutaneous tissue is reflected upward. The next incision is curved, the concavity upward. It starts in the vastus internus a little above the upper limit of the subcrural bursa and is carried down and outward in the direction of the muscle fibers to the tendon of the quadriceps extensor one-half inch above the patella, and from here upward and outward in the direction of the fibers of the vastus externus to a point corresponding to the beginning on the inner side. The muscle with the tendon is completely divided and turned upward, thus exposing to view the subcrural bursa. Two small incisions are made on either side of the femur, starting on each side of the patella in the incision just described, and carried downward and backward to the joint line. The one on the inner side divides the tendinous expansion of the quadriceps, the one on the outer side the tendinous expansion and part of the ilio-tibial band. After completing these incisions the subcrural bursa is separated from the femur with the knife and turned down, tilting the patella when not adherent.

The last incision in front is carried transversely across the front of the tibia down to the bone just below the joint line. On the inner side the sartorius and gracilis are pushed back; on the outer side of the biceps and peroneal nerve. A flat retractor, about one inch wide, is introduced on the inner side behind the head of the tibia close to the joint line. It is first introduced vertically between the gracilis and sartorius on one side and the tibia on the other. These muscles are pried off and the retractor is brought to a horizontal plane, the apex passing behind the tibia. This retractor is now pushed outward, always close to the bone, until it emerges at the outer side. All soft parts are thus held back.

The next step is to saw through the tibia as close to the joint as circumstances seem to warrant, the leg being still flat on the table; the retractor being in place protects the soft parts. The saw-cut through the head of the tibia is used as a joint. The femur is flexed on the body, the leg on the femur, and with a large knife the soft parts are quickly separated from the posterior structures of the joint. By a little downward traction on the leg, combined with the pull of its own weight, injury to the vessels is easily avoided. As soon as the posterior region of the condyles is exposed the femur is sawn through from behind forward and slightly downward at a level sufficient to clear the cartilage behind. This saw-cut is carried forward until it reaches the margin of the cartilage on the anterior surface of the femur, and the saw is then withdrawn. The direction of this cut should be downward and forward, so as to lose as little as possible of the femur and to obtain the desired slightly flexed position of the bones subsequently. After withdrawing the saw from the femur the leg is once more placed in a horizontal position. The saw is introduced behind the subcrural bursa at the upper margin of the articular cartilage on the front of the femur and a cut made which will meet the anterior limit of the horizontal saw-cut made from behind. This last cut is almost vertical, in the coronal plane, and allows the articular portion of the femur which extends upward in front to be removed with the joint. This is the last step of the incision proper, for it is now possible to lift out the joint with the patella and subcrural bursa, the articular surfaces of femur and tibia, all complete without having opened the joint. On removal of the tourniquet the bleeding points can be quickly clamped and tied, thereby reducing hemorrhage to a minimum. The subsequent steps of the operation differ in no way from those hitherto customary.

Surgery, Gynecology and Obstetrics, Chicago.

March.

87 The Free Interval in Meningeal Hemorrhage. F. G. Connell, Salida, Colo.
88 Obstetrical Dilatation of the Cervix. Dührssen, Berlin.
89 *Uniterminal and Biterminal Venous Transplantations. A. Carrel, and C. C. Guthrie, Chicago.
90 Preoperative Thrombi in the Region of the Field of Operation as a Cause of Postoperative Complication and Death. A. W. Abbott, Minneapolis.
91 Carcinoma of the Descending Colon. W. W. Grant, Denver.
92 Ectopic Decidua Formation. F. J. Taussig, St. Louis.
93 *Extensive Separation of the Periosteum in Displaced Bone Fragments. C. Beck, New York.
94 Case of Gluteal Cavernous Angioma. J. E. Summers, Jr., Omaha.
95 *New Method of Lateral Anastomosis. A. Werelius, Chicago.
96 *Technic of Operation for Empyema Used in Van Hook's Clinic. H. M. Richter, Chicago.
97 Technic of Abdominal Hysterectomy for Fibroids of the Uterus. F. H. Martin, Chicago.

89. **Venous Transplantations.**—As a result of a series of experiments performed on dogs, Carrel and Guthrie found that uniterminal and biterminal transplantations of veins on arteries produce, from a functional point of view, the transformation of veins into arteries. These arteriovenous anastomoses adequately transmit the blood indefinitely. After seven months the circulation through such an anastomosis is apparently as active as on the day of the operation.

93. **Separation of Periosteum.** Beck calls attention to periosteal bands which often may be seen, if looked for with the radiograph, extending from a bone fragment after a fracture. These periosteal bands are likely to be the cause of much trouble, so that the process of healing may become in itself a disease. He advises the removal of all miniature fragments and of such portions of periosteum as protrude beyond the point of fracture.

95. **New Method of Lateral Anastomosis.**—This method is described in full in The Journal, Oct. 22, 1904, page 1230.

96. **Operation for Empyema.**—For the operation described by Richter local anesthesia is sufficient, preferably by the method of Schleich. The operation consists of a rib resection with the formation of a large opening for drainage of the pleural cavity. The device employed for this purpose consists of a Bunsen pump, a Woulf bottle to take up the discharge and to which a mercury manometer is attached to measure the degree of tension and to act as a safety valve against too strong tension, and a drainage tube passed through a sheet of rubber. The method is illustrated and described in detail.

Journal of the Minnesota Medical Association and the Northwestern Lancet, Minneapolis.

March 15.

98 Diaphragmatic Hernia. W. A. Dennis, St. Paul.
99 Accurate Determination of Errors of Refraction Without Cycloplegia, by Means of Astigmatic Charts. C. N. Spratt, Minneapolis.
100 Extrauterine Pregnancy. J. W. Andrews, Mankato.
101 Intestinal Perforation in Typhoid Fever. W. Courtney, Brainerd.
102 Case of Pseudo-Pterygium and Symblepharon Relieved by the Use of Thiersch Grafts. W. R. Murray, Minneapolis.

Cleveland Medical Journal.

March.

103 Status Lymphaticus, with Death Under Ether Anesthesia. A. F. Furrer, Cleveland.
104 Heart Disease as a Complication of Pregnancy and Labor. F. S. Clark, Cleveland.
105 Splenomegalic Type of Hypertrophic Cirrhosis. N. M. Jones, Cleveland.

Pacific Medical Journal, San Francisco.

March.

106 Random Notes from an Alkaloidal Practice. R. J. Smith, Smithfield, Utah.
107 Dietary and Hygienic Treatment of Bright's Disease, Diabetes Mellitus and Pulmonary Consumption. B. F. Felch, Chicago.
108 Directions for Collecting Information and Objects Illustrating the History of Medicine. J. M. Flint, Washington, D. C.
109 An Inquiry in Regard to Mental Phenomena Connected with Anesthesia. J. Jastrow, Milwaukee.

Buffalo Medical Journal.

March.

110 Gastrojejunostomy. A. B. Miller, Syracuse, N. Y.
111 Infantile Indigestion. A. A. Young, Newark, N. Y.
112 Non-surgical Treatment of the Prostate in Emergency Cases. J. H. Dowd, Buffalo.
113 Foreign Body in the Lung. F. E. Fronczak, Buffalo.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

March 24.

1 The Cystoscope. D. Newman.
2 *Anesthetics and Renal Activity. W. H. Thompson.
3 *Treatment of Cicatricial Strictures of the Urethra with the Electrolytic Needle. S. B. Selhorst.
4 Intracranial Hemorrhage in the Newborn. J. C. Turnbull.
5 *Ascaris Lumbricoides and Appendicitis. F. E. Anley.

2. **Anesthetics and Renal Activity.**—In this, the second part of his report, Thompson considers ether, the A. C. E. mixture, and the ether chloroform mixture. During ether narcosis the volume of urine secreted was diminished in the majority of his experiments. The depressing effect of ether, he states, is more marked than that of chlorform, and complete arrest of secretion occurs more readily. The after-effect is also similar to that of chloroform, but, as a rule, it is less marked. The maximum outflow of urine occurs about three hours after removal of the anesthetic. The effect of ether on the output of nitrogen corresponds more closely with its influence on the outflow of urine than is the case with chloroform. The urine when diminished in volume is, as a rule, more concentrated (contains more nitrogen). The converse was the case in the chloroform experiments. In ether narcosis, when the curves of urine outflow, kidney volume and blood pressure are compared there is found to be a closer correspondence than is the case with chloroform. The escape of leucocytes into the urine is also more marked with ether than with chloroform, probably indicating a higher degree of stasis in the glomerular capillaries. The excretion of chlorids is increased, but it is less and of shorter duration than in the case of chloroform.

During full narcosis with the A. C. E. mixture the outflow of urine is diminished, but to a less degree than with either chloroform or ether; the excretion of nitrogen is less depressed than the volume of urine; the effect on the concentration of urine alternated between those of chloroform and ether; the chlorids were increased to a less degree than with chloroform, but to a greater degree than with ether. The full influence of the ether-chloroform mixture produces a diminution of urine less than that of ether, but more than that of chloroform. The excretion of nitrogen is less influenced than that of urine. The urine of the anesthetic period was more concentrated than normal, and the chlorids were increased, but to a less degree than with any of the previous anesthetics. The effect of the mixture closely resembled that of ether.

3. **Electrolysis in Treatment of Cicatricial Strictures.**—After the dilatation of the stricture and a thorough and minute irrigation of the urethra with a solution of a mercuric preparation, Selhorst inserts an Oberlaender's urethroscopic tube, passing along the whole length of the stricture. In examining the urethra the tube is withdrawn slowly until the surface of the constriction is shown in the opening. The needle, ending in a strong platinum point from 1.5 cm. to 2 cm. in length, isolated almost quite close to its point, is forced to a depth of from 0.5 cm. to 1 cm. into the fibrous tissue according to the dimension, thickness, and hardness of the tissue. The needle is the negative pole of a galvanic battery, the positive pole of which, a large moistened, wetted disc, is placed on the thigh or on the abdomen. The electric current of from 4 to 6 milliamperes is turned on for three minutes. Before withdrawing the needle Selhorst interrupts the current, and drives the needle into another part. This operation may be repeated four or five times during a sitting, and, if executed by an expert hand, is said not to be very painful. During the whole period of treatment a bougie is introduced once a week, followed by an irrigation with a nitrate of silver solution to promote reabsorption, and to maintain the passage of the urethra at the size required. The number of the sittings depends on the extent of the stricture as well as on its thickness and hardness.

5. **Ascaris Lumbricoides and Appendicitis.**—Anley reports two cases, the history of which was typical of a catarrhal appendicitis. Both patients passed a round worm and from that moment began to improve, making an uninterrupted recovery.

The Lancet, London.

March 24.

6 Distribution and Recovery of Peripheral Nerves Studied from Instances of Division in Man. J. Sherren.
7 *Biliary Calculi. E. S. Bishop.
8 *Post-Traumatic Hemorrhage from the Superior Longitudinal Sinus Without Fracture of the Skull. E. F. Buzzard and J. Cunning.
9 Fatal Case of Septic Thrombosis of the Lateral Sinus, Secondary to Chronic Otitis Media Purulenta. J. S. Barr.
10 Two Cases of Arrested Development of the Rectum. H. S. Forsdike.
11 *Therapeutic Effects of Mercury in a Case of Tuberculous Meningitis. W. H. W. Brown.
12 *Treatment of Internal Hemorrhage by the Use of Drugs. W. E. Dixon.

7. **Biliary Calculi.** Bishop cites a number of cases which illustrate the difficulties of diagnosis encountered in actual practice, and the means which at the present time are most useful in differentiation.

8. **Hemorrhage from Superior Longitudinal Sinus without Fracture.**—Buzzard and Cunning attribute the hemorrhage in this case to the tearing away of a tributary vein, from its junction with the sinus, at the time of the accident. The search of the literature failed to reveal a similar case.

11. **Mercury in Tuberculous Meningitis.** Brown records the beneficent effect of munctions of mercurial ointment, and mercury, combined with the iodin and bromid of potassium, by the mouth in an unusually severe case of tuberculous meningitis. He is convinced that there are occasional cases of apparently genuine tuberculous meningitis that are cured by mercury, especially if the inunction is commenced early, if it is pushed, and if the patient's strength is maintained.

12. **Treatment of Internal Hemorrhage.** Dixon endeavors to show that the tannins, adrenalin, digitalis and its allies, ergot, veratrine, barium and lead are all worse than useless in the treatment of nosebleed or hemorrhage from the brain or the liver. Calcium, in his opinion, is the drug for that purpose, administered preferably in the form of the chlorid. In urgent cases the drug should be given subcutaneously. For this purpose the calcium chlorid should be neutral and injected deeply, in one or two grain doses, into subcutaneous tissue, so that the local irritant action of the drug may be avoided

Annales de l'Institut Pasteur, Paris.

Last indexed, page 917.

13 (XX, No. 2.) Les Pasteurella. Chamberland and Jouan.
14 *Etudes sur la fièvre jaune (yellow fever). E. Marchoux and P. L. Simond.
15 De l'anti-endotoxine typhique. Besredka.
16 La culture des microbes anaérobies appliquée à l'analyse des eaux. A. Guillemard.

14. **The French Yellow Fever Commission.**—This article is the third published by the French yellow-fever commission to Brazil. It describes experimental research in the biology of the *Stegomyia fasciata*. It was found that the female mosquito is capable of biting man from the first days of its adult existence, but that it very soon ceases to bite during the day, especially after it lays its first batch of eggs. The result is that under normal conditions the transmission of yellow fever does not occur during the day, that is, between 7 a. m. and 5 p. m. The ingestion of living blood is indispensable for the development of the eggs. The blood loses this property of favoring the development of the eggs if it stands even a short time. The stegomyia is capable of laying several batches of eggs, sometimes as many as seven, after a single coupling, on condition that blood be ingested anew after each laying. As a rule the stegomyia lays two or three times. It is this faculty of surviving to lay several batches of eggs which distinguishes the stegomyia and permits it to be the vehicle for the transmission of yellow fever. In children yellow fever runs a very mild course. The mortality is nearly zero during the first year of life, and is very low up to adult age. Abortive or "frustes" cases are noted at all ages, but are the rule in children. They confer immunity, however, although the durability and strength of this immunity vary with individuals. It may be re-enforced by recurrences. Recurrence of yellow-fever probably happens oftener than is generally recognized. It may escape observation on account of the extreme mildness of the symptoms, although a recurrence is liable sometimes to be a serious affair. Relapses are rare. When they occur they are generally very severe.

Presse Médicale, Paris.

17 (XIV, No. 11.) *L'hépatalgie des asthmatiques. A. Gilbert and M. Villaret.
18 Innervation de la vésicule biliaire (gall bladder). J. P. Langlois.
19 Comment on peut administrer la valérianc. A. Martinet.
20 (No. 12.) Des colloïdes. Définition. Importance de leur étude pour la biologie et la thérapeutique. H. Iscovesco.
21 Le bacille fluorescent liquéfiant dans diverse affections de l'appareil broncho-pulmonaire. Ferry and A. Mandoul.
22 *Des bonnes ampoules en radiothérapie (good tubes). H. Noiré.
23 (No. 13.) L'albumine dans l'alimentation des tuberculeux. H. Labbé and G. Vitry.
24 L'intoxication saturnine et le traitement de la colique de plomb. Delearde and E. Dubois.
25 *La méthode de Bier et le massage dans les contusions et les entorses (sprains). R. de Gaulejac.
26 (No. 14.) *Les prétendus symptomes de l'hémiplégie hysterique. J. Ingegnieros (Buenos Ayres).
27 *Les injections profondes dans le traitement de la névralgie faciale rebelle. F. Lévy and A. Baudouin.
28 (No. 15.) De la rétroversion utérine. Le Dentu.
29 *Danger de l'ingestion de bacilles tuberculeux tués par la chaleur (killed by heat). A. Calmette and M. Breton.

17. **Pain in the Liver in Asthmatics.**—Gilbert and Villaret call attention to the pain distinctly localized in the liver region which may be observed in some cases of asthma, the exacerbations of the pain corresponding with the attacks of asthma. This hepatalgia may occur at any stage of asthma, although less pronounced in its early phases. It may become so severe as seriously to incommode the patient. They relate the particulars of three cases of this kind; the patients had all reached the stage of emphysema. The pain in the liver region had been long observed; it was increased by pressure, but was not accompanied by any appreciable enlargement of the organ. They attribute the condition to congestion of the liver from impending asystelia. The cholemic condition of their patients, the persistence of the pain between the attacks of asthma, its resistance to all the usual therapeutic measures, and the prompt relief after blood-letting, are a train of symptoms revealing passive congestion on the part of the parenchyma of the liver. When the congestion has continued until there is destruction of part of the liver tissue and of the nerve terminals, the organ becomes less sensitive. In 2 cases the patients were relieved of the hepatalgia by absolute repose, a milk diet and venesection or wet-cupping. In one case the hepatalgia had been noted for fifteen years.

22. **Good Tubes for Radiotherapy.**—Noiré describes the requisites for a good tube in radiotherapy He remarks in conclusion that in Sabouraud's service, where more than six thousand sittings have been given the best results were invariably attained with an anticathode of platinum or some other metal, but always re-enforced, the glass very thin, and the tube not more than 8 cm. in diameter.

25. **Passive Congestion and Massage for Sprains and Contusions.**—De Gaulejac reports remarkably rapid healing of sprains treated with Bier's technic for artificial hyperemia. It relieved the pain much better than other measures and the after-results were unusually fine. Constriction of the limb induces dilatation of the vessels and a hyperphagocytosis which produces excellent conditions for massage to complete the cure. Constriction is applied for only from fifty to sixty minutes on the first day as it is liable to increase the pain at first. The sittings are prolonged to an hour or two on the following days. When the tourniquet is removed the injured member is massaged for ten or fifteen minutes and a flannel band wrapped lightly around it. When the lesion is on the trunk Gaulejac applies cupping around the lesion. Immobilization is imperative in all cases. He commends this combination of passive congestion and massage as a great advance in the treatment of sprains and of slight or moderate contusions.

26. **Signs of Hysteric Hemiplegia.**—Ingegnieros reports a case of hemiplegia, which presented all the signs of an organic affection, and yet the symptoms altered under hypnotic suggestion and finally yielded entirely to simple psychotherapy.

27. **Deep Injections of Alcohol in Treatment of Facial Neuralgia.**—Levy and Baudouin describe their technic for injecting the nerves at their emerging points and relate that this procedure is proving a perfectly harmless and effectual means of treating rebellious facial neuralgia. (See abstract 34, page 390.) After considerable experimental and clinical research they have adopted the following dosage: They inject 1 or 2 c.c. of alcohol, first at 70, then at 80, and then at 90 per cent., with or without cocain. They then add four drops of chloroform to each c.c. and repeat the procedure. They use a special needle which has a sharp point, but also has a blunt guide inside which can be adjusted to project beyond the sharp tip of the needle and to transform it into a blunt tip. This can be pushed into the tissues without danger of injury. They describe the technic for inserting the needle so as to reach the trunk of the inferior maxillary as it emerges from the foramen ovale, also the superior maxillary at its emerging point and the ophthalmic nerve. From six to eight injections are generally needed. They are given at intervals of three or four days. Experience has demonstrated that it is necessary to inject at least two of the branches of the trigeminal. These deep injections of alcohol have been used by these authors in six cases of extremely severe trigeminal neuralgia with almost continuous pains, accompanied by muscular twitchings, and of several years' duration. Medical treatment had long ceased to relieve and two operations on the peripheral nerves in one case had been unsuccessful. None of these patients has any further neuralgia. Four others still under treatment are very much improved. None of the cases in which the neuralgia was mild or of recent development is included in this report. The simplicity and harmlessness of the method commend it for general adoption, they say, even if recurrence should be observed later in some cases. Allaeys of Antwerp has been equally successful with 3 cases of old, rebellious neuralgia, while Ostwalt, Schlösser and others now number their cures by the hundreds.—Ed.]

29. **Danger from Ingestion of Tubercle Bacilli Killed by Heat.**—Calmette and Breton announce that guinea-pigs after experimental tuberculosis infection, either by the mouth or by intraperitoneal injection, succumbed much sooner than the controls under repeated ingestion of small amounts of tubercle bacilli killed by boiling. The repeated ingestion of tubercle

bacilli killed by boiling caused disturbances even in sound guinea-pigs, the symptoms observed resembling those induced by several small doses of tuberculin at intervals of a few days in non-tuberculous animals. Experiments are now under way to determine whether these same conclusions apply to larger animals, cattle and goats. Enough has already been learned, however, to warrant the statement that tuberculous products, even when sterilized by heat, are liable to be dangerous for persons already infected with tuberculosis, and may not be entirely harmless even for healthy persons. Milk from tuberculous cows, therefore, should not be used, even after thorough boiling, as this does not render it entirely harmless. Its use should be absolutely forbidden for children and for tuberculous adults. In conclusion Calmette and Breton add that these new facts should impel the powers that be to exercise still stricter supervision over dairy farms and to insist on the systematic use of the tuberculin test. Calmette published last October an announcement that experimental ingestion of bovine tubercle bacilli, even in small doses, repeated two or three times, entailed the tuberculization of the lungs, while the mesenteric glands were left intact. On the other hand, tuberculosis of the mesenteric glands invariably followed when kids were suckled by goats with tuberculous mammitis. The lungs rarely showed tuberculous lesions in this case. Tuberculous infection also invariably resulted when guinea pigs were given 1 or 2 c.c. of freshly dried bovine tubercle bacilli mixed with potatoes or carrots at a single meal. Young guinea-pigs, not more than ten or fifteen days old, died of the infection in about sixty-two days afterward. The mesenteric glands were the seat of advanced tuberculous lesions, and in most cases the peri-bronchial glands were also involved, but no tubercles were visible in the lungs. The adult guinea-pigs succumbed about twelve weeks after the single infecting meal (2 cg. of freshly dried bovine tubercle bacilli). When the infected animals were fed afterward with a few small doses of tubercle bacilli, killed by heat, the anatomic alterations found were identical with those observed in guinea-pigs treated with small, repeated doses of tuberculin, namely, discoloration and enlargement of the kidneys, with hypertrophy of the suprarenal capsules and liver and granular fatty degeneration of the latter.

Semaine Médicale, Paris.

30 (XXVI, No. 10.) De la prétendue épidémicité de l'appendicite. L. Cheinisse.

31 Les "3 points pulsatiles de la radiale" dans l'artériosclérose. L. Minervini (Naples).

Münchener med. Wochenschrift, Munich.

32 (LIII, No. 4.) *Appendikostomie. Lanz (Amsterdam).

33 Zur Therapie der akuten Perityphlitis. Graser (Erlangen).

34 Zur Früh-Operation bei Epityphlitis. Gunkel.

35 *Die beim postoperativen Ileus wirksamen mechanischen Momente. Wilms.

36 *White Corpuscles in Blood. Die farblosen Zellen des menschlichen Blutes. H. Schridde.

37 *Parasite of Cancer and Transplantable Malignant Tumors in Animals.—Ueber einen protozoen-ähnlichen Mikro-organismus in malignen Tumoren und durch diesen erzeugte transplantierbare Geschwulstformen beim Tiere. O. Schmidt (Cologne).

38 Ueber Volvulus der Flexura sigmoida bei Hirschsprungscher Krankheit. Delkeskamp.

39 *Zur Pathogenese des akuten Gelenkrheumatismus. A. Schlbach.

40 "Eine neue Methode zur Diagnostik und Therapie der Nasenerkrankungen" (of nasal affections). L. Rethi.

41 (No. 5.) Ueber Lokal Anästhesie mit Novokain Suprarenin. F. Liebl.

42 Intraperitoneale Ligament Verkürzung nach Menge (shortening of ligaments). von Steinbüchel.

43 *Elimination of Uric Acid, etc., During Roentgen Treatment of Leukemia. Ueber die Harnsäure- und Xanthin Basen Ausscheidung während der Behandlung 2 Leukämiker und 1 Falles von Pseudo Leukämie mit Roentgenstrahlen. F. Rosenberger (Leube's clinic, Würzburg).

44 Die Endotoxin Lehre. A. Wolff.

45 Comparative Tests for Sugar in Urine. Quantitative Zuckerbestimmung im Harn (Riegler, Pavy und Polarisation). R. Levy.

46 "Ueberempfindlichkeit und beschleunigte Reaktion" (oversensibility and accelerated reaction). E. Löwenstein.

47 *Precipitin for Cow's Milk in Infant's Blood. Kuhmilchpräzipitin im Blute eines 4½ Monate alten Atrophikers. F. Moro.

48 Typhus-Bacillus und Bacillus Faecalis alcaligenes. H. Conradi.

49 *Infant Mortality and Survival of the Fittest.—Säuglings-mortalität und Auslese. H. Koeppe.

32. **Appendicostomy.** Lanz says that he has never lost a patient in his 710 cases of appendicectomy out of 1,286 cases of appendicitis, and has never had but one fecal fistula after the operation. He attributes his success in part to the fact that he operates in two sittings in gangrenous cases. He brings the base of the appendix out and sutures the peritoneum carefully, and also the soft parts around it. This part of the appendix is then resected, merely the stump still projecting from the center of the sutured incision, with a catgut ligature around the base of the stump. The whole is covered with collodion, changed every few days, and removed on the tenth day, after which the stump is cauterized daily with silver nitrate. The tip of the appendix in his first case thus treated was imbedded in an abscess, and nothing was done to free it on account of the friable condition of the appendix and the complex adhesions. Nine months later the patient, a man of 56, experienced slight pains in the scar and a pulling sensation, with slight nausea. The appendix was easily extirpated this time, with an extra-appendicular abscess the size of a bean. No bacteria were found in the obliterated appendix nor in the abscess. In some later cases this operation in two sittings has proved remarkably successful. At the second sitting the appendix, which had been immovably fastened at the first operation, could be removed without the least difficulty. In appendicitis he operates if possible during the first or second day, but after this only when compelled by vital necessity, and then limits intervention to opening the abscess and draining the peritoneum. When the inflammation has subsided and the patient has entirely recovered he removes the appendix.

35. **Postoperative Ileus.**—Wilms describes the mechanism by which the paralysis of even a short stretch of intestine is able to form a kind of valve, closing the passage.

36. **The Leucocytes.**—Schridde's conclusion from much research is that in the postembryonal life the lymphocytes and leucocytes are two absolutely distinct races of cells. Lymphocytes can be produced only by the lymphoblasts, while the myeloblasts produce only leucocytes. The place of origin of the latter is exclusively the bone marrow, and that of the lymphocytes the lymph follicles.

37. **Intermediate Host of Cancer.**—Schmidt believes that he has discovered in a certain fungus the intermediate host of the protozoan parasite which he considers responsible for malignant tumor growth. He has previously announced in the "Communications from His Cancer Research Laboratory" (published by Hager of Bonn), his technic for showing these parasites. The fact that he was unable to cultivate them on the ordinary culture media convinced him that an intermediate host was involved. It might be an insect or a plant. He has found on the *Mucor racemosus* cultivated from malignant tumors certain formations which have nothing to do with the spores, sporangia, mycelium or buds of the fungus, while they are apparently identical in every respect with the protozoan parasite of cancer. They are spontaneously motile and grow by endogenous spore formation. In the parasites as observed in cancer, the ameboid, vegetative forms are most predominant, while on the fungus the sexual forms prevail and the ameboid forms are rare. Specimens of *Mucor racemosus* taken from cancers always developed these characteristic forms, while none was ever found on specimens of the mucor from other sources. In experiments on 80 animals, 6 true tumors developed after inoculation with the mucor containing the suspicious formations, 5 of the tumors of unmistakably malignant character. In one of the animals, a mouse, multiple metastasis was observed. Ehrlich has recently reported that the mice which spontaneously develop malignant tumors are almost invariably females and old. In Schmidt's researches he made a point of inoculating only just matured animals, and the malignant tumors developed in four males and two females. Microscopically the tumors seemed to be identical with Jensen's mouse tumors. Their malignant character was confirmed by the microscope, by their transmissibility, by transplantation of cells to other individuals of the same species, and by the development of metastases. These and other experiences convinced him of the specific nature of his parasite, and he proceeded to study the local and general reac-

tion that follows injection of killed pure cultures of the parasite, hoping to utilize the specific reaction as a means of curing cancer in the clinic. He describes the results observed in five out of a larger number of cases thus treated at Czerny's clinic. The general and local reaction was unmistakable, while no reaction was observed in healthy persons. The objection that possibly the mucor itself might be responsible for the tumor formation and reaction he answers by calling attention to the fact that this mucor never grows at the temperature of the body of warm-blooded animals, although the spores may remain in it for months and not lose their germinating power.

39. **House Series of Cases of Acute Articular Rheumatism.**—Schlbach states that he has had occasion to observe three cases of articular rheumatism occurring during February or April of three successive years in a two-story stone flat building. None of the three patients had ever suffered from tonsillitis, he says. The first case developed after the house had been built a year, and five years have now elapsed since the last case. The air seemed damp on entering the house during the first year or so after it was built.

43. **Elimination of Uric Acid, Etc., During Roentgen Treatment of Leukemia.**—Rosenberger summarizes his research in the statement that under Roentgen treatment the elimination of uric acid increases in leukemics. He was unable to detect any increase of this kind in other patients. If the proportion eliminated increases, the prognosis becomes less favorable, as the elimination diminishes as the patient shows other signs of recovery. The elimination of the xanthin bases increases during radiation and its after-effects.

47. **Precipitin for Cow's Milk in Infant's Blood.**—Moro and others were unable to find any traces of specific precipitins for cow's milk in the blood of infants with gastrointestinal troubles in their research a few years ago. They reasoned that if the injured lining of the intestines allowed the passage of albumin from the cow's milk into the blood, this fact would be revealed by the production of a precipitin, readily manifest in the biologic test. Their results were all negative, but resuming the research recently, Moro found intense precipitin action in the blood of an infant with general atrophy. The large amount of precipitin present indicated that albumin from the cow's milk must have been being absorbed for a long time. Albumin from cow's milk circulating in the blood can not be regarded as a harmless condition. Salge found that even 0.1 c.c. of cow serum, corresponding to 0.007 gm. cow albumin, caused the severest symptoms when injected subcutaneously into nurslings, in some instances inducing threatening collapse. Moro discusses the possibility of the atrophy being the result of the alien albumin in the blood.

49. **Infant Mortality and Survival of Fittest.**—Koeppe presents new statistics which confirm his previously published views that a high infant mortality does not indicate that the survivors are particularly well adapted for the struggle for existence. On the contrary, the same causes which induce a high infant mortality in the first year presumably still operate to induce high morbidity in the following years.

Nordiskt Medicinskt Arkiv, Stockholm.

Last indexed, page 812.

50 (XXXVIII, Surgery, No. 2.) *Die Ovariotomie in Finnland. A. R. Limnell (Helsingfors).
51 *3 Fälle von Rectal-Sarkom. E. Key.
52 Ueber Zangenentbindung bei hochstehendem Kopf (forceps extraction in breech presentation). N. Muus.
53 Rinne Test and Time of Perception of Tuning Fork. Ueber Rinne's Versuch sowie über die Bestimmung der Perzeptionszeit von Stimmgabeln. N. R. Blegvad.
54 *Ueber die Otosklerose mit bes. Berücksichtigung auf path. Anatomie und Diagnose. J. Möller.

50. **Ovariotomy in Finland.**—This article opens with a reference to the "father of ovariotomy," Ephraim MacDowell, stating that the first ovariotomy in Finland was done in 1849, forty years after his pioneer work. Germany followed his lead in 1819, England in 1825, but France not until 1844. Out of the 424 ovariotomies performed at Helsingfors nine were done for recurrence of the lesion, requiring a second operation. Of the total number 385 patients were dismissed healthy, 2 only improved, 3 not benefited, and 34 had died, the majority cancer cases. Later information has been received from 303 patients after an interval of from a few months to twenty years. Among the 211 who were found healthy were 4 women who had been operated on for carcinoma, 35 for dermoid cystoma, 47 for pseudomucinous cystadenoma, 1 for adenocarcinoma, 3 for fibroma and 93 in which the character of the affection was not known.

Classifying the after-results according to the character of the affection for which the ovariotomy was performed, he found in 60 cases of pseudomucinous cystadenoma that 47 of the patients were entirely healthy, while 3 patients exhibited recurrence and one had nephritis a year afterward. In 20 cases of carcinoma or adenocarcinoma only 4 of the patients are free from recurrence after an interval of from one to four years. In 43 cases of dermoid cystoma, 35 patients are healthy (one month to 15 years); 6 have pains in the abdomen and general weakness, and 2 have died. The 3 patients with fibroma are all well; the 2 with endothelioma died not long after the operation, as also those with sarcoma.

51. **Sarcoma of Rectum.**—Key's first patient was a man in the fifties who had long suffered from hemorrhoids. A pedunculated tumor supposed to be a polyp was excised from the posterior wall of the rectum, and two years later another similar tumor was removed from the same site. It proved to be a melanoma, and a third recurrence required extirpation six months later. The patient succumbed to the affection in less than a year afterward. The case illustrates the peculiar malignancy of melanoma, and the importance of an early and radical operation. The second patient was a woman of 52, who had noticed slight discomfort and moisture at the anus for seven or eight weeks and finally felt a small tumor. There was no pain. The tumor resembled a hemorrhoidal varix, but examination showed ulceration and a little blackish secretion. A few lumps could also be felt a little higher up, and the inguinal glands were somewhat enlarged. The growths and glands were extirpated, and a recurrence took place five months later. The melanoma then recurred at various other points in four or five months. These tumors were also extirpated, but the patient began to lose strength a year after the first symptoms, and succumbed in the sixteenth month. The third tumor reported was a very vascular, round-celled sarcoma. There had been preceding hemorrhoidal troubles with considerable bleeding. A year before the operation the patient noticed that a plug about an inch long, the size of the little finger, protruded from the anus during defecation; this gradually increased in size, and there was pain and finally difficulty in urinating. The tumor was excised, but soon recurred, and the patient committed suicide. Key has been able to find only 60 cases of sarcoma of the rectum on record, omitting the dubious ones, and 38 of these were described as melanosarcoma. The youngest patient was 6 and the oldest 70 years of age. The ages of the patients with melanosarcoma ranged from 20 to 70. The average for 28 cases of melanosarcoma was 50.2 years. Males predominated. The symptoms are those of cancer in general. The feeling of a foreign body in the rectum is frequently a sign of a pedunculated tumor. In removing the growth mere excision is not enough; extensive resection is necessary.

54. **Otosclerosis.**—Möller's review of the literature can be summarized in the statement that otosclerosis is a special morbid entity with its own pathologic anatomic foundation, a characteristic new formation of bone in the interior of the labyrinth. It is a primary affection and does not depend on former affections of the ear. The characteristic syndrome includes progressive bilateral deafness, with an insidious course, occurring especially in young people in whose family similar cases already exist. The picture of the tympanic membrane is normal, or possibly showing redness shining through. There is also reduced bone conduction, restriction of lower and upper sound limits, and negative findings with the Gellé test. In treatment he warns against the air douche. Lucae's spring pressure catheter sometimes gives good results, but is liable to be painful. Vibration of the ear drum is a better measure, whether done with the Delstanche suction instrument or the Siegel, or merely by intermittent pressure on the tragus. Breitung's air pump is the most effectual. With the aid of

these the hearing can be improved in many cases, and in others can be kept from growing worse, while the subjective sounds are frequently cured. Operative measures do not offer much advantage, while they are inclined to be dangerous. Transient benefit has sometimes been obtained from administration of potassium iodid, quinin, sodium bromid, etc., but striking success need not be anticipated. Administration of phosphorus is more promising, and, he states, is certainly worth a trial, giving one or two tablespoonfuls a day of a 1 to 10,000 solution of phosphorus. Siebenmann has reported that the phosphorus arrested the progress of the affection in 50 per cent. of his cases. Much can be done in the way of prophylaxis. The affection shows a special tendency to run in families, and the younger members of such families should be guarded with special care. They should be kept from "catching cold," from exposure to sudden climatic changes, and from overexertion, both mental and physical. The diet and hygiene generally should be supervised, tobacco and alcohol avoided, and nervous, especially vasomotor disturbances, should be combated, while all nose and throat affections should be carefully treated. Members of these otosclerotic families, he adds, should be warned against matrimony. In 10 of the 36 cases a catarrhal affection of the eardrum was manifest, but it was so slight that it could not have been an important factor in the process. Only in one case was there a history of preceding suppuration in one ear.

Norsk Magazin f. Laegevidenskaben, Christiania.

... (LXVII, No. 1.) *Til encefalit-sporgsmaalet. S. Laache.
56 Acute Yellow Atrophy of Liver in Boy of 6.—Akut gul leveratrofi af infektiös oprindelse (streptokokker). F. Harbitz.
57 Calomel som diureticum. P. F. Holst.
58 Chorea gravidarum et psychosis. Partus prematurus artificialis. Helbredelse. H. J. Vetlesen.
59 Et tilfaelde af akut myelit; bakteriologisk undersogelse af cerebrospinalvaedsken. V. Magnus.
60 Hernia diaphragmatica. E. H. Hansteen.
61 Rhinoplastik efter en ny methode. H. Schilling.
62 (No. 2.) *Om pseudomeningitiske (og meningitiske) tilstand med udgang i helbredelse. (Recovery). S. Laache.
63 Epidemisk optraeden af akut poliomyelit. Discussion.
64 Tör kur ved hjertesygdom ("dry cure" in heart disease). P. F. Holst.
65 Erfaringer om appendicitis. J. Roll.

55. **Encephalitis.**—Laache discusses the curability of encephalitis and describes 6 cases of the disease. One of his patients had suffered from a similar affection years before, with ten years of health before the fatal recurrence. Only one patient was a man; the symptoms of encephalitis in his case had been preceded by chronic hematuria from cystopyelitis. The process in the brain was in the right hemisphere and was very extensive, inducing numerous contractures of the muscles of the limbs and face and stupor suggesting chronic uremia. Tham has reported a somewhat similar case in which meningo-encephalitis caused a kind of sleeping sickness beside the convulsions, with normal intervals. One of Laache's patients presented symptoms suggesting tuberculous meningitis. The postmortem findings are shown in colored plates, the symmetrical hyperemia on each side of the longitudinal sinus being especially prominent, as also the thrombosis in the veins of this region. There was nothing in the history of the case of acute hemorrhagic, non-suppurative polioencephalitis to suggest a preceding infectious disease as responsible for the condition. The other patients were 5, 10 and 20 years old, respectively. There was nothing to indicate syphilis in any case.

62. **Recovery After Meningitic or Pseudomeningitic Conditions.** Laache reports 5 cases in which he was told by the patients that at some previous time they had passed through an illness, the symptoms of which, as related, seemed to have been those of meningitis (not the epidemic variety). Recovery from meningitis is so rare that he investigated the cases and has kept the patients under supervision since. The first patient was a girl of 4, tuberculous and psychopathic, with a tendency to rachitis. The acute cerebral affection had a sudden onset, but the child slowly regained her health. The second patient was a woman of 21, who suffered from diffuse headache, with rigidity of the neck, vomiting and slow pulse after a sun bath. This was possibly a case of sunstroke. Rapid improvement soon followed. The patient now shows signs of consumption. The third patient was a lad of 13 whose brother had recently died of tuberculous meningitis. The patient was addicted to cigarette smoking. He suddenly exhibited headache, rather slow pulse, slight temperature, rigidity of the neck, and a transient exanthem. He rapidly improved under iodoform salve externally and potassium iodid internally. The fourth patient was a young woman who recovered under Laache's eye from a second attack of serous meningitis, after an interval of nearly three years. The symptoms began abruptly the second time without a prodrome. The condition gradually improved to complete recovery after several weeks. The fifth patient was a young clerk who had an affection of the face, possibly erysipelas, followed by great prostration, headache, bradycardia, double vision and facial paralysis. Complete recovery followed after a protracted convalescence. Pseudomeningitic symptoms may be induced by febrile and infectious diseases, especially in young children and in the aged. Pneumonia in children frequently affects the brain. Cephalalgia may follow mumps and be accompanied by bradycardia, sometimes very pronounced. Laache has witnessed several instances of this. Pseudomeningitic symptoms may likewise be induced by disturbances in the circulation through the brain or may even be of merely nervous origin. In one male neurastheric he observed once an attack of prolonged and irregular migraine (intense headache with febrile states), the clinical picture strongly suggesting meningitis, but spontaneous recovery ensued in the course of a few weeks. An iodoform salve was rubbed into the shaved head in the 5 cases on which the article is based. Quincke has also obtained good results with mercury.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ELLIS'S DEMONSTRATIONS OF ANATOMY. Being a Guide to the Knowledge of the Human Body by Dissection. Twelfth Edition. Revised and Edited by C. Addison, M.D., B.S., F.R.C.S., Lecturer on Anatomy, Charing Cross Hospital, Medical School; Formerly Hunterian Professor, Royal College of Surgeons, England. Illustrated by 306 Engravings on Wood, of which 75 are in color. Cloth. Pp. 851. Price, $3.50 net. New York: William Wood & Co.

A COMPEND OF OBSTETRICS, Especially Adapted to the Use of Medical Students and Physicians. By H. G. Landis, A.M., M.D., late Professor of Obstetrics and Diseases of Women in Starling Medical College. Revised and Edited by W. H. Weels, M.D., Demonstrator of Clinical Obstetrics in the Jefferson Medical College, Philadelphia, etc. Eighth edition. Illustrated. Cloth. Pp. 227. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

A MANUAL AND ATLAS OF DISSECTION. By S. M. Yutzy, M.D., Instructor in Osteology and Demonstrator of Anatomy in the University of Michigan. With 314 Illustrations. With an Introduction by J. P. McMurrich, A.M., Ph.D., Professor of Anatomy, University of Michigan, Ann Arbor. Cloth. Pp. 256. Price, $2.50 Philadelphia: P. Blakiston's Son & Co., 1906.

LA CAMPAÑA CONTRA LA FIEBRE AMARILLA. Informes, Notas y Comentarios De Inspeccion. By Dr. Carlos Manuel Garcia, Medico Inspector Del III. Distrito. Septiembre De 1903—Enero de 1906. Paper. Pp. 43. Veracruz: Tipografia "El Progresista" de Jose Ledesma, J. M. Betancourt, 32. 1906.

ATMOKAUSIS UND ZESTOKAUSIS Die Behandlung Mit Hochgespanntem Wasserdampf in der Gynaekologie. By Dr. Ludwig Fincus, Frauenarzt in Danzig. Zweite Verbesserte Auflage, Mit 53 Textfiguren und Tafeln. Paper. Pp. 371. Wiesbaden: Verlag Von J. F. Bergmann. 1906.

SKIASCOPY WITHOUT THE USE OF DRUGS. A Practical Treatise for Optometrists by R. M. Lockwood, Author of Principles of Optometry. The trial Case and How to Use It, etc. Illustrated. Paper. Pp. 112. New York: Frederick Roger Publishing Co.

DISEASES OF THE NERVOUS SYSTEM, Resulting from Accident and Injury. By P. Bailey, A.M., M.D., Clinical Lecturer in Neurology, Columbia University, New York City, etc. Cloth. Pp. 627. Price, $5.00. New York: D. Appleton & Co., 1906.

TRANSACTIONS OF THE ELEVENTH ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY, held in Boston, Mass., June 5-7, 1905. Cloth. Pp. 570. St. Louis: Published by the Society. 1906.

THE DYNAMICS OF LIVING MATTER. By J. Loeb, Professor of Physiology in the University of California. Cloth. Pp. 253. Price, $2.00. New York: The MacMillan Company, 1906.

NINTH ANNUAL REPORT OF THE LOOMIS SANATORIUM AND ANNEX (for the Treatment of Tuberculosis). Paper. Pp. 56. Liberty, Sullivan County, New York, Oct. 31, 1905.

REPORT OF THE TRUSTEES OF THE NEWBERRY LIBRARY for the Year 1905. Paper. Pp. 30. Chicago: 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, APRIL 28, 1906. No. 17.

Original Articles

THE PARASITISM OF THE TUBERCLE BACILLUS AND ITS BEARING ON INFECTION AND IMMUNITY.*

THEOBALD SMITH, M.D.

George Fabyan Professor of Comparative Pathology in the Harvard University Medical School.

BOSTON.

The present-day problems in tuberculosis which can be approached by experimental or at least by laboratory methods manifest themselves in three different ways:

1. In the somewhat chaotic condition of opinion concerning the avenues through which tubercle bacilli gain a foothold in the body.

2. In the wide divergence of opinion concerning the relation of bovine to human tuberculosis; and

3. In the general trend of studies toward the problem of specific immunity, with special reference to prevention and treatment.

These three problems, though distinct, are interrelated, and in a lecture of this kind, in which some freedom in the statement of theories and hypotheses and a rather broad treatment of the subject are not only permissible but desirable, it must be necessary to deal with each, to some extent at least. The most important of the three is the one dealing with immunity, and my statements will be grouped around and directed toward it as a focal point.

The method of treating the subject will be from a biologic standpoint which assumes as a basis for discussion a complex relationship established in time by a selective adaptation between two living organisms, of which one is a parasite of the other. Whatever pathologic processes of constant character are the expression of this parasitism, such as tubercle formation, for example, are regarded as the result of an interaction of two organisms rather than the work of one alone.

Viewed from this standpoint, this tendency toward a state of equilibrium between host and parasite is disturbed by any change of condition which influences either parasite or host. It varies with the species, race, nationality or even family of the host and many other accessory conditions. It depends on the race of tubercle bacilli. In experiments such conditions as age of culture, total period of cultivation, character of the culture medium, condition of aggregation of the bacilli, mode of application and dosage are of great importance in determining the outcome of the experiment. Similarly the outcome will vary according to the species of animal on which we are experimenting.

Much of the experimental inquiry of the past has been along too narrow lines and with the conditions too poorly defined. We have lost sight of the general relations of bacteria to animal life. Our haste to take the animal and bacterial mechanisms to pieces and to test the individual tissues and components have crowded out the broader view that the host fights more as a unit. We had almost forgotten to take into consideration the flexibility and adaptability of the micro-organisms themselves.

In a recent lecture I presented in a somewhat new aspect the relationship between host and parasite, by pointing out that in a stable parasitism the parasite is in command of a mode of exit from the body as well as one of entry. Both are necessary for the continued existence of the parasite as such. The evolution of this process has brought with it two related conditions: first, a lowered virulence or invasive power of the microbe, and, second, the tendency to attack mucous membranes, cutaneous surfaces or organs in direct communication with the exterior. The lowered virulence is only another expression for localization on the external surfaces among which mucous membranes and the respiratory tract may be placed for present purposes. As a result of this adaptation tuberculosis has taken largely the form of phthisis. That is, the parasite has become localized in an organ in direct communication with the exterior, yet largely protected from miscellaneous bacterial and other parasites. Its modes of exit and of entry are identical. The bacillus may vegetate in the lung tissue and it may be easily discharged outwardly.

Phthisis, however, is only one, even if the preponderating type, of tuberculosis. Much has been made of the other manifestations. Among these, disease of the lymph nodes, bones, kidney, brain and spinal cord must be considered aberrant from the standpoint of the bacillus, for in these situations, with the possible exception of tuberculosis of the kidneys, the bacillus is doomed to an ignominious destruction, because there is no exit. These aberrant forms of parasitism are most frequent in childhood, because, perhaps, the tubercle bacillus being, as it were, keyed to adult life, is for that reason more invasive for childhood.

To the biologist these types of disease are of interest as suggesting problems in susceptibility and resistance which, as stated above, are the problems through which experimental medicine may deal practically with this disease.

In order to bring out in relief certain general biologic phenomena of tuberculosis, I shall discuss, first, very briefly the mode of invasion of the body by the tubercle bacillus, then sketch a theory of the interaction of the body and the bacillus. I shall then discuss the tuberculin reaction and the action of dead tubercle bacilli and the procedures suggested or used for producing an increased resistance of the body.

I. THE INVASION OF THE BODY BY THE TUBERCLE BACILLUS.

Bearing on immunity, the problem which deals with the primary seat of tuberculosis and its relation to the

* Lecture delivered under the auspices of the Harvey Society of New York, at the Academy of Medicine.

portal of entry deserves consideration, since it is, to a certain degree, an index of susceptibility. The theories concerned with the mode of invasion of the tubercle bacillus may be classed under four heads:

1. The inhalation of dried sputa, as laid down by Koch and elaborated by Cornet and others.

2. The inhalation of moist particles, or spray infection, as formulated and worked out by Flügge and his pupils.

3. Congenital tuberculosis, resulting from infection *in utero*, as defended by Baumgarten.

4. The infection through milk in infancy associated with a greater or lesser degree of latency until puberty and even later, the theory recently championed by Behring.

In taking some definite stand as to which of these theories, if not all, should have our support, we may gain some evidence from a study of the primary seat of the disease, i. e., that place in the body where the presence of the bacillus is shown either by the existence of actual lesions or by animal inoculations.

In the largest number of cases of tuberculosis the lungs themselves have been regarded as the primary seat of the multiplying bacilli. In children, however, other conditions frequently prevail, and the primary seat of the active process may be in the cervical, the bronchial and the mesenteric lymph nodes; many authors have called attention to this fact. Weigert[1] referred to this over twenty years ago. He refers also to similar conditions for the bronchi, the mouth and the skin.

The most recent monograph of Harbitz[2] refers to it as follows: "The general rule in cases of children is that the lymph nodes are primarily attacked and that the lungs are infected from them. General experience teaches that isolated tuberculosis of bronchial nodes is quite common while isolated pulmonary tuberculosis, with or without a slight and plainly secondary lymph node tuberculosis, is a rarity in children."

Ribbert goes so far as to assume that pulmonary tuberculosis is mainly hematogenous in origin, the source of the infection being some lymph node primarily diseased.

Petruschky, in his various publications dealing with the curative power of tuberculin, has identified himself so thoroughly with this view as to regard and to classify lymph-node tuberculosis as the first stage in tuberculosis generally.

Baumgarten[3] has contended and still contends that tubercle bacilli always produce some lesion at the point of entry into the body. In taking this position he relies on animal experiments; but there are objections to animal experiments, inherent in the difficulty of approximating natural conditions. The local lesion in animals may be due to a variety of causes, among which are local trauma, dead and attenuated bacilli and chemotactic substances due to autolysis in the cultures, and the want of adaptation of the bacillus to the species of animal used. Compare these with the entry of a solitary bacillus or perhaps several bacilli in a dried condition, without producing trauma or any chemotactic response, and we see at once the difference between the natural and the experimental mode of invasion.

The invasion of tubercle bacilli into the lymph nodes without causing disease at the point of entry has interested me since I began the study of bovine tuberculosis, in which disease such invasion is the rule, and I shall take this opportunity, therefore, of describing this phenomenon in the cattle disease more in detail. I will premise my remarks on this subject by stating that mammalian tuberculosis appears in two independent types—human and bovine. If either human or bovine type were suppressed the other would still continue. The best evidence on this point was presented by Kitasato, who demonstrated that in Japan the human disease existed in its usual activity, though the cattle disease was absent and milk formed no appreciable element in the food of children. Most other mammals at times have been found infected, either from human or bovine sources. In these a satisfactory mechanism does not exist to perpetuate a porcine or canine or feline type of disease. The bovine disease is the best, therefore, for study, next to that of man himself.

Soon after the recognition of tuberculin as a valuable diagnostic agent, astonishment and consternation were created by the discovery that a very large percentage of the best dairy cattle of the world reacted to tuberculin. Under the influence of this discovery some ill-considered laws were passed to destroy all reacting cows and their flesh, for the purpose of eradicating the disease. During these few years of active warfare, beginning in 1893, I was able to make autopsies on about 350 head of cattle which has reacted to tuberculin. This enabled me to get a good composité picture, as it were, of the early stages of the disease and to determine the primary foci with considerable accuracy. A portion of the results of this investigation was published in 1894;[4] the rest has remained in manuscript form.

In cattle, tuberculosis is an exquisitely parasitic disease, in which the chief seat of the lesions is in the lymph nodes. Next in order come the lungs, then the liver and serous membranes. Furthermore, it may occasionally be encountered in almost any other organ and tissue.

There are three portals of entry, the upper respiratory tract (mouth and nose), the lungs themselves and the small intestines. Very rarely the skin or subcutis has given entrance. The infection through these portals is indicated chiefly by disease of the corresponding lymph nodes. In the head, for example, the pair of retropharyngeal glands are the chief indices of infection. They are situated close together under the mucous membrane covering the dorsal or posterior wall of the nasopharynx. The other lymph-nodes of the head are infrequently diseased and need not be considered here. The mucous membrane is free of disease; the tonsils are very rarely infected. The progress of the infection along the chain of nodes in the neck is slow, and the infection of the head glands has little, if anything, to do with the primary or secondary disease in the thorax.

Tuberculosis due to inhalation of tubercle bacilli is by far the most common. The lungs and associated lymph nodes may be infected or only the latter. The thoracic lymph nodes in cattle belong to three systems, the tracheal and bronchial nodes closely attached to the trachea and its branches, and draining the peribronchial and perivascular lymphatics, the dorsal mediastinal

1 Deutsche med. Wochft., 1903, p. 735. "In adults, for instance, we find so frequently the familiar tuberculous lymphatics issuing from ulcerations in the intestines while the lymph glands pertaining to them show comparatively slight changes. In children, on the contrary, we often encounter the reverse, pronounced caseous changes and swelling in the mesenteric glands while no morbid process can be detected in the afferent lymphatics, even into their trunk region."

2. Jour. Inf. Diseases 11, 1905, p. 143.

3. Berliner klin. Wochft., 1905, p. 1329.

4 Bulletin No. 7, 1894, Bureau An. Ind. U. S. Dept. Agric.

chain or chains dorsal of and resting on the pillars of the diaphragm and on the esophagus, which probably drain the lymphatics of the lung tissue itself, and the interior mediastinal glands situated under the first rib; that is to say, in the apex of the thorax. That the bronchial and dorsal mediastinal glands drain the lungs is shown by their similar structure, pigmentation and contents of very fine particles of mineral matter coming from the air. The third group has no pigment and probably drains the pleural cavities only. It may also stand in some relation to the cervical nodes.

In all herds which were examined there was a considerable number of animals in which the pulmonary infection resulted in lymph-node disease only. In one herd of sixty animals, for example, of which fifty-three were infected, twenty-seven had tuberculosis of the thoracic lymph nodes, but no lesions in the lungs.

Next in frequency comes disease of the lungs themselves. The chief seat is in the large caudal lobes. In man the upper or cephalic lobes are the preferred seat. In cattle the invasion is just where one might suppose it to be when coming from bacilli suspended in air; it is in the direct line of the current and in the lobe which goes through the widest excursions. That most of the infection lodges here I also infer from the fact that the one mediastinal gland which evidently drains this portion of the lungs is the most frequently infected lymph node in the whole body. The infection through the intestines shows itself almost exclusively in tuberculosis of the mesenteric lymph nodes and in disease of the liver. Lesions of the mucous membrane are extremely rare.

This very hasty and imperfect sketch of the primary foci of tuberculosis in cattle shows that the bacilli usually enter the system, first, in the inspired air or in the food through the mucosa of the mouth or throat; secondly, through the lungs in the inspired air, and, thirdly, through the intestinal mucosa in bacilli swallowed in the food. The most striking fact is the passage of the bacilli through the mucous membrane or the air cells into the associated lymph nodes without leaving any trace visible to the naked eye or detected by manipulation. I am convinced, therefore, that Baumgarten's theory can not be maintained in the bovine disease and that tubercle bacilli may pass through at least one gateway of the body without being detained.

The tendency of the tubercle bacillus to settle down and to multiply in the lymph nodes in cattle is manifested in still another way. When the disease becomes generalized by the escape of bacilli from some primary focus into the general circulation, the secondary disease does not give rise to a miliary tuberculosis, but isolated foci may appear in various organs. Even these may be absent and the infection of the organ or the passage of bacilli through it indicated by marked affection of the corresponding lymph glands. Thus the evidence that bacilli have passed through the liver and kidneys is frequently indicated only by tuberculous portal and renal lymph nodes respectively. Evidence of udder infection is frequently presented only by tuberculous pubic lymph nodes. That submiliary tubercles may be found in these organs is not to be denied. I have found a few in the liver in an advanced stage of the disease, composed only of a giant cell and a few epithelioid cells around it. The fact remains that the lymph nodes act toward these organs very much as the lymph nodes of the lungs do in the primary infection.

There are a few other data derived from a study of the distribution of tuberculous lesions in cattle which are of interest here. In the disintegration of pulmonary foci the bacilli may pass in two directions, into the associated lymph node or outward by rupture into the air tubes, or both ways at the same time. Passage into the lymph channels is signalized by an enormous hyperplasia of the dorsal mediastinal and certain bronchial nodes. The bulk of these may be increased from twenty to thirty times. The tuberculous process is in the same stage throughout, which indicates a sudden flooding of the gland. When the discharge is outward, yellowish, caseous masses are found at the autopsy in the smaller air tubes. Ravenel has demonstrated that these masses are actually ejected during coughing. The mucosa of the air tubes themselves is not infected primarily, and eruptions, ulcers and catarrh are subsequent to the discharge of caseous matter. The latter acts both as an irritant and an infecting substance. Infection of other, notably the cephalic or smaller, lobes is brought about by aspiration of the caseous masses. These smaller lobes are more dependent and subject to the gravitation of fluids and semisolid matter.

The careful noting at the autopsy of the approximate age of the tuberculous lesions led me to conclude that infection through one of the avenues mentioned has, as a rule, nothing to do with the others. That is, there seemed to be no connection between tuberculosis of the mesenteric glands and pulmonary disease. It was noticed, however, that the stage of disease in the thoracic and abdominal lymph nodes was in many cases the same. The inference was that the animal was infected at the same time through two or even three different portals. The theory of Behring that tuberculosis starts in early life through the digestive tract is inapplicable as a rule to the bovine disease.

Concerning the mode of invasion of tubercle bacilli in rabbits and guinea-pigs through the natural portals, without the infliction of a trauma, as by subcutaneous inoculation, or the circumventing of certain channels, as by injections directly into the peritoneal cavity or the blood, I have no data of my own. There is evidence, however, to show that in these animals also the lymph nodes form the earliest foci of multiplication in feeding and inhalation experiments, and that the bacilli soon break away through this barrier and are diffused in the blood current over the body.

In the pig the ingestion of infected milk leads at first to tuberculosis of the head and cervical lymph nodes and those of the mesentery from which stations generalized infection by means of the blood takes place very soon.

A most important question is raised by this penetration of the tubercle bacilli to lymph nodes. How far may they penetrate before they settle down? Do they go beyond the first lymph node? Do they ever reach the blood directly from without? The conservative notions of twelve years ago would hardly admit the penetration of tubercle bacilli below the mucous membranes. To-day the extreme and radical notion of Behring that infection occurs early in life and may remain latent and that tuberculosis in later life largely dates from infancy is being seriously and widely discussed. This preparedness to receive and to discuss such a statement is partly due to the strides made in the study of parasitism. We have become accustomed to the complicated dual-host system of malarial and other blood parasites, the wanderings of the larvæ of uncinaria from skin to duodenum and of larvæ of certain flies from esophagus to skin. The revival of instructive studies in animal parasites brings back again the complicated life cycle of tape-

worms and flukes. Among the bacteria it seems well established that glanders bacilli may enter the body of horses through the digestive tract. Nicolas and Descos[5] showed that in the dog tubercle bacilli may appear in the thoracic duct after a meal of fatty substances impregnated with them. Ravenel[6] confirmed their observations. There is good reason, then, for anticipating discoveries or theories which might greatly simplify our view of infection.

In my studies of the bovine disease I was unable to see anything more than the localization in the lymph nodes of the invaded part or perhaps a very slow creeping along to the succeeding nodes. I am not inclined to accept the extreme view that tubercle bacilli may penetrate very far into the system at the start. The view that they may enter the blood during invasion is derived partly from artificial inoculations. In such experiments more or less injury is always inflicted and the bacilli may enter both blood vessels and lymphatics. In the spontaneous infection, the bacilli under the lymphatics only and the nodes act as a temporary or permanent barrier. The positive experiments with dogs quoted above can not very well be generalized to apply to the spontaneous disease until similar experiments have been made on other species with bacilli from various sources.

II. THE RECIPROCAL ACTION OF BACILLI AND THE INVADED ANIMAL TISSUES.

The passage of tubercle bacilli through mucous membranes and the alveoli of the lungs into the nearest lymph nodes is probably made in the same way and by means of the same agencies by which particles of soot, quartz and other mineral particles are conveyed, that is to say, as inert matter for the time being. The lodgment in the lymph nodes is probably due to mechanical agencies, the nodes acting as filters and barriers.

Here the bacilli begin to multiply and to set in motion that complex series of events leading to tubercle formation. Taking a tubercular focus in one of the thoracic lymph nodes of cattle, the first visible sign of the presence of the bacillus is the proliferation of epithelioid cells, with single nucleus or multiple nuclei. This new tissue undergoes central necrosis and caseation. The surrounding tissue proliferates to form a more or less dense capsule and the process comes to a standstill.

If we endeavor, with the aid and guidance of existing knowledge, to construct a sequence of the factors which are concerned in this process of tubercle formation, we shall find it extremely puzzling. It has occupied my attention for a number of years, yet even to-day with the help of the many currents of experimental data coming from so many laboratories I realize that we may choose several widely different interpretations without coming into violent collision with what we may regard as reliable experimental data.

At the outset it may be said that the tissue proliferation in tuberculosis is something specific in character, varying slightly from host to host. In man and cattle it is much the same. In the smaller animals, either spontaneously diseased or inoculated, the tuberculous tissue is still characteristic, but giant cells are rare or absent. These, as a rule, are absent when the process is very rapid. In those species to which the bacillus has adapted itself, man and cattle, the cell proliferation is most uniform and characteristic.

The tissue reaction leading to the quiescent focus above described I believe to be a mechanism of defense for the body, even though imperfect. I also believe that it is a mechanism of defense for the tubercle bacillus—a mutual product, as it were. The structure of the tubercle interferes with the further dissemination of the bacillus by clogging the channels of escape. The bacilli become embedded in the proliferating cells and the necrosis protects the surviving ones from further attack for the time being. We can conceive that if this cell proliferation is somewhat delayed, the final result is a much larger focus. If it is still more delayed, the bacilli may be carried into other lymph nodes of the series and may establish several foci. The stimulus for such proliferation rests somewhere with the bacillus. It was shown many years ago by Prudden and Hodenpyl, by Straus and by many others later that dead, even boiled and washed, bacilli stimulate cell proliferation of a more or less specific type. We know also that such proliferation goes on in the presence of living bacilli, for an indefinite number survive the whole process.

In view of the fact that living, though very attenuated, tubercle bacilli are far more effective in producing immunity than dead bacilli, a fact brought out by Behring, Koch, Trudeau and others, we are safe in granting that the formation of the tubercle is stimulated by something given off from the living bacilli and not destroyed by heat. The simple stimulation of cell growth by the multiplying bacilli, however, does not fully explain the matter. There is an additional element which enters here, and this probably resides in the blood and to a less degree in the lymph. The blood is evidently an unfavorable medium, as indicated by the location of tubercles in the various animal species.[7] In order to account for the facts as nearly as possible, the following theory has been evolved during the past seven or eight years:

The tubercle bacilli as they come directly from some discharging focus are provided with some protecting, more or less inert substance as an envelope. This envelope maintains a neutral chemotaxis until the bacillus reaches the connective and lymphatic tissue, where it settles down. The protecting envelope is slowly removed by the normal tissue fluids. When this has been accomplished the bacilli are able to multiply, but during multiplication they stimulate cell proliferation and, according to the activity of this process, the multiplication is checked. The bacilli are destroyed in part; the rest, through the protecting influence of caseation, remain latent, provide themselves with the protecting envelope, and if discharged outward are ready to infect another individual.

It will be noticed at once that the theory presented has much in common with the theory of opsonins which A. E. Wright has developed with so much skill and industry since 1902.[8] We may as well call the blood factor the opsonin, in deference to Wright, as the one who first called attention to it as a normal element. I do not agree with Wright, however, in attributing any special rôle to the blood leucocytes in body defense, for there is little or no evidence of this in the tissue reaction to the tubercle bacillus.

The many observations which refer to an early phagocytosis by leucocytes when bacilli are injected may be explained in two ways: First, as due to neglected fac-

5. Jour. de Physiol. et de Path. Gén., vol. iv, 1902, p. 910.
6. Jour. Med. Research, vol. x, 1903, p. 460.

7. Maragliano states that he has been able to cultivate tubercle bacilli successfully only on guinea pigs' serum.
8. Bulloch: Practitioner, Nov. 1905; a general summary and bibliography of Wright's work.

tors inherent in the cultures used. These are the injection of too large numbers of bacilli, attenuated by long cultivation, and many of them dead, autolytic products, and the production of trauma during inoculation. The attenuated and dead bacilli fall a prey to the leucocytes, and as soon as these are disposed of the true tubercle appears. Second, it is possible that the virulent tubercle bacilli may be carried by leucocytes, as are inert particles of dust, pigment and mineral, and deposited in a favorable place. We should scarcely attribute much importance to the carrying of a particle of quartz dust from the alveolus of a cow's lung to a mediastinal gland as a protective measure.

Baumgarten justly calls attention to the errors lurking in the injection of large numbers of bacilli, and his theory that the elements of the tubercle are quite different from the wandering phagocytes has been fully sustained. The phagocytosis which appears to go on in the tubercle itself I regard as a hedging in, a suppression of multiplication rather than a destruction. Even the common appearance of bacilli in epithelioid and giant cells may be interpreted as a growing around the bacilli on the part of the proliferating elements rather than an actual ingestion. That destruction may finally occur is highly probable, but necrosis soon ensues to check this and protect the remaining bacilli. I am aware that this assumption of a protecting envelope which can be conceived of as a secretion may appear strained, but I have been unable to harmonize the facts with any other theory. In its support I presented in a recent paper facts observed in the cultivation of tubercle bacilli, some of which I quote here:

In the cultivation of tubercle bacilli the peculiar behavior of the bacilli first and last is best explained by assuming some change in the envelope or outer membrane of the bacilli. It is well known that it is very difficult and frequently impossible to obtain cultures of tubercle bacilli from tuberculous tissue in culture media in which they will grow readily after months or years of artificial cultivation. To obtain original cultures it is necessary to approximate as closely as possible the conditions obtaining in the animal body.

We can interpret this great change which the bacilli undergo in artificial cultures in two ways: 1. They make use of substances which at first could not be utilized as food. In other words, their metabolic functions have undergone a profound alteration. 2. The bacilli under artificial cultivation have eliminated something which has interfered with active absorption and assimilation.

I am inclined to accept the second theory and to assume that in the course of artificial cultivation a relatively impervious protective capsule has been gradually eliminated or modified, and, as a result, the growth and multiplication has become freer and more rapid. This elimination or modification of the envelope may go on by a selective growth of those bacilli which are most easily affected, or else the membrane may become modified in all bacilli because the active struggle with living tissue is in abeyance.

This theory also voices a condition which, I think, should be considered in any theory of immunity. I refer to the latency of tubercle and other bacteria in tissues. This latency of tubercle bacilli in lymph nodes has been demonstrated by not a few experimenters (Loomis, Pizzini, Harbitz and others).[9] According to theory here proposed, the tubercle bacilli are unable to multiply in the system when the opsonic power is too low, for the reason that the protecting capsules are not removed. Under such conditions the body is apparently immune, but really is in a state of hypersusceptibility. When the opsonic power rises the multiplication begins. This theory would also explain more rationally the greater activity of tuberculosis in certain decades of life.

It is far from my purpose to apply this theory to all invasive bacteria. Each group or species possesses certain morphologic and physiologic peculiarities which are overdeveloped or suppressed in the evolution of parasitism. The work of Denys, of A. E. Wright and of Neufeld has shown that, while lytic forces may control typhoid and cholera bacteria, they do not govern streptococcus and other infections, in which cellular activity in the form of phagocytosis plays an important part. The more rapidly growing bacteria may possess quite a different mechanism of defense. As pointed out by Dr. W. H. Welch, they may secrete substances in the body which we do not sense in the culture tube. These he calls toxins, while I should prefer to call them protective substances of the bacteria. According to either conception, they would be harmful, the toxin directly, the protective substance indirectly by neutralizing the protective substances of the animal body. Finally, the theory here presented holds only for the spontaneous disease of man and cattle, attacked by their own specifically adapted races of bacilli. In experimental work this mutual relationship is disturbed by the foreign character of the bacilli used, by the crude methods of causing infection and by the use of artificial cultures more or less modified.

III. THE PRODUCTION OF SPECIFIC ARTIFICIAL IMMUNITY TOWARD TUBERCLE BACILLI.

The overshadowing problem before society to-day is that relating to acquired immunity to tuberculosis in the individual and its influence on future generations. Can immunity be induced artificially and will the survivors transmit anything of value to their offspring? The relative mildness of endemic diseases has been at times referred to as indicating the inheritance of acquired immunity, but the increased resistance of the population to endemic diseases can be explained as a result of weeding out or selection. In a recent lecture I pointed out that, with the weeding out of the host, there goes on a weeding out of the parasite as well until two are eventually selected which maintain a kind of equilibrium toward each other. During the weeding out of the host the parasite must gain in power to keep up with the former. This selected race of bacteria or other parasites attacking a population hitherto unexposed to it may cause serious epidemics and lead to the belief that the permanently infected population had gradually inherited an acquired immunity, whereas selection may have done it. In spite of these discouraging possibilities, the face of medicine and of society in general is determinedly set toward the prevention and cure of consumption and every possible means will be tried to raise the resistance of the individual. To experimental medicine has fallen the task of seeing what can be done to raise the specific immunity artificially by making use of the tubercle bacillus, or any of its component substances, or even of hypothetical antibodies.

Historically the most important factor in the study of immunity is Koch's old tuberculin. From this, logically and illogically, all other methods of inducing immunity have radiated. It will be necessary, therefore, to deal with this first of all. The administration

9. This conception of a hypersusceptibility in the form given here is, I think, new. There are several other diseases in which this conception may prove explanatory and stimulating, and I hope to return to this subject in a later paper.

of this substance demonstrated three remarkable phenomena: 1. The great sensitiveness of the tuberculous individual and the comparative indifference of the healthy body to it. 2. A distinct thermal reaction of the tuberculous individual, that is to say, a general effect, and 3, a hyperemia of the tuberculous focus. These can be readily demonstrated on tuberculous guinea-pigs.

My interest in the tuberculin reaction was aroused in 1898, when I was giving considerable attention to the immunizing effect of tubercle bacilli, killed at the low temperature of 60 degrees centigrade. I was very much surprised to find that some of the guinea-pigs which had been inoculated with heated bacilli and in which there were no signs of active tuberculosis after eight weeks succumbed promptly to small doses of tuberculin. Others lost considerable weight, but survived.

This tuberculin reaction is closely allied to another brought out by dead bacilli, injected into an animal which has already received a dose of dead bacilli. In other words, the first dose of dead bacilli sensitizes the animal to such a degree that the second arouses a violent reaction and may even prove fatal. This had already been pointed out by Straus. Since making these experiments I have asked myself the question again and again, Why does a single dose of the dead bacilli sensitize the animal, and why does not a corresponding dose of tuberculin do likewise? So far as I was able to examine the literature, no one had succeeded in making animals hypersensitive by the use of tuberculin alone.

This hypersensitiveness I looked on as an immune reaction. The animal had been taken out of a condition of neutrality or indifference into one of irritability and defense, however imperfect. In seeking an explanation of this peculiar difference between heated bacilli and tuberculin, it became necessary to determine what the tuberculin reaction means. It is well known to the special student that there are about nine or ten theories of the action of tuberculin in print, and it seems perhaps folly to add another. Fortunately the one I believe accounts best for the facts observed by others and myself is very much like one of these nine or ten as I shall point out.

In the tubercular tissue and its immediate vicinity the tubercle bacilli have induced certain tissue changes, and with them certain new functions of the tissue have been aroused which are the result of immunization. These new properties are concentrated in the immediate neighborhood of the focus. The specific resistance is, as it were, chiefly focal and only secondarily generalized. When the tuberculin comes in contact with this focus, the former is acted on, with the result that the originally innocuous tuberculin becomes poisonous perhaps by the splitting off of some poisonous substance. An incomplete digestion I should prefer to call it. As a result of this action we have, first, the local hyperemia and, second, the constitutional effect. In other words, the tuberculin becomes poisonous by an immune reaction directed toward the tubercle bacillus. This reaction is defective and in so far dangerous to the host. The only way in which the danger can be met is for the body to produce an antibody to this second substance. So far there is little evidence to show that the body is able to produce this in any amount. The animal body has learned to protect itself by suppressing multiplication rather than by attempting to neutralize such poisons.[10]

10. This secondary poison is probably of the same nature as the aggressins recently brought forward by Ball.

This theory of the tuberculin reaction as stated above is similar to the one proposed by A. Eber[11] nearly ten years ago. According to him the action of the tubercle bacillus raises the physiologic activity of the tissue involved in disease to such a height that it becomes capable of acting on the tuberculin and splitting off from it a toxic pyrogenic substance called by him tuberculopyrin.

My own interest in the tuberculin reaction was aroused by the query why a dose of dead tubercle bacilli can make the body sensitive while a corresponding amount of tuberculin does not. The reason why the injection of tuberculin as such does not lead to a subsequent tuberculin reaction as a result of one or several doses lies in the fact that tuberculin after injection is distributed throughout the body. Each cell receives but a brief exposure to a very minute quantity and probably much is eliminated unused. When dead bacilli (or even living ones) are introduced they soon settle down, and, the process of disintegration being very gradual, the tissues in which they are deposited receive a continuous, even though infinitesimal amount of tuberculin from the bacilli, and as a result of this persistent stimulus over a small area the tissue becomes focally active.

If this theory be true, the effect of the old tuberculin in establishing resistance appears in a new light. It would, first of all, exercise its chief function of being converted into a poison. During this conversion it uses up the antibody of the tuberculous focus. The benefit to be derived from it would be, first, in stimulating the reproduction of this antibody in the focus and around it, and, secondly, to accustom the body gradually to the action of the secondary poison set free from it. According to Koch, it would be antitoxic, but in a very roundabout way. Nevertheless, the use of the very minute doses now generally advocated may accomplish a kind of one-sided resistance, which large doses, as given in the past, might strain and even injure. This view would also oppose doses of tuberculin which set free enough toxin to cause fever, and this mode of administration has been interdicted.

This theory, furthermore, harmonizes with certain recent experiments which show that tuberculin reactions are diminished in severity when accessible foci are removed before injecting the tuberculin.

The gradual loss of the tuberculin reaction may be accounted for in one case by the tissues becoming gradually accustomed to the secondary tuberculin poison, in one another by the subsidence of the active process and the gradual loss of the antibody production on the part of the healed or quiescent focus, in a third by a temporary exhaustion of the antibody which activates the tuberculin in the focus. It is well known that in cattle the tuberculin injection following another similar one at a short interval appears earlier and is weaker and shorter in duration than the first or it may not appear at all. If twenty times the initial dose be injected reaction does occur, but here we may have other substances enter which were present in the small dose in insignificant amount. Just as in diphtheria toxin the toxon elements began to appear when we gave up the ten-minimum fatal dose for the fifty or one hundred in testing the strength of antitoxins.

That I should have given preference to heated tubercle bacilli as immunizing agents rather than to the old tuberculin is obvious from the theory of action of the latter which I have formulated. Fully a year before I

11. Deuts. Ztschr. f. Tiermed. XXI, p. 31.

began my experiments with tuberculin Koch, in 1897, had issued his new tuberculin T.R., which consisted of the ground, unheated bodies of tubercle bacilli. This was a distinct theoretical advance on the old tuberculin and was abreast of the new views of immunity. The old conception of the direct curative action of tuberculin had been abandoned. The issuing of the bacilli *in toto* tacitly acknowledged that the body must become immune to the entire bacillus and its metabolic products, for as long as we do not know which substance of the bacillus plays the most important and decisive rôle in arousing the defensive reaction of the body we must inject all of them.

There have been many other investigators working along similar lines. Some have kept us regularly informed of their forward and backward movements in this puzzling territory; others have kept to themselves their wanderings. The literature has grown to stupendous proportions, and any one who enters this field with any suggestions or theories is certain to do injustice to some precursor, for almost every possible interpretation has been stated somewhere before.

Among the more thorough and distinguished investigators a few may be mentioned. Maragliano has essayed immunity with the watery extract of tubercle bacilli and has studied assiduously the various toxins of the bacillus. Denys has tried to immunize with the bacteria-free filtrate of cultures. There have been notable contributions to the chemistry of the tubercle bacillus by Kühne, Ruppel, Levene, de Schweinitz and others. The noteworthy work of Trudeau, Baldwin and their associates has greatly contributed to the steadying of our advance in the knowledge of immunity and its bearing on clinical medicine. These observers have also been untiring in separating the wheat from the chaff of that which has come to us from abroad. Very recently Behring announced the use of tubercle bacilli for immunization or treatment which, according to brief reports, have been extracted with water, 10 per cent. salt solution and, finally, alcohol, ether and chloroform. With this bacillar skeleton, as it were, he expects to obtain better results. The details of the process are not yet generally known.

The attempts at the preparation of a therapeutic serum I shall pass over, since there does not yet appear to be a very satisfactory experimental basis for estimating its efficiency. It will in any case remain of merely theoretical interest in the cure of tuberculosis, owing to the difficulty of preparation and the probable cost.

In spite of this array of painstaking contributions to the biochemistry of the tubercle bacillus and the relation of its various component elements, secretions and metabolic products to the production of immunity, we still appear to be at the beginning. The recent studies of Koch, Behring and Pearson in bovine immunity produced by the intravenous injection of living human bacilli, and the same experiments of Trudeau on smaller animals, bring us back to the old principle first brought out by Pasteur in 1880 in his studies of protective inoculation toward fowl cholera. We have not only retraced our steps to the whole bacillus, but even to the living attenuated bacillus.

A very pertinent question, one which has undoubtedly been put by every physician and experimenter dealing with tuberculosis, suggests itself here: If immunity does not appear in the course of tuberculosis, why should we expect to produce it by artificial means? An answer to this question involves many factors, on only one of which I shall touch.

Immunity in tuberculosis consists of two elements, the focal or local immunity due to the multiplication of tubercle bacilli in a given territory, and a less pronounced general immunity due to the biochemical activities of the local process. If the general immunity becomes quite strong, or if the original resistance is so great that a little impulse makes it complete, then a second attack is not likely to occur. This, alas, is not ordinarily the case.

Granted that the first infection manifests itself, as a rule, in certain lymph nodes, two different results may be looked for. Either it leaves an immunity which promptly fixes the next invader, closes in on him so that multiplication is speedily checked, or else in the less responsive the second invaders, lodging in the lungs themselves, may prove disastrous, owing to the destructibility of the lung tissue itself and the chance for secondary infections. This would mean that in the first type of individual the early infection protects against a second; in the second type, the first apparently, but not really, predisposes toward a second, the distinction being due to a difference in the rousing of immunizing factors.

In cattle the short life of the individual does not enable us to realize much from a study of primary and subsequent infections, but the impression that I have gained from a careful repeated study of the autopsy notes is that old lymph-node tuberculosis is rarely associated with fresh pulmonary disease. Cattle, I believe, are nearly immune and it requires but a little to tip the scales in favor of the host.

The acquired general immunity following the first attack is shown in a variety of ways. Experimentally the second local lesion in the guinea-pig, as pointed out by Koch, is a different process from the first. Clinically, the lymph-node tuberculosis of childhood later becomes an organ tuberculosis. The bacilli are literally held up in the portal of entry, and pulmonary disease becomes the type of the second stage or of later life. The first infection of the intestines lodges and multiplies in the mesenteric lymph nodes. When lung disease is established and the sputum is swallowed, tuberculous lesions of the mucous membrane are very common; those of the lymph nodes, slight or absent. Behring is quoted by some one as stating that this infection is due to a hypersensitiveness. I should say a partial immunity, for here also the bacilli are held up at the place of entry. These facts were noted long ago, but not explained, by Weigert,[1] as stated at the beginning of the article.

To the physician this phenomenon of repeated infection meant no immunity. And, indeed, so far as the patient is concerned, it is as good as none. It is more dangerous owing to secondary infection, but it carries in it the germ of possibilities, namely, the immunization to a degree which will totally prevent the second attack. In the meantime it may not be amiss to point out here the true significance of protecting patients from repeated infection. I should place this among the most important of the details of treatment, and it is not to be denied that the careful protection afforded tuberculous patients nowadays in sanatoria may have a powerful influence in raising the percentage of recoveries. To this opportunity for repeated infection on which I would place much more responsibility than on diffusion of early or latent infection in the body itself, there must be added the chance of acquiring tubercle bacilli of much higher invasive powers and, therefore, more dangerous.

At this point I may be permitted to digress a moment to refer to the peculiar localization of tuberculosis in the upper or cephalic lobes of the lungs. Numerous attempts at explanation have been made chiefly on anatomic bases. Some would make pulmonary disease hematogenous in origin, the infection coming from some disrupted primary focus, probably a caseous lymph node. The following evidence offered by experimental and comparative pathology on this puzzling phenomenon is somewhat contradictory, but suggestive.

I have already stated that in the spontaneous disease of cattle the largest or caudal lobes are most frequently diseased primarily or else those lymph nodes associated with them. The smaller cephalic lobes are more often secondarily diseased from aspirated caseous matter. This is as we should expect to find it if the germ lodges and multiplies where we should expect most bacilli to lodge.

Some years ago I noticed in several rabbits which had been inoculated into the ear vein with human tubercle bacilli and kept a long time the following peculiar condition: The bacilli which ordinarily are deposited in every part of the lungs and which, if virulent, fill the entire lung tissue with tubercles, had been suppressed and destroyed excepting along the thin border of both cephalic lobes, which were solid and tuberculous. It is probable that this condition can be frequently induced if the tubercle bacilli are very finely ground before injection so that large masses may not lodge and inevitably produce foci anywhere. These two facts, the spontaneous disease in cattle and the induced disease in rabbits, both favor, one negatively, the other positively, the hematogenic origin of tuberculosis of the upper lobes in man; but there is a third element in the form of a general principle which, to my mind, holds the balance. This may be briefly stated as follows:

Bacteria multiplying by preference in certain localities as *loci minoris resistentiæ* will reach these places if they have access to them through the blood or through natural openings. For example, typhoid bacilli injected into the blood will probably cause ulceration of the intestinal lymph apparatus just the same as if ingested. Applying these various data to pulmonary disease, there is no more reason to assume the suppression of tubercle bacilli entering by one route, the air, than by the other, the blood. I am myself inclined to believe that the bacilli inhaled are suppressed and destroyed except in the apices in susceptible individuals.

(To be continued.)

A PLEA FOR THE INTERNATIONAL STUDY OF CARCINOMA.*

NICHOLAS SENN, M.D.

Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.

CHICAGO.

"Sed opertet privatis utilitatibus publicas, morbis eternas anteferre; multoque diligentius muneri [illegible] consulere, quam facultatibus."

INTRODUCTORY REMARKS.

Humanitarian Service.—From time immemorial the medical profession has been in search of ways and means to reduce the sum of human suffering in its efforts to prevent and treat disease.

The physicians of all times, more than any other class of men, have devoted a large part of their time, talents and energies to promote the happiness, welfare and usefulness of their fellow-beings without any expectation of a pecuniary gain for their unselfish, self-imposed and often arduous task.

The philanthropic spirit has always animated medical men and their organizations, large and small. A liberal part of the transactions of the medical societies throughout the entire civilized world is devoted to subjects which have a bearing on the prophylaxis of disease. The public will never realize the vast amount of work that has been done in this direction by the mass of the profession inspired by men of the highest scientific attainments. The growing knowledge of the real cause and nature of disease, the outgrowth of original research and accurate scientific investigation by a host of earnest students the world over has already resulted in erasing from our nomenclature a number of formidable diseases and in limiting the spread of deadly epidemics.

Preventive Medicine.—The crowning glory of our profession in the future will be preventive medicine. The sphere of the general practitioner will become more and more circumscribed; that of the scientist will expand and keep step with the progress and advancements of preventive medicine. Rational preventive medicine had its origin contemporaneously with the foundation of the new science of bacteriology, and its further development and sphere of usefulness must necessarily depend on the progress and expansion of the latter. We may confidently look to the near future for more men like Jenner, Haffkine, Lister, Pasteur and Koch, who will do their good share in blotting out preventable diseases.

Surgery has not been idle and has contributed its liberal part toward reducing the death rate and diminishing human suffering. Based on the teachings of Pasteur and Lister, a system of aseptic and antiseptic precautions has been gradually perfected which is now in force wherever modern surgery is practiced and which has been the means of almost entirely eliminating from wound complications the disastrous affections due to infection and has greatly increased the range of operative procedures. Primary healing of wounds is now the rule, instead of the exception, as was the case only a quarter of a century ago. Hospital gangrene, the black monster of military and civil hospitals less than half a century ago, has disappeared from the face of the earth never to return. Erysipelas and pyemia have become pathologic curiosities. Secondary hemorrhage, such a frequent and dangerous occurrence formerly, seldom now disturbs the peace of mind of the operating surgeon since he has come in possession of the aseptic absorbable ligature.

CARCINOMA A MYSTERY.

There is one dark chapter in surgery to which I wish to call your attention on this occasion, and in which I desire to enlist the interest of the medical profession throughout the entire world—it is carcinoma. It is an old, old subject, which has interested the profession for centuries and, which, notwithstanding the prodigious efforts which have been made to solve the mystery of its real cause and nature, remains unexplained. Carcinoma is so common and, according to recent statistics, unquestionably on the increase that it behooves our profession to make use of every possible means and avenue to discover its real cause and nature and, having accomplished this, to open up the way for its prevention and more successful treatment.

* Oration for the United States, delivered before one of the general sections of the Lisbon International Medical Congress, April 19-26, 1906.

The prevalence of this disease, its relentless course and obstinacy to all known methods of treatment surround it with the gloom of fear and hopelessness to the public. By hearsay and observation the masses of the people are firmly impressed with the idea that carcinoma is a fatal disease, and when such a diagnosis is made it is regarded as a death sentence. The medical profession is equally aware of the painful fact that in the great majority of patients afflicted with this disease it proves fatal within three to five years, and that the only cases which recover permanently are those in which an early radical operation is performed.

A LOCAL DISEASE.

One feature of this dreadful disease has been definitely settled, and that is that it begins as a local affection, and it is in this stage that it is amenable to successful treatment by an early radical operation, and it is safe to state that not more than 25 per cent. of all the patients who apply for surgical aid are within reach of successful operative intervention. Left to itself, the intrinsic tendency of the disease is to destroy life. Its malignant course is not influenced by any kind of internal medication or local treatment short of complete destruction or removal of every vestige of carcinoma tissue. The prevention and successful treatment of any disease depend on the neutralization or removal of its cause. Material progress in the treatment of carcinoma can only be hoped for after we have succeeded in demonstrating its essential cause.

NON-PARASITIC.

The most intense interest in the study of carcinoma was awakened with the origin and rapid growth of the modern science of bacteriology. As soon as it became known that all inflammatory processes are caused by specific pathogenic micro-organisms it was very natural that, by reasoning from analogy, the conclusion was reached that carcinoma must be a parasitic disease. There are so many similarities between chronic infective diseases, notably tuberculosis and carcinoma, that we can readily appreciate the motives that led to the investigations in all parts of the civilized world concerning the microbic origin of carcinoma. Various methods of tissue staining, cultivation and inoculation experiments have all been utilized by thousands of earnest investigators in their strenuous efforts to discover and prove the essential microbic cause of carcinoma. A number of intracellular and extracellular bodies have been found and described as the specific parasitic cause of carcinoma, but for none of them has the claim been substantiated by crucial impartial laboratory and clinical tests. Searching criticisms from different reliable sources have disarmed all such claims.

From an etiologic standpoint, very little has been added to our knowledge of the nature of carcinoma since the epoch-making researches of Virchow, Cohnheim, Thiersch and Waldeyer. The pathology of carcinoma has been materially advanced by the most painstaking and accurate microscopic work concerning the origin, growth, multiplication and life history of the carcinoma cell and its manner of local and general dissemination. The atypical, irregular mitotic figures which are seen in the segmenting carcinoma cell are in strong contrast with the regular, symmetric, karyokinetic processes observed in direct division in normal tissue cells. The metastatic processes have been traced, step by step, through the lymphatic channels and the systemic circulation, and it has been demonstrated beyond all doubt that the secondary tumors are the direct offspring of migrating carcinoma cells from the primary tumor, and that the pre-existing mature tissues take no active part in the tumor formation, primary or metastatic.

This tends to prove that the histology and histogenesis of carcinoma speak against the parasitic origin of this disease and in favor of a disease of the epithelial cells independent of infection. The mass of tumor tissue, the parenchyma of carcinoma, is invariably made up of epithelial cells in the primary, as well as in all metastatic tumors, regardless of their anatomic location. Inflammatory products, on the other hand, present the same histologic structure independent of their anatomic location or character of the tissue involved. Infective processes are caused by the pathogenic action of micro-organisms on pre-existing tissue, and the inflammatory swelling is made up of the products of effusion and cell migration through the damaged capillary walls plus new tissue cells generated by the pre-existing tissues acted on by the microbic cause of the inflammation.

Carcinoma is a tumor that invariably starts from a matrix of embryonic epithelial cells of prenatal or postnatal origin, and in its growth only epithelial cells take an active part; hence, if its microbic nature should ever be demonstrated, it will be a microbe which has a special predilection for epithelial cells, a very unlikely, exceptional phase in the vast field of bacteriology. The failure to discover the microbic origin of carcinoma, together with the histology and histogenesis of the tumor, speaks strongly against the parasitic origin of the disease. Inoculation experiments have so far only proved the negative side of the question. As an additional proof of the truth of this statement I will mention an experiment which has confirmed me in the belief of the non-parasitic nature of carcinoma.

Author's Experiment.—On May 4, 1901, I inoculated myself with carcinoma tissue immediately after I had completed a radical operation for advanced carcinoma of the lower lip. The patient from whom the malignant graft was obtained was an Irishman, 60 years of age. The submental and submaxillary lymphatic glands were involved. The excised glands were immersed in a warm saline solution, and from one of them a fragment, the size of a split pea, was used for implantation. A small incision was made about the middle of the forearm, over the supinator muscles, under strict aseptic precautions. One of the margins of the skin wound was undermined sufficiently to make a pocket large enough to receive the graft. After implantation of the carcinoma graft the wound was closed with a horsehair suture and iodoform collodium. The carcinomatous nature of the glandular affection was proved by microscopic examination of the gland from which the tissue was taken. In the course of a week a subcutaneous nodule, the size of a pea, made its appearance, which remained stationary for two weeks, when it gradually disappeared. At the present time a faint linear scar remains, indicating the site of the incision. This, as well as a few similar experiments made by Alibert, furnish strong, if not convincing, proof of the non-parasitic nature of carcinoma. The bacteriologic search for the supposed microbic cause of carcinoma will continue in the future but undoubtedly will be as devoid of positive results as it has been in the past.

INTERNATIONAL CO-OPERATION INVITED.

It seems to me that the time has come when it is necessary, by joint and persistent action, to study the

etiology of carcinoma from other standpoints, and it is for this reason that I have chosen as the subject for my oration "A Plea for the International Study of Carcinoma." The vast importance of this subject merits united systematic efforts, in which representatives of all nations should take a willing active part. It is only by such concerted action that we may expect to reach the final solution concerning the true nature of this strange disease, and in doing so prepare the way for a rational and more successful treatment.

So far as our present knowledge goes, carcinoma must be regarded as a tumor caused by an atypical proliferation of epithelial cells from a matrix of embryonic cells of congenital or postnatal origin. The epithelial proliferation takes place in vascular tissue where epithelial cells are never found in a normal condition. The heterotopic location of these cells distinguishes carcinoma from all benign epithelial tumors. Atypical proliferation of epithelial cells signifies their growth and multiplication in a locality where they have no legitimate citizenship.

The malignancy of carcinoma is due to the fact that the epithelial cells remain in their embryonic state, fail to reach maturity, retain their abnormal vegetative capacity until degeneration sets in, and by virtue of their ameboid movements invade the neighboring tissues, enter the lymphatic channels and finally give rise to regional and general metastasis. It is this abnormal behavior of the epithelial cells, their prodigious vegetative capacity and their migration into all adjacent tissues, irrespective of their histologic structure, that characterizes their life history and intrinsic pathologic tendencies. What are the general influences or local conditions productive of such a morbid erratic cellular life? The disease in its incipiency being local, it would be natural to search for local causes. If this be the case, where do the first textural changes take place? Are they to be found in the epithelial cells or in the tissues in their immediate environment? These are questions that must be answered before the etiology of carcinoma is definitely settled.

FACTORS IN THE ETIOLOGY OF CARCINOMA.

That the general condition of the organism, an aptitude, has some influence in determining the disease there can be no question, but that it is entirely responsible for it is more than doubtful. If a general predisposition were the principal agent in causing the disease, autoinoculation experiments ought to have proved successful. In the case of an inoperable carcinoma of the leg, a few years ago, I implanted subcutaneously fragments of carcinoma tissue from the same patient at two points on the affected limb. A little nodule formed at the seat of inoculation, remained stationary for about two weeks, and then disappeared entirely. The same experiment has been made by several other surgeons, with a similar negative result. The microscope has proved an invaluable aid in the study of the histology and histogenesis of carcinoma, but so far it has been powerless in demonstrating its cause. Future microscopic researches may yield unexpected results, but it appears to me that the time is at hand to extend our inquiries regarding the etiology of carcinoma beyond the confines of laboratories and explore other fields less cultivated in search for its cause or causes. United action on a large scale, embracing enthusiastic investigators of all nations, concerning the influence of heredity, age, race, climate, diet, habits, trauma, prolonged irritation, chronic inflammation, scar tissue and benign tumors in the causation of the disease, could not fail in bringing more light on this perplexing subject.

Heredity.—The influence of heredity in the etiology of carcinoma is unquestionable. Every surgeon of large experience has observed cases in which the disease could be traced through several successive generations. The percentage of cases in which carcinoma has been shown to be hereditary is estimated at from 12 to 33 per cent. by different authors. More extensive and accurate statistics from all available sources are needed to prove the influence of heredity in the etiology of carcinoma. In studying the influence of heredity, it is not fair to exclude from the statistics distant cancerous relatives, as has been done by Cripps and others, because it is well known that congenital deformities, physiognomy and mental peculiarities frequently reappear several generations apart and in distant relatives. There is no reason to doubt that at least a predisposition or aptitude for carcinoma is transmitted in a similar manner.

Age.—It is a familiar fact that advanced age plays an important rôle in the etiology of carcinoma. Of the 9,906 cases collected by De la Camp, there were only 19 less than 20 years of age. I have seen a carcinoma of the mammary gland in a girl, 21 years of age; a carcinoma of the rectum in a boy of 17, and several cases of carcinoma of the stomach in persons between 25 and 30 years of age. There appear to be conditions, local or general, antagonistic to carcinoma during the most active physiologic processes concerned in the growth and development of the body, and the disease manifests a special predilection for the aged when all the active processes in tissue formation are on the decline. Age has also a decided influence on the clinical course of carcinoma, as it is well known that its malignancy diminishes with advancing age. The senile state favors the development of the disease, but exercises an inhibitory influence on its progress, while, on the other hand, the juvenile tissues are antagonistic to it, but when it does occur in young subjects it pursues an unusually malignant course. The influence of age on the prevalence and malignancy of carcinoma merits more careful study in searching for the key that will eventually unlock the mystery of its etiology.

Racial and Social Influences.—It is a well-known fact, confirmed by reliable and extensive statistics, that some races are much more predisposed to carcinoma than others. The black and yellow races are not as susceptible to the disease as the whites. Our North American Indians have been and still are peculiarly exempt from this disease. As a rule, to which there are few exceptions, it may be stated, without fear of contradiction, that the primitive races, as long as they remain true to their original habits, customs and manner of living, seldom suffer from carcinoma; on the other hand, the disease is most prevalent where civilization has reached its climax. This difference in the prevalence of carcinoma among the ignorant and educated, the savage and the highly civilized, is undoubtedly due, to a large extent, to diet, brain rest on one side and a strenuous life, worry and discontent on the other. That the state of the nervous system plays a part in the etiology of carcinoma I am satisfied and have seen it repeatedly demonstrated in my practice. Future statistics based on racial and social influences will bring out many important facts that may forge the connecting link in the long chain of evidence necessary to reach the final aim of etiologic research.

Climate and Topography.—The very unequal geographic distribution of carcinoma over the surface of the earth points to local conditions, climatic, racial and dietetic, which favor or inhibit the development of the disease. Like lepra, carcinoma has its favorite geographic haunts. A careful study of the local conditions where carcinoma is most prevalent should form an important part of future researches relating to the etiology of this disease, and, if done on a large scale by the most competent men in such localities, may lead to important results.

Legrain makes the statement that carcinoma is unknown in Algeria, except as it appears in the European. Behla has made a study of the geographic influences in the causation of carcinoma. According to his observations, it is very rare in the extreme northern and southern countries. It occurs with greatest frequency in the temperate zones of Europe, Asia and America. It is very rare in Central Africa, the South Sea Islands, Central America, and almost unknown in New Guinea. Haviland, in his researches, found the disease in the same latitude most prevalent along river courses and in localities subjected to periodic floods, while it is less frequent in high altitudes and in the spring districts at the river sources. It was a noteworthy fact that geologically the alluvial soil appeared to constitute a local cause, while a chalky or lime soil exercised the opposite effect. Heimann made similar inquiries and came to the same conclusions.

Diet.—For a long time popular belief has accused certain articles of food, such as meats, tomatoes, condiments, as causes of carcinoma. Verneuil and Reclus long ago called attention to the fact that herbivora were much less liable to carcinoma than the carnivora, and they ascribed the great increase in the number of patients suffering from carcinoma that came under their observation during forty years to the increased consumption of meat by the laboring classes. That diet may have some influence as a predisposing influence there can be no doubt, but to assume that it is the sole or even the principal cause of carcinoma would be a position which is not sustained by facts.

During my trip last summer to the very heart of the Arctics to within 650 miles of the North Pole, I made special observations and inquiries in reference to the occurrence of tumors among the aborigines. These people have lived for unknown centuries on an exclusive animal diet, blubber and meat; they do not know the taste of a single article of vegetable diet; they are the filthiest people in the world, as they never wash themselves, and wear fur throughout the entire year, and yet they appear to be immune to tumor formation of any kind. The idea occurred to me that this immunity might be due to the iodin contained in the food obtained from the sea animals.

The North American Indians, who in their primitive state lived largely on an animal diet, were likewise singularly free from tumor formation, more especially carcinoma. The subject of diet as a causative element of carcinoma deserves further and more thorough and systematic investigation.

Habits.—Certain habits appear to be conducive to the occurrence of carcinoma. Habits and occupations which expose certain parts to repeated and prolonged irritation deserve special mention here. I will refer to two only as most striking illustrations, smoking and betel chewing. Justly or unjustly, smoking has been accused for a long time as being a frequent cause of carcinoma of the lower lip, tongue and tonsils. The clay pipe has an unenviable reputation in this respect in cases of carcinoma of the lower lip, and probably deservedly so. It is singular, however, that in many countries where cigarette smoking is practiced to the greatest excess, like Turkey, Palestine, Algeria and Morocco, carcinoma of the lip and mouth is of rare occurrence. The vice of betel chewing, so generally practiced in Ceylon and all through India, is unquestionably responsible for the frequency with which carcinoma of the mucous lining of the mouth is met with in those countries. The principal constituents of "betel" are the betel leaf, areca nut, caustic lime and some sort of a strong condiment, all powerful irritants of the mucous membrane. The disease effects the buccal surface of the cheek, generally commencing opposite the teeth of the lower jaw and spreading with varying rapidity according to the pathologic type of the tumor.

Trauma.—The influence of traumatism in the etiology of carcinoma is variously estimated by different authors. Trauma exercises a more important rôle in the causation of sarcoma than carcinoma. In most cases in which an alleged single trauma has been charged with having caused the disease, the carcinoma was present when the injury was received, the injury having called the patient's or physician's attention to it. Carcinoma seldom, if ever, follows a single injury, but develops more frequently in consequence of

Prolonged Irritation.—Frequently repeated and long-continued irritation is a generally recognized exciting, if not the principal, cause of carcinoma. Certain occupations, habits, malposition and diseases of teeth and displacement of organs due to abnormal sources of irritation must be included under this category as agencies which so often precede carcinoma and which must be regarded at least in the light of determining causes, as without such local harmful action the disease might not have made its appearance. The local irritation effects tissue changes conducive to carcinoma formation in persons who are the subjects of a hereditary or acquired predisposition or aptitude to the disease. It would be well to study more thoroughly and on a larger scale, experimentally and clinically, the effect of chronic irritation on the etiology of carcinoma.

Chronic Inflammation.—While the histologic processes observed in inflammation have nothing in common with carcinoma, clinical observations appear to prove that carcinoma not infrequently develops in an organ or part which is the seat of a chronic inflammation. It is not at all uncommon to find a carcinoma take its starting point in ulcers of the stomach and chronic ulcers of the lower extremities, in tubercular lesions of the skin, and in chronic inflammatory affections of the mucous membrane of the tongue and other organs. Goodhart has called special attention to ichthyosis of the tongue as a cause of carcinoma. It has been well known for a long time that this superficial inflammation of the tongue frequently precedes carcinoma.

Another inflammatory product, very often the starting point of carcinoma, is the wart. Warts on the forehead, cheeks and hands of aged persons, "verruca senilis," most frequently undergo such malignant transition. The inflammatory process is undoubtedly concerned in laying the histologic foundation for carcinoma by causing the penetration of embryonic epithelial cells into the inflammatory product, where they are brought in contact with vascular tissue, which in-

creases their vegetative activity and alters their habits of life.

The influence of chronic inflammatory processes involving the epithelial cells of glandular organs and the surface of the skin and mucous membranes as one of the causes of carcinoma should receive more careful attention than has been devoted to it. Extensive and reliable statistics on this phase of the etiology of carcinoma is what is needed in the further elucidation of this subject.

Scar Tissue.—The origin of carcinoma in scar tissue has been so often observed that German surgeons designate it as "Narbenkrebs." The tumor almost invariably begins as a subepidermal nodule from a matrix of embryonic epithelial cells buried in the mesoblastic tissues during the process of healing by granulation of the injury or lesion which gave rise to the tissue defect.

Trauma, irritation, inflammation and cicatrization as causes of carcinoma undoubtedly play a double rôle in lighting up the disease in persons predisposed to it, as any of them may be the means of transporting the essential tumor elements, epithelial cells, from their normal vascular physiologic habitat into a vascular district and may likewise be concerned in stimulating their vegetative life by diminishing the normal physiologic resistance of the adjacent tissues.

Benign Tumors.—The frequency with which benign epithelial tumors undergo transformation into carcinoma remains a matter of individual opinion and isolated experience. In papilloma and adenoma the epithelial cells which make up the parenchyma of the tumors are not in touch with the blood vessels. Any and all influences, local and general, which are capable of stimulating cell growth beyond the limits observed in benign tumors, and which result in penetration of the membrana propria by embryonic epithelial cells, are the causes on which depends the transition of a benign epithelial tumor into a carcinoma.

Among the local causes which bring about such a malignant transformation may be enumerated trauma, prolonged or repeated irritation, and incomplete removal of the benign tumor by excision or the employment of caustics. Benign tumors on exposed surfaces of the body are most prone to become malignant, because they are most subjected to injuries and irritations which result in histologic changes favorable to the development and growth of carcinoma. From a scientific as well as a practical point of view, it is extremely important that by concerted action more light should be shed on the frequency with which benign epithelial tumors become the starting point of carcinoma and the influences which determine such transition.

CONCLUDING REMARKS.

I have only briefly alluded to a number of the most familiar conditions, influences and lesions which are known to favor the origin and growth of carcinoma, with a view of inciting a more general and concerted interest in the study of the etiology of this disease outside of laboratory methods. Laboratory research will be carried on until the real cause of carcinoma has been discovered, but this method of investigation will receive material, if not essential, aid by a more careful and extended inquiry concerning the relations of what might be designated as some of the exciting or predisposing causes of the true nature of carcinoma.

I would like to see this congress take the initiative for the international study of carcinoma in all its phases, but with special reference to its etiology as influenced by the agencies which I have enumerated. For this purpose a committee should be appointed representing all nations who have sent delegates to this international gathering, and this committee should be requested to report the results of their investigations at the next meeting of the Congress.

I am confident that earnest, united work on such a large scale, representing practically the entire inhabited surface of the earth, would contribute invaluable material for the final discovery of the essential cause of carcinoma. Investigations on such a basis may finally lead to a successful treatment of carcinoma, without resort to the knife, by the employment of remedies which will either destroy the abnormal cells or cause them to reach maturity, either removing the tumor or rendering it stationary.

It is the duty of the medical profession to lend every effort toward accomplishing this object, as the old sentiment ever remains true:

"Salus populi lex suprema est."

SIXTEEN YEARS' EXPERIENCE WITH FORMIC ACID AS A THERAPEUTIC AGENT.*

HEINRICH STERN, M.D.
NEW YORK.

My attention was first drawn to the medicinal qualities of formic acid by a semi-secret preparation styled by its manufacturer, Hensel, "Ferrum formicarum oxidatum oxydulatum." This was in 1888. The same or a similar preparation is now sold by a homeopathic drug house under the name of "Hensel's tonicum."

HISTORICAL REVIEW.

There is no doubt in my mind that Hensel's formic acid compound is a latter-day transformation of Hoffmann's "Vinegar of Magnanimity," in which a preparation of ants played the leading rôle. In the seventeenth century this famous vinegar had found entrance in all European courts and was employed by men and women as a general tonic, stomachic and diuretic, and probably also as an aphrodisiac. For formic acid seems to possess certain qualities stimulating sexual appetite (in South America a species of large ants are consumed), and the proprietary tonics demanding a good sale, as a general rule, are those which increase sexual desire.

Otto Braunfels, a German botanist and physician (1188-1534), to whom Linnæus refers to as "the father of botany," already drew attention to the fact that an acid fume reddening blue vegetable colors emanated from ant hills. Formic acid, however, was first isolated and discovered by J. Wray or Rey in 1670 by distilling red ants with water; others ascribe the first isolation of this substance to Samuel Fischer (1670). Marggraf, in 1749, experimentally proved the dissimilarity of formic and acetic acids. Döbereiner, in 1822, produced formic acid artificially by the oxidation of tartaric acid with manganese dioxid and sulphuric acid thus:

$$\begin{matrix} CH(OH)\,CO.OH \\ | \\ CH(OH)\,CO.OH \end{matrix} + MnO_2 + H_2SO_4 = 2H.CO.OH + 2H_2O + 2CO_2$$

Tartaric acid + Manganese dioxid + Sulphuric acid = Formic acid + Water + Carbon dioxid.

Berzelius and Liebig devoted much time to the minute study of formic acid.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

PREPARATION OF FORMIC ACID.

Formic acid is prepared in different ways. The best mode of obtaining it is by heating equal weights of oxalic acid and glycerin to a temperature of 100 to 110 C. for about fifteen hours, when carbon dioxid is given off and dilute formic acid distils over. The dilute acid may be concentrated by saturating it with lead carbonate or lead oxid, after which the mixture is filtered and evaporated to a small bulk (complete dryness). The dry lead formate, reduced to a fine powder, is then heated in a glass tube connected with a condensing apparatus, through which a current of sulphureted hydrogen is passed. The glycerin apparently exerts no chemical action, but seems to bring about decomposition of oxalic acid at a lower temperature than would otherwise be necessary. At a temperature above 110 C. decomposition of the formic acid would ensue.

The name formic acid is an appropriate one, for, as is well known, the ant, especially the red ant, *Formica rufa,* ejects, when irritated, a secretion, the greater part of which is composed of formic acid. Ants, however, are not the only insects which produce the acid. This substance is produced or accumulated in a special gland from which, by means of the sting, it finds its way under the skin, where it gives rise to a local inflammatory process. Bees impart some of their formic acid to the honey. The acidity is particularly noticeable in fresh honey of wild bees. In domestic medicine, honey at one time was considered to be a good preventive of diphtheria. The formic acid contained in it is said to inhibit the growth of the Klebs-Loeffler bacillus. The diuretic qualities of certain isopoda, like *Armadillo officinalis* and *Oniscus asellus,* have also been ascribed to the formic acid which they contain. Free formic acid is also contained in the leaves of the stinging nettle, *Urtica urens,* and in other plants, and it has been demonstrated in unripe grapes. Being a decomposition product of vegetable débris, it is very likely the potent medicinal constituent of mud baths. The mud bath acts as a local rubefacient.

REVIEW OF LITERATURE.

The effect of formic acid or the formates on the animal organism has not been studied exhaustively. Mitscherlich was the first[1] to bestow more than casual attention on this question. He reported the following:

Rabbits were poisoned with lethal doses of free formic acid. The autopsy revealed pronounced thickening of the outer layer of the gastric mucosa without marked cellular changes; the capillary vessels and veins were engorged and showed extravasation of blood; in short, the lining of the stomach and the upper part of the small intestines was violently inflamed. The dilute acid produced the same effect but, of course, in a less pronounced degree. That the acid was absorbed was evinced by the acid reaction of the urine which in rabbits is normally alkaline. The blood appeared to be little altered. The kidneys were discolored dark red brown, and contained a large amount of blood. The urine exhibited blood and numerous cylindrical bodies. This evinced that formic acid like other acrid substances exerted a specific influence on the kidneys. In this respect they acted in a similar manner to cantharides.

The toxic state due to formic acid, according to Mitscherlich, is different from that due to any of the other acids he had experimented with. The experiment-animals become restless and excited. Asthenia supervenes only after some hours. Death ensues after a period of mild convulsions and difficult respiration.

According to the same author, formic acid is a very violent poison, as half an ounce of a liquid containing in 100 parts 7 parts of the acid caused death after twenty-four hours, and two drams even called forth marked poisonous symptoms. The acid in the same dilution applied on the skin of various individuals caused but a slight burning sensation; the pure acid, on the other hand, gave rise to a severe inflammatory process which only subsided after a number of weeks.

Rabuteau,[2] in experimenting with formic acid and sodium formate, came to different results. He showed that the acid is again eliminated by the urine as a carbonate (combined with alkali), and that it has no deleterious effect on the organism if administered as free diluted acid or if combined with sodium. He took 3.5 gm. of sodium formate without experiencing any undue effects.

Arloing[3] observed the action of sodium formate in dogs and horses, and found that it diminishes cardiac activity and lowers the blood pressure and the temperature. Massive doses, as one gram per kilogram body weight, cause death by cardiac paralysis.

Hoffmann[4] studied the influence of formic acid on the lower organisms. Infusoria became immediately paralyzed in dilutions of the acid down to 0.1 per cent. Their body-contents were rendered dark and granulated and finally the enveloping membrane burst in most organisms. Bursting of the infusoria could not be observed in a 0.01 per cent. solution of the acid, although all other phenomena were still well marked.

A leech put into a beaker containing formic acid in 0.25 per cent. dilution immediately contracts its body and relaxes it again and makes vain attempts to escape from the vessel. Its movements, at first lively, gradually become weaker and after twenty-five minutes the leech is dead. The same phenomena occur in the 0.1 per cent. solution of the acid, but death ensues only after fifty minutes. Placed in a 0.05 per cent. solution of formic acid, the leech immediately fastens itself on the glass and performs moderate movements with the free end of his body. After five minutes it tries to get out of the fluid; again placed in the solution, the animal fastens itself again, renewing at the same time its movements, and attempts to escape. The leech becomes gradually weaker, and after fifty minutes the sucking discs no longer work. The movements cease temporarily while the animal lies on its side contracting its body vehemently. After two hours neither spontaneous nor reactive movements are perceptible. In a 0.01 per cent. solution of the acid the leech apparently was not disturbed, but twenty-four hours after it was found dead at the bottom of the vessel. A leech put for control purposes into a 0.05 per cent. solution of acetic acid fastened itself at once on the wall of the vessel and remained in a quiescent state. The animal was found in the position after twenty-four hours, although means to escape were offered it. In the same dilution formic acid caused the death of the leech in two hours.

Frogs placed in a beaker containing 100 c.c. of a 0.5 per cent. solution of formic acid at once make attempts

1. Mitscherlich: "De acidi acetici, oxalici, tartarici, citrici, formicici et boracici effectu in animalibus observatio," 1845. See also Hoffmann: "Experimentelle Untersuchungen ueber die Wirkung der Ameisensæure, 1884.

2. Abstract from Gaz. med. de Paris, 1871, in Jahresber. ueber die Fortschr. d. Pharmakognosie, Pharmacologie und Toxikologie, 1872.

3. Abstract from Bull. gen. de therapie, 1879, in Jahresber. ueber d. Fortschr. d. Pharmakognosie, etc., 1879. Both quotations after Hoffmann.

4. Hoffmann: Experimentelle Untersuchungen ueber die Wirkung der Ameisensæure, 1884.

to escape; after fifteen minutes the animal suddenly falls on its abdomen, holding its head above the fluid and making violent motions with its hind legs. Soon it becomes unable to rise and its head droops down. The extremities are moderately rigid after twenty-five minutes. This rigidity slowly increases and becomes more general, so that in fifty minutes the animal gives the impression as if it were frozen; an hour and a half after starting the experiment it is lifeless. The blood spectroscopically examined exhibits the bands of oxyhemoglobin. In a 0.5 per cent. solution of acetic acid a frog lived for two hours and a half. In this frog muscular rigidity did not ensue.

Hoffmann also inquired into the antiseptic and antifermentative properties of formic acid. He found that free formic acid in a solution of 1 per cent. prevented even the slightest degree of putrefaction; that a 0.5 per cent. solution averted putrefaction of Buchholtz's nutrient (distilled water 100 c.c., commercial rock candy 10 gm., ammonium tartrate 1 gm., and potassium phosphate 0.5 gm), and that a 0.25 per cent. solution exerted a definite but limited preventive influence on putrefaction. He showed that the conversion of albumin by pepsin and hydrochloric acid is not prevented if as much as 1 per cent. of formic acid is contained in the digestive fluid, and that formic acid can not replace hydrochloric acid in proteid digestion.

Sodium formate inhibits proteid digestion by combining with the hydrochloric acid to form sodium chlorid, setting free thereby formic acid. Fermentation, of course, is also inhibited when the liquid to be fermented contains formic acid in rather large proportion; in greater dilution, however, as demonstrated by the same observer, formic acid exerts a stimulating influence on the process of fermentation. It appears that the activity of the yeast cell is enhanced when high dilutions of formic acid are added to the glucose solution.

The latter observation I am able to corroborate to a certain extent. I found that while in dilution of 1 to 3000 formic acid suppresses the development of bacteria in weakly acid media like beer, and while in dilutions of 1:7000 and 1:10000 the bacteria are rendered more or less inactive; culture, as well as wild yeasts, thrive very well and often times become even more active in these dilutions.[5]

During the last few years a number of investigators (notably French) have studied the antiseptic, antifermentative and clinical possibilities of formic acid. Concerning its antiputrefactive and antifermentative qualities, they have, in substance, not gone far beyond Hoffmann's experiments; concerning its clinical value they have said nothing. We owe thanks, however, to the French clinicians for having resuscitated from oblivion this very potent remedial agent.

The effect of formic acid on the healthy human organism as studied by me is as follows: In doses of two drops, well diluted, it gives rise to no symptoms besides an occasional irritation in the throat and a feeling of warmth and emptiness in the stomach. In doses of five drops it causes a slight irritation in the pharynx and larynx; in 10-drop doses it exerts mild diuretic and diaphoretic influence; in 20-drop doses it produces the same phenomenon, but in a more pronounced degree and gives rise to contracting sensations in the pyloric region when the stomach is empty. Administered to the amount of from 3 to 4 c.c., very well diluted, and when the stomach is empty, it causes dryness in the throat, ringing in the ears, slight vertigo, burning sensation in the gastric organ and sometimes mild pyloric spasms, lassitude, slight motor disturbances and elevation of temperature of from one-half to two degrees, which latter is followed after half an hour or an hour by marked perspiration and increased micturition. In doses of 0.5 to 1 c.c., repeated three or four times a day for some weeks, it acts as a muscular excitant in some instances. Clement[6] states that formic acid augments muscular force, activity and resistance. By its action on the muscular structure of the bladder it facilitates emission of the urine and enhances the contractility of the muscles of the larynx.

There is no authentic case of fatal formic-acid poisoning on record. In very massive doses as recommended by Clement (2 to 3 gm. a few times during the day), we find not infrequently toxic symptoms, as vertigo, nausea and vomiting, albuminuria, hematuria, vesical tenesmus, dyspnea and lowered temperature. According to Lewin,[7] 1 gr. of sodium formate per kilogram of animal weight is a lethal dose.

THERAPEUTICS OF FORMIC ACID.

The therapeutics of formic acid are manifold, but indefinite. It has been employed, as we have already seen, in a similar way as cantharides to increase sexual desire. At present the people of Paris, as I have learned from a trustworthy source, are again beginning to utilize it for the same purpose. Formic acid has been turned to practical account—in years gone-by especially—in the treatment of atonic conditions of the urinary organs, vesical weakness, dropsy, paralysis and gouty and rheumatic affections, in general when a stimulant of the mucous membranes or a diaphoretic and diuretic agent was indicated.

It was often used as an external remedy, especially in the form of the *Spiritus formicarum*. This is prepared by mixing four parts of formic acid, seventy parts of alcohol and twenty-six parts of water. Topically this was employed alone or with other rubefacients, as compound spirit of angelica, spirits of camphor, etc. Internally it was prescribed in doses of from 0.5 to 2.0 c.c. several times a day. Popular medicine made use of the ants and of formic acid. Placed in little linen bags and crushed therein, the ants were pressed against the portion of the body affected with paralysis, neuralgia, gout or rheumatism, or their juice was employed by rubbing it directly into the diseased joint or muscle. At other times the ants were used for local or general baths or for inhalation (diseases of the respiratory organs) or finally in the form of fomentations. The Russian peasant prepares his ant bath in the following way: Finding an ant's nest, he puts into a linen bag the ants, their eggs and necessarily considerable dirt. Returning to his home, he plunges his bag of ants, which he has previously fastened tightly at the mouth, into the hot water of the bath. After several minutes the water gives off a very strong penetrating odor of formic acid. The bath is now ready and the invalid is put

5. Formaldehyd is partially oxidized to formic acid in the organism and excreted as such by the urine. I have repeatedly observed that the urine of diabetic patients, when these had taken urinary antiseptics (so called) which liberate formaldehyd and consequently formic acid, had no inhibiting influence on distiller's yeast which was added in order to perform the fermentation test for urinary glucose. Again, Effront, of Brussels, has lately demonstrated that yeast which has become accustomed to gradually increased amount of formol, is capable of decomposing the latter even before it attacks maltose or glucose contained in the liquid.

6. Lyon Medical, Feb. 26, 1905.

7. Lehrbuch der Toxikologie, 1897.

into it. In certain diseases of the respiratory organs the fumes emanating from the decoction are inhaled by the patient.

Looking over the field of formic-acid therapeutics we find that it was and still is chiefly employed as an epispastic. It has been generally utilized on account of its vesicatory, rubefacient and irritating qualities and not on account of a well-defined chemical or constitutional action. Its employment even as an aphrodisiac or as a diuretic must be ascribed to its irritating influence. Applied to a paralyzed limb or to a rheumatic joint, its beneficial influence is solely due to its power of exciting the circulation and setting up a somewhat enduring counter-irritation. Hypodermic injection of the dilute acid into limbs affected with rheumatic conditions as practiced by Couch[8] may effect beneficial results by reason of its antiseptic qualities if a septic state underlies the local manifestation. In the majority of instances, however, it is the epispastic property of this substance which brings about an amelioration of the painful condition.

My experience with formic acid as a therapeutic agent has been obtained by its internal administration mostly, or at least in conditions in which its rubefacient qualities seemed to play an unimportant or secondary rôle. Besides using this remedy in a variety of other affections, I have tested its therapeutic efficacy in a comparatively large number of cases of gout, acute articular rheumatism, muscular pain, cancer, diphtheria, intestinal toxicoses, syphilis and phthisis.

Gout.—Internally administered in doses of from two to ten drops, formic acid does not seem to reduce the gouty state. Employed hypodermically (not in the lesion itself) in from 0.5 to 1.5 c.c. of a 2 per cent. solution, it proved equally ineffective even when it was injected three times daily for from three to five consecutive days.

Acute Articular Rheumatism.—Administered alone internally, formic acid in my hands proved of no avail in ameliorating rheumatic fever. The same must be said of its hypodermic introduction when injected into non-affected parts for eventual constitutional effects. Combined with citric acid, however, as in the following formula, I have employed it with a certain degree of satisfaction, although its efficacy can not be compared with that of sodium salicylate:

R. Acidi formici
Acidi citrici, āā ..... 5 parts
Glycerini ..... 40 parts
Tinct. cardamoni ..... 1 part
Aquæ ..... 49 parts
M. Sig.: Teaspoonful doses every two to four hours.

Muscular Pain.—Muscular pain of vague character which ceases when an ointment of salicylic acid and methyl salicylate or dry hot air is applied is not relieved by the internal continued administration of formic acid in the usual doses.

Cancer.—The internal administration of formic acid has certainly averted a quick fatal issue in a number of inoperable cases of cancer. In such cases I have usually given it in essence of pepsin which makes an excellent vehicle for its administration. A saturated formic-acid-iodin solution (about 0.5 gram iodin in 60 c.c. formic acid) has given similar results, either when administered by the mouth or hypodermically. Injected in and around the edges of the cancerous tumor (epithelioma, etc.), the iodin-formic-acid solution has given very gratifying results to some of my surgical colleagues in New York (Dr. Daniel Lewis, the late Dr. Thomas H. Manley). The advent of Roentgen-ray therapy by which similarly located cancerous growths are successfully treated prompted us to discontinue our experiments in this particular field.

Diphtheria.—Before the days of the diphtheria antitoxin I used nothing but formic acid, both locally and internally, in the treatment of diphtheritic affections. I do not remember having lost a single case of diphtheria so treated. Internally in this condition I usually gave formic acid in drop doses well diluted in water, with the occasional addition of some whisky. This dose was repeated every one, two or three hours according to the severity of the attack. When the disease was well under control the medication was continued three times a day for from four to eight days. Locally, that is to the faucial mucosa or to any other affected area of the mucous membrane, a 5 per cent. formic-acid-glycerin solution was at once applied and this was followed by swabbing with a 1 or 2 per cent. glycerin solution every few hours. To prevent the spreading of diphtheria in a family I employed locally the 1 per cent. glycerin solution, which was applied once daily to the nares and three times a day to the fauces of the healthy members.

Intestinal Toxicoses.—In toxicoses of supposedly intestinal origin I have made use of formic acid very frequently. I have already dwelt on this point.[9] Formic acid exerts a distinct antidotal value in certain forms of enterotoxicosis and even autotoxicosis. It may be taken before or after removal of the gastric and colonic contents in doses of from two to five drops, well diluted, every hour. Besides its pronounced antiseptic qualities, which it has no occasion to exhibit in genuine intrabiontic toxicosis, formic acid undoubtedly exerts a specific influence on the enteric secretion, a property which sodium formate and the other formates, ingested as such, do not seem to possess.

Syphilis.—In the secondary and tertiary stages of syphilis the iodin-formic acid solution, internally administered, has been well borne in most of the instances in which I employed it, and has been productive of splendid results in almost every case. It does not, as a rule, call forth the same degree of depression of the nervous system as potassium iodid, neither does it occasion muscular asthenia or lowered tone of the heart, which will invariably follow the prolonged administration of iodin or any of its therapeutically active salts.

The iodin-formic acid solution, which some of my chemical and medical colleagues have styled "Stern's solution," for the treatment of syphilitic manifestations is best prescribed in gradually increasing doses and in a menstruum like essence of pepsin. I had a patient who took as much as 3 c.c. of the solution three times a day. Such large doses, however, are hardly called for and may prove injurious to the gastrointestinal mucosa. Applied locally in syphilitic (and gonorrheal) rheumatism, so-called, some of the iodin, probably on account of the vesicatory action of the formic acid, penetrates into the deeper structures, frequently affording relief of the symptoms. The local application, undiluted, is rather a painful expedient and the diluted solution is of but little, if any, therapeutic value. Hypodermically administered, it will improve the symptoms in a comparatively short time. Still, for obvious reasons, I would

8 Medical Record, June 24, 1905.

9. Medical Standard, September, 1904.

prefer the internal administration of this remedy. The solution is especially indicated in the treatment of the syphilitic manifestations of the nervous system, preeminently in those conditions which are the result of syphilitic nodes or gummata.

Pulmonary Phthisis.—Formic acid, and more particularly the iodin-formic acid solution, which must be prepared without heating, as the latter would cause decomposition of the formic acid, in my hands has proved the most valuable medicinal agent thus far advanced for the treatment and cure of—let me call it by the old names—chronic ulcerative and chronic fibrous phthisis. It would lead me too far to state on this occasion my experience with these medicinal agents in detail. A more thorough study of the subject will be published in a separate article in the near future. I only wish to state that I have employed it in the treatment of pulmonary phthisis ever since the monumental tuberculin failure, both in private and hospital practice, in more than 800 cases.

Of course, neither formic acid nor the iodin solution, which latter I have used exclusively in phthisis in the last ten years, is an infallible remedy in this affection. If this were the case I would have given to the world my experience with the drug long ago. I am sorry to say that the solution did not cure all of these 800 patients, neither do I wish to maintain at the present moment that it is even a rational remedial agent in the treatment of phthisis, but I wish to state that thus far it is the only drug which has given me positive results, that is, in improving or curing the condition in over 70 per cent. of all of my cases.

It is certainly a much more rational agent than creosote and its preparations and all other symptomatic makeshifts, including rest cure, open air and dietary treatment, devised to this day for the amelioration of this, the most common of all the chronic pathologic conditions.

DISCUSSION.

DR. W. C. ABBOTT, Chicago, asked: Taking formic acid as a remedial agent, what does it do physiologically? Clinically, he said, the result has been demonstrated, but he asked how the result is obtained.

DR. W. F. WAUGH, Chicago, called attention to the fact that formic acid has been said to stimulate the growth of plants, so much so that it has been alleged that the Hindoo fakir who shows a plant growing before one's eyes employs an earth that contains formic acid. If this be true, Dr. Waugh said that it would be exceedingly interesting to know whether or not formic acid stimulates any of the tissues or organs of the body, or its cells, so as to increase their power of resisting noxious agents such as tubercle bacilli, or the possible germ of cancer.

DR. H. STERN, New York, said that he had tried to give all the real pharmacodynamics of formic acid and that he did not succeed because formic acid is produced constantly in the human body, as it is one of the members of the fatty acid series found in every organism, healthy or diseased. When formic acid as such is taken by the mouth it combines to form sodium formate in the stomach, but it is again excreted as formic acid, provided it is taken in medicinal doses. Therefore, there is a double conversion, into sodium formate and then back into formic acid. Dr. Stern said he does not know how it acts. Whether or not it exerts a specific action on the tubercle he does not know, but in combination with iodin, he said, it has healing virtues and facilitates the production of fibrous tissue. In other words, in most of the patients who have taken the iodin preparation a chronic fibrosis has been produced.

A PRACTICAL METHOD OF ABOLISHING THE CAUSE OF ONE-QUARTER OF THE UNNECESSARY BLINDNESS IN THE UNITED STATES.

F. PARK LEWIS, M.D.

President New York State Commission for Improving the Condition of the Blind, 1903-1904.

BUFFALO, N. Y.

When an enlightened, civilized and progressive nation quietly and passively, year after year, permits a multitude of its people unnecessarily to become blind, and more especially when one-quarter of these are infants, the reason for such a startling condition of affairs demands explanation. That such is the fact practically all reliable ophthalmologists agree.

From a summary of carefully tabulated statistics it has been demonstrated that at least four-tenths of all existing blindness might have been avoided had proper preventative or curative measures been employed, while one-quarter of this, or one-tenth of the whole, is due to ophthalmia neonatorum, an infectious, preventable and almost absolutely curable disease. Perhaps this statement will take on a new meaning when it is added that there are in the State of New York alone more than six thousand and in the United States more than fifty thousand blind people; of these, six hundred in the one state and five thousand in the country would have been saved from lives of darkness and unhappiness, in having lost all the joys that come through sight, and of more or less complete dependence, for no individual can be as self-sufficient without as with eyes—if a simple, safe and easily applied precautionary measure had been taken at the right time and in the right way to prevent this affliction. The following three vital facts are not questioned, but are universally accepted by those qualified to know:

1. The ophthalmia of infancy is an infectious germ disease.

2. By the instillation of a silver salt in the eyes of a new-born infant the disease is prevented from developing in all but an exceedingly small number of the cases in which it would otherwise have appeared.

3. In practically all those few exceptional cases the disease is absolutely curable if like treatment is employed at a sufficiently early period.

Since these facts are no longer subjects of discussion, but are universally accepted by all educated medical men, the natural inquiry follows: Why, as a commonsense proposition, are not these simple, harmless, preventive measures invariably employed, and why, in consequence of this neglect, does a nation sit quietly and indifferently by, making no attempt to prevent this enormous and needless waste of human eyes?

The reasons are threefold and lie, first, with the medical profession; second, with the lay public; third, with the state.

The medical profession, great as have been its advances during recent years and strenuous as have been the efforts of its teachers and leaders to promulgate the fundamental importance of germs in disease, is by no means yet universally familiar with the facts concerning infantile ophthalmia, as to its prevalence, its dangers, its prevention and the measures that may be successfully instituted for its treatment. While the total number of cases is large, the disease may occur very rarely in the experience of any individual physician, even though he may have had an extensive general practice. When it does occur, unless the physician is fully informed, he

does not anticipate it and is unprepared to meet it. He thinks, in many cases, if his attention is called to the baby's eyes, as, indeed, it may not be at all, that the redness and watering is caused by a trifling catarrhal conjunctivitis, and prescribes some simple collyrium or external wash for the lids. He may not see the child again for a week, when perhaps the disease is fully developed, the cornea broken down and irreparable damage done; or, as sometimes happens, he does not know of the special value of the silver salts or fears to employ them because of their possible danger to the delicate eye of the child, and prevention is omitted and correct treatment neglected. It has been shown that the larger proportion of cases of blindness resulting from infantile ophthalmia occurs in the more remote country districts where the parturient patient is infrequently seen and where preventive measures are most imperative. It may not seem possible to the progressive up-to-date practitioner that many physicians are not familiar with this common disease, but the large number of cases of infantile ophthalmia that are constantly occurring, with the clinical histories accompanying them, together with the immense number of blind eyes as a direct sequence, prove beyond question that this is a fact.

The second reason for this apparent indifference lies with the lay public. The young mother has no conception of the danger which an inflammation of the eyes means to her baby. She has probably never heard that such a condition can threaten an infant's eyes. It is but one of the many new problems which maternity has for her, and only when the truth is told to her that the child, in whom all her hopes had been centered, is hopelessly, irrecoverably blind, does she begin to realize the extent of this frightful affliction. If she chance to learn, as she may, that this calamity was a needless one and might have been avoided by simple precautionary measures which were not taken, to her anguish is added indignation and censure of the physician by whom she considers her trust to have been betrayed.

The third agent concerned is the commonwealth. The loss of sight on the part of an infant makes the individual a state care in some measure for life. For the education of its blind children annually New York alone pays per capita at least three hundred and fifty dollars and a yearly gross sum amounting to much more than one hundred thousand dollars. If, as sometimes happens, the blind citizen is a dependent throughout a long life, the cost of maintenance is not less than ten thousand dollars, and the mere cost in money will be multiplied many times in that a productive factor, in reason of blindness, has been removed from the community.

If, therefore, as an economic proposition, it were realized how vitally it concerns the state that not one child shall needlessly become blind, thereby increasing the public financial burden, there is no doubt that early and effective measures would be instituted to protect the state from this unnecessary and extravagant expenditure of public funds.

It would seem that there are but two reasons why a generally recognized and effective measure for the prevention of a widespread and common cause of blindness is not invariably employed: First, because the dangers of the disease and the value of prevention are not universally known, and, second, because a safe, sterile, simple and free preparation in which the profession and the public have absolute confidence is not always at hand when needed. Concerning the first, various sporadic efforts have been made to inform midwives, who in large cities preside over half at least of the births, of the dangers of sore eyes in the new-born, and eleven states have passed legislative enactments requiring that the midwife shall report each case to the proper health authority and affixing a penalty for the failure to do so. As has been intimated, however, it is not by any means always under the ministration of midwives that these cases occur, and, like all laws behind which is not a strong and well-informed public sentiment, this law is rarely enforced. A more effective method must be devised. Every physician having to do with the parturient woman, every obstetrician, every midwife, must be frequently and constantly advised of the dangers and possibilities of this disease, the necessity of prevention and the value of early and correct treatment. They must then have placed in their hands ready for instant use a safe and efficient preparation issued by the health authorities as a guarantee as to its quality and efficiency.

An important step was taken in this direction when a resolution was passed by the House of Delegates, at the annual meeting of the New York State Medical Society, requesting the various health officers of the state to include ophthalmia neonatorum among contagious diseases which must be reported to the local boards of health.

This is, indeed, only a beginning; not only should every case be reported, but the conditions of each eye should be described in the report and accurate records made as to the result. If, then, the sight in one or both eyes is lost, inquiry as to the reason should be instituted. The assurance that such an investigation will certainly follow will inevitably cause a degree of care to be exercised that will immediately lessen the number of cases of blindness due to this cause.

The second essential in order that the cause of infantile ophthalmia be abolished is that a solution of the necessary silver salt be prepared under the authority of some body capable of inspiring universal confidence and that it be distributed by the health department of every state gratuitously to every obstetrician, physician or midwife qualified to care for the parturient woman. The nature of the solution, together with the character of the descriptive card which should accompany it, should be determined by a committee chosen by the President of the American Medical Association and should have among its members at least one representative ophthalmologist, one obstetrician and one sanitarian. The conclusions of this committee should be reported back to the House of Delegates so that the preparation and its text should carry with it, on the great authority of this association, the assurance that the solution is entirely safe and necessary and that its use should invariably be part of the toilet of every new-born child. The solution, probably silver nitrate, could be put up either by the state itself or by some trustworthy pharmacist at an insignificant cost; its purity and sterility should be vouched for by the board of health of the state. It should be enclosed in specially prepared receptacles, each containing a special quantity and so arranged that it may be used drop by drop. These, properly enclosed, accompanied by a brief lucid explanation of the danger of the disease, the necessity of this germicide, the method of its employment, and the right subsequent care of the eyes should be sent to the obstetrician on the receipt of each birth certificate. As with antitoxin, these preventive packages should be placed at various stations where they could be easily ob-

tained, and those by whom they might be used should be urged to secure them. In order that none who should use them should fail to get them, they should be supplied free of cost. Such further supplies as might be needed for further treatment in the proportionally few cases in which prevention did not prove wholly effective should be made readily obtainable at minimum cost. In other words, every facility should be afforded for the early destruction of the infectious germs.

Similar cards should be posted in every maternity hospital and ophthalmic dispensary, and efforts should be made to have the Credé method of prevention by the use of silver nitrate regularly employed as a routine measure in every public and private institution in which children are born.

Special cards should be sent to midwives, giving them more detailed instructions in several languages. These cards should be in the form of return postals, having space for the date on which the ophthalmia appeared, the condition of the cornea, and whether or not preventive measures were employed.

The distribution of these cards should lie with the public health authorities, and the failure to report promptly should constitute a misdemeanor.

Fig. 1.—Sample light-proof hermetically sealed ampoules for the distribution of the silver; made in different sizes. The glass tips are to be broken off, the rubber tubing being retained to prevent injury of the eye by untrained or careless hands.

On the filing of each birth certificate the department of health should at once send to the accoucheur an ophthalmia card, with a supply of silver nitrate for immediate use. It would probably, by reason of delay on the part of physician or midwife, be delivered too late for that particular case. Each card, sent, however, would be a constant reminder and the preparation would be on hand to be employed when the next case occurred.

Correspondence with some of the principal pharmacists has shown that the nitrate, which is the most efficient of the silver salts, is also the most permanent. It can be prepared in light-proof ampoules so arranged that a sterile preparation may be easily and safely employed even by inexperienced hands. Such a filled receptacle can be prepared and placed in the hands of the health officers and distributed at a nominal cost. If, however, the sum required to put this valuable preventive in the hands of every accoucheur was much greater than it is, it could still be done with great economy to the state.

In the year 1901-2 there were 129 pupils in the New York State School for the Blind; of these the ophthalmic examiner reported 43 as having lost their sight through suppurative ophthalmia. The next year, among 29 new pupils, 11 were catalogued as blind from this cause. In 1903-4, among 24 new pupils, 6 came in the same list, and in 1904-5, of the 23 new pupils, 7 were also so described. A careful re-examination developed the fact that, while all those cases were due to suppurative infections, and, therefore, almost if not all preventable or curable, some of them occurred later than in infancy, but several ophthamologists agreed that it was quite within the facts to say that 25 per cent. of the pupils in the school had lost their sight as a result of ophthalmia neonatorum. If a like proportion exists in the school in New York City, as is quite probable, these, together with the large number receiving state and city aid through other channels, would easily make an annually increasing budget of now not less than twenty-five thousand dollars paid for the education and maintenance of blind people who, had a tithe of that money been expended for prevention, need never have been blind.

In the city of Buffalo in 1905 there occurred about nine thousand births. During the year four children from the same place were newly entered in the State School for the Blind. Of these one boy had lost his sight through ophthalmia neonatorum. The cost of the maintenance of that one child by the state will far exceed the amount which would have been required to protect the eyes of the entire nine thousand.

As we leave the cities the proportion of children blind from this cause entered throughout the state multiplies prodigiously. There can be no question, therefore, as to the economy on the part of the state in instituting general preventive measures. The cost would be infinitesimal, the benefit prodigious, immeasurable. The present time is peculiarly propitious for the successful execution of such a plan.

I have said that responsibility for the indifference that is annually resulting in such frightful disaster lies primarily with the state, the public and the medical profession.

The state is already aroused to the necessity of taking effective measures to wipe out this ecntrollable plague. Bills have been introduced in the legislature of Massachusetts and of New York providing for the appointment of commissions for the blind, one of whose duties will be to study the causes of unnecessary blindness and to suggest preventive measures.

The public has been awakened and a society for the Improvement of the Condition of the Blind and the Prevention of Blindness has been organized in New York under the distinguished direction of Dr. Lyman Abbott and having on its directorate the names of many eminent citizens. The more generally to popularize its work a meeting, at which Mark Twain will preside and the Hon. Joseph H. Choate be the chief speaker, will be held at the Waldorf-Astoria, New York, in the present month.

To make these efforts more effective, the hearty cooperation of the medical profession is essential. The magnificent organization of the American Medical Association makes possible as never before an effective movement to abolish ophthalmia neonatorum as a cause of blindness. Let registration of every case be first secured through the health boards of every state in the Union, then through these same boards have placed gratuitously in the hands of every accoucheur the simple remedy through which protection can be secured, and multitudes whose lives through needless blindness would otherwise result in hopeless failure and untold misery may be saved to their families and the state through the combined efforts of the state, the people and the medical profession. This great thing can be done quickly and effectively. The state and the people are ready. The

third, the most powerful element, is the medical profession. Such a happy combination of conditions may never again recur. May not the powerful influence of this Association at this opportune moment be invoked?

PSYCHOSES RESULTING FROM COAL GAS ASPHYXIATION.*

SANGER BROWN, M.D.
CHICAGO.

For the past ten years at least, reports of cases of psychoses from coal gas poisoning are few. They are frequent enough, however, to demonstrate an apparent relation of cause and effect.

Greidenberg[1] reports 3 cases. The first patient, a woman of 58, whose symptoms were headache, vomiting, apathy, refusal of food, dysentery and, finally, death. The symptoms were thought to be of such a nature as to warrant a diagnosis of acute dementia. The second patient was also a woman who did not actually lose consciousness, the most prominent symptom being whining, apathy and weakness of memory. Recovery supervened after four months. The third was the case of a man of 45 who, in earlier life, had been intemperate. Ten days after asphyxiation he became forgetful, rambling, restless, excitable, sleepless and apathetic. His articulation was indistinct; he gave incorrect answers to simple questions and made incorrect statements. Urine and feces were passed in bed from inattention and there was hemiparesis. The term pseudoparalytic dementia was applied to this case.

Agostini[2] reports two cases with permanent retrograde amnesia. Hedren[3] reports a case in which the patient felt well for a short time after recovery from the acute symptoms. Then followed headache, pains in the extremities, peevishness, weakness of memory, staggering gait, incontinence of urine, complete apathy, muscular rigidity, exaggeration of the knee jerks, fibrillary spasm of muscles and, finally, death from bronchopneumonia.

The following changes were found in the nervous system:

1. Numerous small hemorrhages in the pia of the brain and in the cord.

2. Small bloodless patches throughout the whole cord, in some of which actual softening had taken place.

3. Thrombi in the small vessels of the optic thalamus.

4. Fatty degeneration of the endothelium of the small vessels of the central nervous system.

5. Chromalytic and atrophic changes in the large motor cells of the cord.

6. Partial thickening of the pia of the brain.

7. Degenerative changes throughout the nervous system.

Sibelius[4] reports a case of severe poisoning followed by dementia, paresis, visceral disturbance and death, in which the postmortem findings were similar to those reported in the preceding case. In fact, I find much similarity of the findings in most postmortem reports.

Patient.—S. E., aged 34, single, was admitted to the Kenilworth Sanitarium April 6, 1905. Patient was a real estate dealer, of correct habits. His family history was negative and previous health good.

History.—Nov. 7 patient was found at 7:30 a. m. in a sitting posture leaning against the wall near a gas stove from which gas was freely escaping. He was accustomed to prepare a light breakfast in his rooms and he was evidently so engaged when overcome.

When discovered he was unconscious, the face a deep purple, and the body entirely flaccid. He was picked up and carried to a bed in a nearby room when a general and intense tonic spasm set in which lasted several hours. By the diligent use of active restorative measures, including free inhalation of oxygen, he regained consciousness at the end of three days, and in three weeks he was able to be up and about. His pulse was about 140 and he suffered from dyspnea on slight exertion. His face continued purple and his expression dull and stolid. He complained of no pain, ate enough with slight urging, and slept well. The friends who accompanied him said that his bodily and mental symptoms on admission to the sanitarium were essentially the same as they had been prior to that time.

Examination.—On examination the following notes were made: Height, scarcely five feet; weight, 147 pounds. No abnormalities could be discovered in the viscera and careful examination of the urine was negative. Analysis of the blood showed: Percentage hemoglobin, 80; number of red cells per c.mm., 5,224,000; percentage of red cells, 104.48; corpuscle hemoglobin index, 70.7; number of white cells per c.mm., 14,200; polymorphonuclears, 82; large mononuclears, 4; small mononuclears, 15; eosinophiles, 1.

Vision was good in the right eye and the pupil reacted to light and accommodation. The left was injured by an accident in childhood and rendered useless. The fundus was not examined. Motion, sensation, superficial and deep reflexes, gait and station presented no variations worthy of note. The pulse varied from 108 to 140 throughout his residence at the sanitarium; nearly always over 120. The temperature was normal. The appetite, sleep and condition of the bowels were satisfactory.

Further History.—He had no recollection of anything that transpired for from thirty-six to forty-eight hours prior to the time when he was discovered in his room, though it is known he was at the baths in the Palmer House in the evening of Nov. 6.

He recognized his old acquaintances and repeated their names and discussed correctly with them various matters relating to a period prior to the asphyxiation. He repeated incidents of early life and childhood usually well, but retained practically nothing since the afternoon of Nov. 6. He could not remember what took place from hour to hour, even the visit of an old friend whom he was very glad to see. By dint of constant practice he finally remembered the name of his nurse and his way to the toilet and dining rooms. He could read and make simple computations in arithmetic. He realized his disability and wanted to recover, but was not emotional or complaining. He would read the newspaper, but could not discuss current topics. Though he retained some few impressions in his memory enabling him to find his way about the house and when out walking, there was no material improvement while under my observation, a period of fourteen weeks.

After leaving the institution he returned to the care of Dr. Upton, who reports no notable change either in the bodily or mental symptoms, till about two weeks prior to Dec. 31, 1905, when he died. He began to suffer from severe attacks of dyspnea so that he had to be under constant observation. He was more comfortable for two days before his death, which occurred suddenly, soon after he had retired, and while alone in his room. The bedding was not disordered in a way to suggest any sign of a struggle. The autopsy showed no significant macroscopic changes in the brain or cord, and unfortunately

* Read at a meeting of the Chicago Neurological Society.

1. Greidenberg: "Ueber Psychosen nach Kohlenoxydgas-Vergiftung." Vratsch, No. 48. (Russisch) 1898.

2. Agostini: "Sui disturbi psichici e sulle alterazioni degli elementi della cortezzia cerebrale nell'avvelenamento acuto e cronico per ossido di carbonio." Vortrag, gehalten auf d. 10 ital Psychiater-Congress. Riv. speriment di Freniatr., 1899, vol. xxv, pp. 3 and 4.

3. Hedren, Gunnar: "Zur Kenntniss der nervosen Nervenkrankheiten bei akuter Kohlenoxydvergiftung nebst einigen Bemerkungen über ihre forensische Bedeutung." Wien. Med. Blatter, No. 14, and Nord. Med. Arch. Inn. Med., Part 2, No. 4, pp. 1 to 30.

4. Sibelius, Chr.: "Zur Kenntniss der Gehirnerkrankungen nach Kohlenoxydvergiftung." Zeitft. f. klin. Med., vol. xlix, p. 111.

the parts were not preserved for microscopic examination. The lungs were markedly emphysematous, the heart considerably dilated, and there was a cyst of the left suprarenal capsule the size of a large walnut.

It might reasonably be assumed that some deleterious influence not demonstrable by present methods of examination had been exerted on certain of the cerebral neurons so that they were no longer able to retain new impressions as before, and, indeed, the impressions made on them some hours prior to the action of this influence were effaced by it, while impressions of longer standing were not dislodged nor their relationship with each other interrupted. This hypothesis appears more rational than to assume that such multiple capillary hemorrhages or thrombi as have frequently been found postmortem scattered at random throughout the brain and cord might have been accountable for the peculiar mental symptoms. Similarly the tachycardia might be explained by assuming an interference with the nutrition of the neurons which naturally regulate the heart's action.

It would be quite difficult to determine to just what extent the mind was affected as a whole, but no doubt there was some sensible impairment. I have been unable to find in the literature any autopsy report of cases in which retrograde amnesia had been a prominent symptom, and hence regret the brain and cord in this case were not preserved for microscopic study, though, as already suggested, my expectation that such examination would shed very much light on the subject at the present time would not have been very sanguine. The work would have been in the line of progress.

The existence of retrograde amnesia, its intimate causes and medicolegal aspects have been discussed by Wagner,[5] Möbius[6] and others. The peculiar brain changes which give rise to the phenomenon are not at present demonstrable, but that the phenomenon actually occurs under certain conditions the foregoing case pretty plainly shows. Hence its possible importance in medicolegal relations is obvious. For instance, two people might be found together in a state of asphyxiation, one of whom might die without recovering consciousness, the other might recover and actually have no recollection of anything that transpired for a number of hours prior to the period when he was overcome, though circumstances might make it appear probable that he wished to conceal facts within his knowledge covering that time. Instances of retrograde amnesia have been recorded after strangulation from suicidal attempts by hanging. Some authorities claim that only those cases in which severe convulsions were produced were followed by this result.

So far a careful study of the conditions which give rise to the phenomenon is much more valuable than scientific speculation as to the actual changes in the nervous system which produce it.[7]

100 State Street.

5. Wagner, Jaolus: Wien Jahrb. f. Psych., 1899, vol. viii, p. 213.

6. Möbius, P. J.: "Neurologische Beiträg.," vol. i, No. —, p. 55, Leipzig, 1894.

7. Bloch, Ernst: "Ein zur Heilung gekommener Fall von Kohlenoxydvergiftung mit ausschliesslich psychischen Störungen. Fortschr. d. Medicin, 1902, No. 16, p. 525. Bolton: Coal gas poisoning followed by symptoms simulating rabies. The Lancet, 1898, March 19. Federici, F.: "Contributo allo studio delle alterazioni degli elementi, nervosi centrali e periferici consecutive all'avvelenamento subacuto e cronico per CO." Rivista di patologia nervosa e mentale, 1903, vol. viii, No. 3. Schaffer, Emil: "Beiträg zur pathologischen Anatomie der Kohlenoxydvergiftung." Wien. klin-therapeut. Wochft., 1903, No. 43, p. 1227.

MALARIAL INFECTION IN CERTAIN NATIVE VILLAGES OF THE CANAL ZONE.

ARTHUR I. KENDALL, PH.D.

Acting Chief, Board of Health Laboratory, Isthmian Canal Commission.

PANAMA.

(*Concluded from page 1154.*)

III. MALARIAL PARASITES AND SPECIES OF MOSQUITOES.

The greatest confusion still attends the classification of the malarial parasites. I follow the terminology which seems most closely to conform to the rules of zoological nomenclature. Schaudinn[1] outlines the terminology which at the present time seems to be the most generally accepted one:

Plasmodium malariæ (Laveran), the quartan parasite.

Plasmodium vivax (Grassi and Feletti), the tertian parasite.

Plasmodium immaculatum (Grassi and Feletti), the estivo-autumnal parasite.

At the same time it is much more convenient for the sake of brevity and clearness to refer to the organisms described in this paper by their clinical manifestations, and the terms tertian, quartan and estivo-autumnal will be used, bearing in mind that these terms, although in a way unscientific, are distinctive and explicit.

Before describing the parasites in detail it may be well to say a few words about the general differential diagnosis between tertian and estivo-autumnal parasites. Every one who has worked with malarial blood will acknowledge that at times it is almost impossible to differentiate between very young forms of the tertian and estivo-autumnal parasites. During the course of the work here there have been several cases in which it was quite impossible to make more than a probable diagnosis at best; at the same time the majority of instances we have been able to find either more adult forms present or there have been full-grown parasites so that the diagnosis was comparatively a simple matter.

The presence of several stages in the life history of a parasite in the blood at one time is not to be wondered at. If one will consider that the natives use no mosquito bars or screens and that absolutely no measures are taken to kill or remove infected mosquitoes, one will readily see that the chances are greatly in favor of successive, irregular inoculations from infected mosquitoes the same night or on successive nights. Parasites introduced into the blood at different times would naturally have a tendency to run their cycles at different intervals with the result that several stages would occur in the same individual at the same time. Indeed, it is not uncommon to find two or even three distinct stages in development of the tertian parasite in the blood of a patient at the same time, giving rise to a double or even triple tertian infection. When three cycles are present at the same time, however, the infection loses, to a considerable extent, its periodicity and becomes more like an estivo-autumnal infection in its clinical manifestations. It is even not uncommon to see two different stages of the tertian parasite in the same blood corpuscle at one time.

The great preponderance of estivo-autumnal infections, as shown both in the tables here and in the Ancon Hospital Report for the period corresponding to that in which this investigation was carried out, is well borne

1. Arb. a. d. kais. Gesundhts., vol. xix, p. 2, 1902.

out by the findings in the dispensaries along the line, and by all odds this infection is the most common in this country. With the arrival of Americans and, in general, people from the more northern climates, there has been a gradual relative increase in the tertian malaria; the estivo-autumnal infection still, however, is the prevailing type among the natives and those exposed to mosquitoes which have become infected in the native villages and which consequently bear the native type of the disease.

The Quartan Parasite.—The quartan parasite is very uncommon here; during the course of this investigation not a case of quartan fever or quartan parasites was encountered, nor was there a case which in any manner resembled a quartan infection. There have been, however, a few cases reported in the hospitals, although they occurred in the majority of instances among men who undoubtedly contracted the disease in the United States.

Estivo-autumnal Parasites.—There are two recognized cycles in estivo-autumnal malaria, respectively twenty-four and forty-eight hours, giving rise to the so-called quotidian and subtertian varieties.

The periodicity in estivo-autumnal malaria, however, is less regular than that of the benign tertian, and there is a distinct tendency for attacks to "anticipate," particularly if medication or resistance on the part of the patient be not sufficiently great to prevent the action of the parasites; furthermore, the attacks tend to become fused; i. e., there are sufficient groups of parasites continuously reaching maturity to keep up a more or less steady stream of toxin, which is manifested clinically as a prolonged elevation of temperature, in which the quotidian or tertian tendency is manifested by major elevations, the lesser cycles by smaller excursions of temperature. This is particularly true of the subtertian type.

One may also have more or less regular, well-marked double or triple subtertian attacks, or double quotidian attacks, although the latter are much less well defined and uncommon.

The parasites are endoglobular during practically the entire course of their development. The earliest forms are minute, rather irregular, refractile bodies, with at times a tendency to assume the shape of a clover leaf; their form changes slowly at first, later with considerable rapidity. This body is located, as a rule, near the edge, on the edge (best and most clearly seen in stained preparations), or even lying in an apparent nick in the periphery of the red blood cell. The parasite changes its position in the corpuscle, grows gradually larger and coincidently the rapidity of the ameboid movement increases.

Not infrequently in grave cases of malaria one sees red blood cells which are shrunken and dark colored—the so-called "brassy corpuscles." They do not occur in every case, nor do parasites in severe cases necessarily give rise to this change in the erythrocytes. They do not occur exclusively in a grave infection either, and there is nothing to warrant the assumption that they are but of occasional occurrence and of no other diagnostic importance than any estivo-autumnal parasite. The ameboid stage may last for several hours; longer if the preparation be kept warm on a suitable warm stage, a shorter time if the slide cools. In the body the change is brought about in a few hours, giving rise to the ring form.

There is some dispute as to the mechanism of the formation of the ring. Marchiafava and Celli believe the rings are merely ameboid bodies which have become attenuated at the center, with a corresponding thickening at the periphery. The thin, central portion allows the hemoglobin to show through, giving the dark appearance so familiar in these bodies. Osler, Councilman and Antoisei believe the ring is formed by the inclusion of a portion of the red blood cell; the parasite first assumes a horse-shoe formation, the ends gradually penetrate through a portion of the erythrocyte, and the coalescence of the two horns of the crescentic parasite includes the small portion of the red blood cell. Marchiafava and Bignami, while not denying that this process may occur, believe that rings formed in this manner are not permanent; that they tend to return to the ameboid stage. In two instances I have seen the process described by Osler and Councilman occur. The ring so formed lasted in one instance for three hours. The preparation was cast aside after that time. From the fact that the center of the ring seems darker than the peripheral portion of the erythrocyte Marchiafava and Celli argue that the center must be of different material. But this is not a necessary assumption; the central portion may seem darker by contrast.[2]

The estivo-autumnal ring is small, rarely more than one-fifth the size of the red blood cell, and comparatively refractile. It is, as a rule, slightly fusiform or shaped like a clover leaf, particularly in the early portion of its existence. In the older rings there is usually a small amount of dark-colored pigment, arranged generally at the periphery of the parasite, and having only very slight movement; the rings themselves at this stage are less like the "signet ring" of the tertian parasite, being much thinner and less conspicuous.

The ring stage is succeeded by another ameboid stage; the parasite at this time is larger than the first ameboid and less actively motile. The production of pseudopodia at this time is, to a considerable extent, replaced by a sort of mobility; the parasite changes shape, but as a whole rather than by the protrusion and withdrawal of portions of its substance. The second ameboid stage is, except in rare cases, the last appearance of the parasite in the peripheral circulation. In severe cases, rarely in cases which are not severe, one may occasionally see the segmental process, but, with the exception of the crescent, one practically must follow the further development with parasites obtained by splenic puncture or from autopsies.

The localization of the parasites in the body, after they have left the peripheral circulation, has much to do with the clinical manifestations of the attack, gastric, cerebral, etc.

In the many autopsies I have seen and examined while engaged in this work, extending over eighteen months, there have been many so-called cases of malignant or pernicious malaria. The localization of the parasites in the brain, heart or stomach will, as a rule, explain in part the symptoms, but in no instance have there been any forms of the parasite noted which suggest even remotely that one is dealing with anything but the regular types of organisms already known to the profession.

In some cases there have been bizarre forms which stain with the metachromatic stains in a manner to suggest new forms, but they are not in sufficient numbers in any one case or of common occurrence in simi-

2. It should be mentioned that the estivo-autumnal ameboid is more refractile than the corresponding stage in the tertian parasite.

cases to warrant the assumption of any relation, however remote, with the illness or death of the patient. I have no reason to believe that pernicious or malignant malaria is other than the resultant of the following factors: (a) Large numbers of estivo-autumnal parasites; (b) comparatively exalted virulence of the parasites; (c) relatively low resistance on the part of the patient.

In some instances of extremely severe attacks of malaria, there have been only a very few parasites in the peripheral circulation; it may even be impossible to find them, but at autopsy they will be found in the bone marrow, spleen, heart, brain or some other internal organ. In the majority of severe or pernicious cases, however, there are many organisms in the peripheral circulation.

The so-called Chagres fever, a severe type of malaria, is caused by the estivo-autumnal parasite.

Crescents and Ovoid Bodies.—One usually associates crescents and ovoids with estivo-autumnal malaria; at least they are said to occur with a considerable degree of regularity, and one would expect to find them frequently in more or less protracted cases of malaria caused by this parasite.

The observation is general in Panama that the crescents and ovoids are comparatively uncommon.

There is no apparent reason for this. One would surely expect to find them in the blood of natives who have repeated attacks, and particularly among the young natives who have malaria almost continuously during certain periods of the year.

I have observed many cases of this kind, and particularly a gang of men who were working under my immediate direction. The men were under 25 years of age, and came from Martinique, which, except for a few locations along the sea coast, is said to be free from malaria. The blood of all these men was examined as soon as they arrived; they were landed from the steamer in the middle of the day, and brought to Panama in daylight. The blood was examined for three days and there was not the slightest indication of malaria. The men themselves declared they had never been sick with fever of any sort. They were lodged in a house which had been inhabited by some Jamaican laborers, from whose ranks there had been several severe cases of estivo-autumnal malaria. In two weeks, in spite of six grains of quinin solution a day per man, five came down with severe attacks.

During the three months they were under observation all were in the hospital at least twice, most of them three or four times. In only one case, which was one of those having only two slight attacks, were there crescents.

The distribution of crescents and ovoids among the natives of different ages will be described in another section of this paper.

The fact that these bodies are relatively uncommon would suggest that either the parasites develop into the crescents or ovoids in the mosquito from some antecedent form or else there is some other sexual form in virtue of which the parasites are able to complete their sexual cycle in the majority of cases in Panama.

I am engaged in a series of experiments to throw more light on this phase of the problem.

Tertian Malaria.—As its name implies, the tertian cycle takes approximately forty-eight hours to complete, although the time is not absolutely definite. In some cases, particularly those of rather more than moderate severity, the tendency is for the cycle to become shortened or to "anticipate." Conversely, as the attack is abating, in many instances the period is lengthened, giving rise to paroxysms more than forty-eight hours apart.

More than one cycle may be in progress at the same time, so that one may see two or even more series of parasites in various stages of development; in fact, a typical, single tertian fever is comparatively rare. Almost always one sees at least two sets of parasites in different stages of development. Conversely, in some of the more severe types the combination of several cycles and the tendency to anticipate cause a more or less marked fusion of excursions of temperature, with a resulting continuity of fever. This is not, however, as marked as is the case with the estivo-autumnal fevers.

As already stated, the younger stages in development of the tertian parasite are difficult to distinguish from the corresponding periods in development of the estivo-autumnal parasites. They are, however, somewhat larger and less refractile than the average estivo-autumnal organisms and rather more actively motile. The rapid succession of irregular, ameboid body, ring-shaped forms and linear forms occurring in the same parasite within a very few minutes is quite characteristic. This is most noticeable when the blood is fresh and kept in a fairly warm atmosphere.

The pigmented forms appear relatively earlier and are much more common; the pigment is very fine, and, as a rule, situated more or less peripherally, particularly in the ends of the pseudopodia. The rapid succession of forms involves the change in position of the pigment, and I believe that to a considerable extent this is the cause of the so-called motility of the pigment. In stained preparations the cytoplasm is much greater in extent in the tertian parasites, stage for stage; the chromatin body more pronounced; there are more vacuoles, and there is a more strongly marked clear zone around the chromatin than in the estivo-autumnal organism.

Comparatively early in the life of the tertian parasite the red blood cell usually becomes pale and swollen; this is probably the cause of the apparent lesser refractility of the tertian parasite, whereas in the estivo-autumnal organism there is a tendency for the red blood corpuscles to become darker, probably thus increasing the apparent refractility. Ewing has noted the not infrequent occurrence of so-called conjugating forms; two rings have apparently fused and he interprets this as an actual reproductive stage. While such forms are not rare, there seems to be no evidence in favor of this view; not infrequently one will see two centrosomes in one ring or one centrosome in a double ring, so situated as to preclude the possibility of fusion of centrosomes within any comparatively recent time.

The tertian parasite increases rapidly in size, mostly by growth of cytoplasm; the centrosome does not grow in proportion. The organism finally occupies four-fifths of the cell, sometimes almost the entire corpuscle, so that only with the closest scrutiny can one see the edge of the erythrocyte. The pigment increases in amount and finally becomes arranged more or less peripherally, preparatory to segmentation. Inasmuch as these forms (segmenting) are relatively uncommon, no detailed description will be made here. In stained specimens, one frequently sees in the older forms a peculiar red stippling of the erythrocyte; this is by no means a new observation, but it seems to be characteristic of the tertian infection, and I do not remember having seen it in the estivo-autumnal parasites.

Bodies, free in the blood serum, having the exact morphology and staining reactions of one-third to one-half grown tertian parasites, are seen occasionally. I

am inclined to believe they are, in reality, organisms which have been expressed by some means from the red blood cells, not that they represent an extracellular stage in development comparable to the full-grown parasite. At the same time one must consider the possibility of degenerated leucocytes.

Anopheles.—Without intending to discuss mosquitoes in this paper, I must mention the more common species of the genus *Anopheles*, the only genus of the *Culicidæ* known at the present time to play an important part in the transmission of malaria.

There are two anopheles in Panama which are relatively common: *A. albipes* and *A. pseudopunctipennis.* Of these the former is much the more important and abundant.[3]

I have strong circumstantial evidence that *A. albipes* is a very important mosquito in malarial transmission on the Isthmus, as the following case shows:

There is a row of small houses on the north side of Ancon Hill which originally were intended as quarters for lepers; they were used, however, for temporary barracks for some Jamaican laborers, one of whom suffered from a severe attack of malaria shortly before leaving the place. The houses were vacated for a week and turned over to a force of seven men who were brought in a steamer directly from Martinique to these quarters under my personal supervision. The journey from the ship to these houses was made in the middle of the day, when mosquitoes do not bite as a rule, and there is no probability that the men contracted malaria at this time. The blood of each man was very carefully examined for three successive days and found negative.

The men had lived in a portion of Martinique which is said to be free from malaria, and all claimed never to have suffered from fever of any kind. None had enlarged spleens, which are very common in this part of the world. Their work was purposely confined to a region immediately about their houses, and their only excursions from this place were to go to meals, about a quarter of a mile; this trip was always made before dark; they ate with a number of other negroes in a place which was as free from mosquitoes as could be found.

At the end of ten days malaria appeared; four were sent to the hospital suffering from severe estivo-autumnal infections; in six weeks all except one of the number had been in the hospital, all with precisely the same symptoms and running practically the same course, a typical estivo-autumnal infection which was clinically like that of the Jamaican who had lived in the house before them. Investigation of the house showed enormous numbers of *A. albipes;* the first day I removed fifty-six in about an hour. Two days later as many more were taken. The men had complained bitterly about the insects, and these mosquitoes were almost without exception engorged with blood. Very few male mosquitoes were seen. The other three houses, although within a few feet of the one inhabited by the Martinique men, were free from mosquitoes. No one had lived in them up to that time.

The house was screened, the ground round about cleared for a distance of seventy-five yards in every direction, a few marshy spots abolished and a general fumigation of the place made. The larvæ of the anopheles, which abounded within a few yards of the door of the house, were killed, the drains improved and the men placed on a regular quinin treatment consisting of three grains of quinin solution three times a day; this was taken in the presence of the foreman, and kept up for three months, at the end of which time the malaria had practically disappeared from all the men except two who contracted the disease in a chronic form and who later on were deported. In every case only *A. albipes* was found; no other anopheles being observed in all the insects removed from these houses.

In the huts of the natives along the line the same results have obtained; in almost every dwelling one may find albipes by simple sweeping with a broom along the roof of the house; the native huts are made of cane, with thatch for a covering, and the latter makes an excellent hiding place for the mosquitoes who remain quiescent during the day, but bite vigorously during the night. In fully 90 per cent. of such houses I found albipes, rarely any other species of anopheles.

IV. RESULTS OBTAINED IN THIS INVESTIGATION.

Race, Age and Sex.—Almost all writers agree that the very young suffer more than the adolescent and very old from malaria in tropical and subtropical countries. Koch found in New Guinea that 100 per cent. of the new-born were infected, and that the percentage of infected individuals gradually diminished up to the twenty-first year; from that age the natives suffered little from malaria. There seemed to be no perceptible distinction in the native population between males and females; each equally infected or free from parasites. He noted that many children with huge spleens and blood teeming with malarial organisms were running about "in rude health." Stephens, Christophers and Daniels, apparently confirming Koch's work in central Africa, believe the new-born and very young children are the most frequent sources from which mosquitoes are infected; they do not state the age limits when this tendency disappears, but one is led to infer that older children were relatively free from parasites in the peripheral circulation.

Schelling places the limit at which malarial parasites tend to disappear from the blood at 35 years; this is certainly less in harmony with the conditions here. While agreeing that the young are the most susceptible, most writers do not consider any age free from infection. We have found young urchins here, not more than 12 years of age, running about "in rude health" with temperatures from 101 to 103 where blood was literally filled with malarial parasites, usually estivo-autumnal rings. Marchiafava and Bignami write: "Malaria spares no age; but infants and children are more subject to this disease than adults. This is explained, in part at least, by the predilection of mosquitoes to attack delicate skins and by the very deep slumber of infants." Scheule is inclined to attribute the relative immunity in negroes, particularly the older ones, to their thick skin and pungent odor which, unless no more desirable subjects are available, drives away the mosquitoes. It is interesting to note that certain French observers have made similar observations; with *Stegomyia fasciata* they found the order of biting was as follows: Infants, young well-nourished individuals, well-nourished old people, anemic persons, all white; then young negro babies, children and finally adults. In Panama I have had the greatest difficulty in causing *Anopheles, Stegomyia* or *Culex* to bite adult negroes, while they would bite with the greatest eagerness any white individual exposed to their action.

Celli gives the following table of mortality according to age in Italy. It should be noted that this result, while having a bearing on the subject, is not comparable with the results mentioned above and not necessarily with the data tabulated in this paper:

Birth-5 yrs.	5-10 yrs.	11-20 yrs.	20-40 yrs.	40-60 yrs.	60-80 yrs.
19.4	48.9	38.6	24.3	23.9	23.9

3. It may be of interest to tabulate the species of anopheles which at the present time are supposed to transmit malaria. The information is drawn largely from Theobald, Howard and Giles.

Africa: *A. costalis, funestus, paludis.*
Europe: *A. bifurcatus, superpictus, maculipennis (clavigci).*
India: *A. simensis (pseudopictus) Rossii, fuliginatus, culifacis, barbitilis,. Stephensii, Theobaldi, barbirostris, Turkhudi.*
America: *1. argyrotarsis, albipes.*

Therefore, no age is spared. The above statistics enable us not only to affirm that the highest mortality is between the ages of 5 and 20 years, but that malaria is relatively more prevalent in the older children than in the very young. Notter says: "As regards age and sex, males appear to suffer more than females, but possibly this is due to increased exposure to attack. No age seems to be exempt, although attacks are certainly less frequent among the very young and the very old." Stephenson and Murphy make practically the same statements as Notter, and, while laying stress on the fact that no age is spared, imply that the very young and very old are less liable to malarial attacks than the intermediate ages. Beim, Kohlstock and F. Plehn claim that malaria can exist *in utero*. They cite the case of a pregnant woman who had simple tertian malaria with chills every other day; on the alternate days the fetus had chills which were plainly felt through the abdominal wall of the mother. Bignami, Bastianelli, Caccini and Thayer, in a series of autopsies on pregnant women, found that the fetus shows no signs of malaria either in the blood or in pigmentation of the spleen or other organ. I saw a perfectly similar case.

The results of my observations in Panama, while comprising *in toto* a fairly large number of cases, are based on relatively few observations for each age-period. At the same time the results are fairly conclusive, particularly when they are compared with the observations made by writers in different countries.

With respect to age, the percentage of infection is very high at birth (including all individuals from birth to 1 year of age in this connection) and diminishes slightly and progressively until the fifteenth year is attained. From 15 years to old age the number of infected individuals decreases markedly in comparison with the previous years, but never goes so low as to warrant the statement that adolescence and old age are comparatively free from malaria. In fact, at any age over one-third of the inhabitants at the time these results were obtained harbored malarial parasites in their peripheral circulation. This does not necessarily mean that the same high general average would obtain all the year. In fact, the reverse is probably true. These observations were made during the height of the malarial season (October to January), and this period agrees well with the period of highest malarial illness in the hospitals. During the dry season the natives all agree that malaria is much less prevalent and much less severe.

The malarial infection is greatest during the first year of life and diminishes slightly up to the age of 15; from 15 on there is a rather abrupt drop, which remains practically the same through adolescence and old age, but at no time or in any age does the infection disappear entirely (Tables 1, 2, 3 and 4).

The statements concerning *sex* made by some observers do not obtain in Panama; instead of males being much more susceptible to malaria, there is very little difference between the males and females. Averaging the whole series of results, probably the males would show a slight increase over the females in infection, but the difference is so slight and so unevenly divided between the different periods of life that it is not safe to hazard an opinion on this subject.

Concerning the different *races*, the results show conclusively that the natives are much less infected after the first year than the foreign element. This is a point of great importance and will be discussed at greater length in the section on immunity. It will be sufficient to state here that the native born seem to be equally prone to malaria during the first year of life, and the symptoms are quite as severe as in the foreign born in the cases I have seen. From the first year, however, the cases, as a rule, are less severe, and even when the

TABLE 1.—SUMMARY OF RESULTS AT BOHIO.

Age in Years.	0-1		1-5		6-10		11-15		16-21		22-99		Total.		Total.
Sex.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Estivo-autumnal	3	3	7	11	23	14	28	25	5	4	30	17	96	74	170
Estivo-autumnal ameboid	3	3	7	10	19	11	26	23	4	4	28	15	87	66	153
Estivo-autumnal ring	0	1	3	7	12	7	6	12	3	2	14	7	38	36	74
Estivo-autumnal pigmented	1	1	1	3	5	4	7	5	2	0	6	4	22	17	39
Estivo-autumnal crescent	0	1	0	0	0	0	0	1	0	0	0	0	0	2	2
Tertian	0	1	3	0	1	1	3	0	0	0	1	2	8	4	12
Mixed infection	0	1	3	0	0	0	3	0	0	0	1	1	7	2	9
Negative	0	0	3	2	4	11	1	10	3	0	17	12	28	35	63
Re-examined:															
Negative-positive	0	0	0	0	5	0	4	1	1	0	0	2	10	3	13
Positive-negative	0	0	0	0	2	4	0	0	0	0	2	0	4	2	6
Positive-positive	0	0	0	0	1	2	4	4	0	0	0	0	5	6	11
Negative-negative	0	0	0	0	0	0	1	2	1	0	3	1	5	3	8
Total estivo-autumnal	6		18		37		53		9		47		96	74	170
Total tertian	1		3		2		3		0		3		8	4	12
Total mixed infections	1		3		0		3		0		2		7	2	9
Total crescents	1		0		0		1		0		0		0	2	2

Total cases examined, 236; total cases positive, 173; total cases negative 3.

TABLE 2.—SUMMARY OF RESULTS AT GATUN.

Age in Years.	0-1		1-5		6-10		11-15		16-21		22-99		Total.		Total.
Sex.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	
Estivo-autumnal	2	2	19	14	9	9	6	7	2	4	28	19	66	55	121
Estivo-autumnal ameboid	2	2	18	13	9	6	6	6	2	3	27	19	64	49	113
Estivo-autumnal ring	1	0	9	7	3	4	3	3	1	3	10	7	27	24	51
Estivo-autumnal pigmented	0	0	7	5	2	3	4	5	1	2	6	5	20	20	40
Estivo-autumnal crescent	0	0	0	0	1	1	0	1	0	0	4	1	5	3	8
Tertian	0	0	1	2	0	3	0	1	0	0	1	2	2	8	10
Mixed infection	0	0	0	2	0	1	0	1	0	0	0	0	0	4	4
Negative	0	3	8	10	7	6	8	8	4	8	27	38	54	73	127
Total estivo-autumnal	4		33		18		13		6		47		66	55	121
Total tertian	0		3		3		1		0		3		2	8	10
Total mixed infections	0		2		1		1		0		0		0	4	4
Total crescents	0		0		2		1		0		5		5	3	8

Total cases examined, 254; total cases positive, 127; total cases negative, 127.

TABLE 3. SUMMARY OF RESULTS AT BOHIO AND GATUN.

Age in Years.	0-1		1-5		6-10		11-15		16-21		22-99		Total		Total
Sex.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	
Estivo-autumnal	5	5	26	25	32	23	34	32	7	8	58	36	162	129	291
Estivo-autumnal ameboid	5	5	25	23	28	17	32	29	6	7	55	34	151	115	266
Estivo-autumnal ring	1	1	12	14	15	11	12	15	4	5	21	14	68	60	128
Estivo-autumnal pigmented	1	1	8	8	7	7	11	10	3	2	12	9	42	37	79
Estivo-autumnal crescent	0	1	0	0	1	1	0	2	0	0	1	1	5	5	10
Tertian	1	1	1	1	4	3	1	0	0	2	4	10	12	12	22
Mixed infection (A-E and T)	0	1	3	2	0	1	3	1	0	0	1	1	7	6	13
Negative	0	3	11	12	11	17	9	18	7	8	44	50	82	108	190
Re-examined:															
Negative-positive	0	0	0	0	5	0	4	1	1	0	0	2	10	3	13
Positive-negative	0	0	0	0	2	4	0	0	0	0	0	0	2	4	6
Positive-positive	0	0	0	0	1	2	4	4	0	0	0	0	5	6	11
Negative-negative	0	0	0	0	0	0	1	2	1	0	3	1	5	3	8
Total estivo-autumnal	10		51		55		66		15		94		162	129	291
Total tertian	1		4		5		4		0		6		16	12	22
Total mixed infections	1		5		1		4		0		2		7	6	13
Total crescents	1		0		2		2		0		5		5	5	10
Total negative	3		22		28		27		15		94		82	108	190

Total cases examined, 491; total cases positive, 300, or 61.22 per cent.; total cases negative, 190, or 38.78 per cent.

TABLE 4.—MALARIAL INFECTION: BY AGE, SEX AND RACE.

Age in Years.	Males. Positive.		Males. Negative.		Females Positive.		Females Negative.	
	Pan.*	Jam.†	Pan.	Jam.	Pan.	Jam.	Pan.	Jam.
0-1 year.								
Number of cases	3	2	0	0	4	1	3	0
Per cent.	100	100	0	0	57	100	43	0
1-5 years.								
Number of cases	22	5	11	0	19	6	12	0
Per cent.	67	100	33	0	61	100	39	0
6-10 years.								
Number of cases	20	13	9	2	22	4	13	4
Per cent	68	87	32	13	63	50	37	50
11-15 years.								
Number of cases	23	11	6	0	29	3	15	3
Per cent.	79	100	21	0	66	50	34	50
16-21 years.								
Number of cases	3	4	6	1	8	0	8	0
Per cent.	33	80	67	20	50	.	50	. . .
22-99 years								
Number of cases	23	36	25	19	26	13	42	8
Per cent	48	65	52	35	38	62	62	38

* Indicated Panamanians, i. e., natives. † Jamaicans, i. e., foreign born. This includes natives of the West Indies.

parasites are present in the blood the individuals suffer relatively less than the foreign born; they enjoy a "rude health," to repeat Koch's epithet.

Table 4 is a summary of the results of this investigation tabulated according to race and sex; for convenience the natives are contrasted with all other peoples, not native born. When the data on which this table is based were obtained, particular attention was paid to the question of birthplace and place of residence of each individual. This plan was carried out even to the very youngest; under the heading "Panamanian" is included all those whose parents are natives of Panama or Colombia, while the term "Jamaican" includes all other individuals. Usually, in fact almost exclusively, the latter are natives of the West Indies and have lived in this climate a comparatively short time. The very young of this class were, however, as a rule, born in Panama.

We have, then, two distinct groups of cases—one whose parents are native born and who have been exposed to the type of malaria prevalent in Panama from earliest infancy; the other those of foreign parentage and not exposed to this type of malaria.

The fact that the very young of both classes are born in Panama might at first sight seem to be prejudicial to exact results, but the fact that the young of both classes suffer equally from this disease simplifies what otherwise would be a serious objection to the table herein outlined.

Of the 355 natives examined, 202 were positive and 153 negative; this is very nearly 4 positive to every 3 negative, or 57 per cent., with malarial parasites in their blood as contrasted with 43 per cent. without parasites. Of the foreigners, on the other hand, 135 cases, 98, or about 73 per cent., were positive, while 37, or 27 per cent., were negative. In other words, of the native born (all ages) three out of five were positive to malaria, while the foreign born had three out of four with malarial parasites. Table 4 shows quite clearly that up to 15 years of age both native and foreign born children suffer severely from malarial infection. The effect of long-continued residence in this particular climate is shown in Table 5.

Even in the very young, under 5 years of age, there is a noticeable difference in the percentage infected between natives and foreigners, but this is much less marked than the differences obtaining after one reaches the age of 15; from that time on the ratio of infected to non-infected is much different; the natives have less infected than non-infected in the proportion of about three to four, while the foreign born have more infected than non-infected in the proportion of five to three.

TABLE 5.

Age in Years.	Native Born.				Foreign Born.			
	Males.		Females.		Males.		Females.	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
0-1	3	0	4	3	2	0	1	0
1-5	22	11	19	12	5	0	6	0
6-10	20	9	22	13	13	2	4	1
11-15	23	6	29	15	11	0	3	3
Totals	68	29	74	43	31	2	14	7
16-21	3	6	8	8	4	1	0	0
22-99	23	25	26	42	36	19	13	8
Totals	26	31	34	50	40	20	13	8
Grand totals	94	60	108	93	71	22	27	15

This fact is very significant; in the native born, at the age of about 15, the proportion of infected to non-infected changes from nearly two to one to a ratio of about three positive to four negative; in the foreign element the ratio of five infected to one non-infected, up to 15 years, changes to five infected to two non-infected during the later years of life. This can mean but one thing: That in extreme youth the children or, more properly, infants are all extremely susceptible to malaria; as they become older this susceptibility seems to diminish, or at least there are fewer cases in our series relatively showing malarial parasites in their peripheral circulation: the change to relative immunity begins much younger in the natives and is developed to a much higher degree, so that in the older individuals actually less than one person is infected for about every two infected while in the foreign population, although there is a distinct tendency toward an acquired immunity, the change never becomes marked, and at no time does the latter class begin to show the resistance and the lessened infection to the malarial parasites that we see in the natives.

We have, then, among the natives a distinct acquired immunity; this is manifested by the greatly lessened number of infected individuals to non-infected individuals as one chooses later periods of life for comparison. At the same time there is strong evidence to show a tendency at least toward congenital or inherited immunity. This is amply shown by the above statistics; the differences between the groups of individuals is extremely well marked, and there can be no doubt whatever that the inferences drawn by previous investigators concerning the existence of an acquired immunity among those who have lived in countries where they are continually exposed to malaria are correct.

Occupation.—Malaria is an environmental rather than an occupational disease; while text-books enlarge on the evil effects following certain occupations, one must not infer that the vocation *per se* is the essential factor. For example, the pastoral population of certain portions of Italy suffer excessively from malaria, but, aside from certain lowering of the body resistance by exposure, the malarial mosquito is the infecting agent, and this disease occurs merely because the people, of necessity, must live in places where such insects abound. If the laborers can return, after the working day, to locations free from anopheles, the suffering from malaria is reduced to a minimum.

In order to determine, if possible, the relation between occupation and malaria in Panama, the natives were questioned at the time of their examination concerning their occupations. In many instances no information could be gained; those individuals, however, who did have an occupation were questioned closely concerning the character of the work, and the table shows the results of our observations in this direction.

There seems to be no general rule with regard to the percentage of infected individuals in any trade; the results are extremely varied and from one point of view inconclusive; what they do show, however, is the fact that no one occupation is really less conducive to malaria than any other. In other words, my results simply confirm the statement that malaria is environmental, and occupation, as a rule, has no effect on the general tendency toward this disease.

Immunity.—This is one of the most interesting, perplexing and important problems, even aside from its probable relation to acclimatization, that one has to do with in tropical countries.

TABLE 6.—Occupation and Malaria.

Occupation.	Gatun.		Bohio.		Total.	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
Laborer	5	7	17	15	22	22
Per cent	42	58	53	47	50	50
Cooks*	9	11	15	7	24	18
Per cent	45	55	69	31	57	43
Washwoman	1	17	5	3	12	20
Per cent	30	70	63	37	38	62
Farmers	2	4	9	0	11	4
Per cent	33	67	100	0	73	27
Storekeepers	11	4	6	2	17	6
Per cent	73	27	75	25	74	26
Dressmakers	1	3	1	0	2	3
Per cent	25	75	100	0	40	60
Carpenters	1	3	3	0	4	3
Per cent	25	75	100	0	60	40
School children†	. . .	. . .	70	33†	. . .	. . .
Per cent	. . .	. . .	68	32	. . .	. . .

* Cooks include all housewife work.

† The distribution by sex is as follows:

	Males.		Females.	
	Pos.	Neg.	Pos.	Neg.
	37	14	33	19
†Per cent	72	28	63	37

This table comprises only a small fraction of the total number of individuals examined; the majority, however, would give no occupation when asked; only those acknowledging a calling are included in the table.

After discussing certain factors supposedly predisposing to malaria, in which he lays considerable stress on those factors which tend to lower the vital resistance, Celli discusses to considerable length the question, "Are there races immune from malaria"? He cites the case of bovine malaria in the cattle in the Campagna; they are rarely attacked by this disease, while cattle imported from Holland, Switzerland, Lombardy and other neighboring countries are rapidly decimated. Concerning human malaria, he cites Maurel, who says: "Practically no human race is immune to malaria, not even the black race, said by some to be immune. In places where severe malaria exists, certainly the black population which inhabits them acquires a relative immunity to the disease; but if in these same places another black population arrives which previously inhabited non-malarious places it is decimated by the fevers. A white population, also, which for centuries has lived in regions of intense malaria, finally acquires a relative immunity against malaria; that is, adapts itself to resist it. By this means a remarkable population, whose ancestors have lived in the Pontine Marshes for centuries, has become resistant to malaria; while a colony of Venetians, who lately were brought thither, were literally decimated by the fevers." Again, the poorly fed, poorly housed so-called hut dwellers, although much less physically fit than the agricultural peoples living in relatively healthy surroundings, suffer to a much less extent than the latter. Therefore, the fact of a natural relative immunity of some races from malarial infection is evident. This comes about apparently by habits and customs appropriate to such conditions and partly, no doubt, by an acquired tolerance to the malarial toxin or organism brought about by repeated attacks and recoveries.

Marchiafava and Bignami have summarized the status of malarial immunity thus:

We have seen that even when placed under the same conditions not all races are equally prone to contract malaria. Although there are no races originally immune to malaria, we are forced to recognize the fact that the various races present a varying degree of resistance to malarial infection; thus negroes inhabiting malarious regions in the tropics are less subject than white men in the same place to grave forms of malaria, and having once been infected they acquire, so it has been asserted, a relative immunity more readily than whites. Writers do not agree that negroes are racially immune; probably this is not true. The residents of the Kamerun coast, according to F. Plehn, seldom have malaria, and when they do the paroxysm rarely lasts more than a few hours. A change of residence deprives them of this relative immunity, at least temporarily. The relative immunity enjoyed by the natives of Abruzzo, in Italy, seems to be partly at least an acquired characteristic and partly congenital. This is explained by a process of natural selection, whereby in past generations those more fitted to withstand the malarial infection survived the ordeal and transmitted their acquired relative immunity to their offspring. The acquired factor is, however, less marked than would seem at first sight, while instances are known in which an active, acquired immunity has apparently been produced; these well authenticated cases are rare, and one can safely count only on the racial relative immunity as a whole.

Koch has confirmed the relative immunity of the negroes of the west coast of Africa, and has noted the course of the estivo-autumnal fevers (tropical fevers) in them and the occurrence of a spontaneous cure.

Cinchonization Experiments.—These experiments were undertaken to see if moderately small doses of quinin repeated daily for a short time would cause malarial parasites to disappear from the peripheral circulation in individuals who had no severe symptoms in addition to the organisms. Children, whose ages ranged from 6 to 16, were chosen for this work, and for convenience those attending school were especially selected. Such individuals would, to a certain extent, have acquired a tolerance for the malarial parasite without the development of immunity to any considerable degree.

Forty-one children took sulphate of quinin, 4 gr., in the form of a tabloid for six successive days. The drug was administered at the local dispensary, where the children reported at a definite time each day, and was taken in the presence of the attendant at that time, who made a record for each case. Six of the forty-one patients showed no malaria after three examinations made on successive days, and they were used as controls. It is perfectly possible that, existing in a latent form, malaria might be brought out by the drug, and it was for this reason that the controls were brought in. At the end of six days thirteen showed malarial parasites; this examination was repeated the next day with the same results, so there can be no doubt that in certain cases, at least, in which no definite febrile symptoms exist, quinin will not, in the dose given and in the given time, remove the parasites completely from the

blood. None of the controls showed parasites at the end of the six days.

SUMMARY AND CONCLUSIONS.

1. Malaria existed in certain towns of the Canal Zone at the time this work was done to such an extent that over 50 per cent. of the native born and 70 per cent. of the foreign born harbored parasites in their peripheral circulation.

2. This high percentage of infection does not necessarily mean that a corresponding number present febrile symptoms; in fact, many do not.

3. This high percentage of infection is a menace to the health of those who, by reason of their work, may be compelled to remain in such towns, particularly because of the wide distribution of the *Anopheles albipes*, a mosquito shown to be capable of transmitting malaria. Other anopheles to a lesser extent may also be factors in distributing malaria.

4. The estivo-autumnal malaria is the prevalent type; the Chagres fever is, in all probability, a severe estivo-autumnal infection. Pernicious malaria is not caused by a new parasite, but by an estivo-autumnal organism of exalted virulence.

5. Natives and their descendants or, in general, the descendants of those who have lived continuously on the Isthmus of Panama for many years, at birth have, to a certain degree, an inherited immunity; an active immunity, which is by no means absolute, is generally acquired, becoming manifest at about the age of 16. The foreign born acquires a tolerance to the malarial organism; this tolerance, however, is not as great nor does it begin as early as is the case with natives.

6. Malaria is an environmental disease; occupation has very little to do with the cause of this disease.

7. Quinin in moderate daily doses, while not absolutely guaranteeing freedom from malaria, or completely driving organisms from the circulation, has an important preventive and curative effect.

In conclusion, I wish to express my indebtedness to Col. W. C. Gorgas, Chief Sanitary Officer, and to Major H. R. Carter, Director of Hospitals, for their advice and kindly criticism during the progress of this work.

A REVIEW OF CANCER IN THE UNITED STATES, ACCORDING TO THE TWELFTH CENSUS.*

GUTHRIE McCONNELL, M.D.
Pathologist to the St. Louis Skin and Cancer Hospital.
ST. LOUIS.

There is no question before the profession or the laity that commands so much interest and even anxiety as that of the presence and mortality of carcinoma.

For many years there have been more or less sporadic efforts toward the investigation of the subject, but it is only within the last decade that serious attempts have been made in that direction. In that period various institutions have been established for the specific purpose of investigating this disease in all its relations, social, biologic, physiologic, chemic and pathologic. Although there has been no one discovery to stand forth beyond all others, yet valuable work has been done and is being done. The question was such a comparatively new one that much labor had to be expended in clearing the field from dead wood. Many ideas and theories had to be eliminated. With the field once cleared progress can be made much more rapidly and successfully.

The discovery that malignant tumors exist in the lower animals in their wild states has removed many of the beliefs concerning the effects of civilization on their formation. By the experiments conducted on mice in regard to the transplantation of carcinoma much may be reasoned out in its analogy to neoplasms in mankind.

Besides the laboratory investigations there is still much of value to be obtained from the statistical reviews concerning the prevalence of carcinoma in relation to the population of given countries or sections.

A question that still remains, to a certain degree, unsettled is whether carcinoma is actually on the increase. The opponents of that belief argue that the increase is an apparent one only and not real. They claim that the present figures represent merely an improvement both in the methods of diagnosis and in the registration of cases. Such objections may hold good to a certain degree if the figures of forty and fifty years ago are compared with those of to-day. Our methods of the present are more accurate in every way and may be answerable for some of the increase. If, however, the figures of the past two decades are taken into consideration the objections can not hold to such an extent. The improvements in diagnosis in that time have not advanced so wonderfully.

Further, as laboratory methods have improved many tumors have been removed from the category of malignant growths and have been put in the benign class. It would seem reasonable to expect that improved diagnoses would decrease the number of carcinoma cases. Instead of every tumor present in a person dying being considered the cause of death, and consequently cancerous, their true nature is now disclosed.

For the sake of comparison the death rates from consumption and pneumonia have been included with that of cancer in Table 1. This shows the principal reported causes of deaths in the United States in the census years of 1900 and 1890, in the order of their frequency, with the proportion from each cause per 100,000 from all causes.

TABLE 1.

	1900.		1890.	
Cause of death.	Number.	Proportion.	Number.	Proportion.
Consumption.	111,059	10,688	102,199	12,146
Pneumonia	105,971	10,198	76,196	9,091
Cancer	29,475	2,837	18,536	2,203

The census table, of which Table 1 is a part, also shows an increase over 1890 in the proportion of deaths due to pneumonia, heart disease, diseases of the kidney, typhoid fever and cancer and a decrease in consumption and diarrheal diseases. In this table cancer ranks sixth.

For the registration area in 1900 and 1890 the number of deaths from certain causes and the death rates due to each cause per 100,000 of population were: In 1890 the number of deaths from cancer was 9,410 and the death rate was 47.9. At that time cancer came thirteenth on the list of causes of death. In 1900 there were 17,296 deaths, with a death rate of 60.0 and a position of seventh on the list. The figures for the corresponding years from consumption were, for 1890, 48,236 deaths and a death rate of 245.4; for 1900, 54,898 deaths and a rate of 190.5. From being first it dropped to second on the list. From pneumonia there were in 1890, 36,552 deaths and a rate of 186.9; for 1900, 55,296 deaths and a rate of 191.9, thus displacing consumption from the first place. The tables from which these figures are obtained show an increase in the relative mortality from diseases most frequent in adult life and advanced age and a decided decrease incident to infancy and early youth.

* Compiled from the last census of the United States. Figures concerning other countries have been obtained from various sources.

The death rate from consumption, pneumonia and cancer in the registration area and its subdivisions per 100,000 of population in 1900 in comparison with 1890 is shown in Table 2.

TABLE 2.

	Pneumonia.		Consumption.		Cancer.	
	1900.	1890.	1900.	1890.	1900.	1890.
Registration record...	191.9	186.9	190.5	245.4	60.0	47.9
Registration, cities..	210.5	201.4	208.2	265.6	58.3	47.1
Registration, states:						
Total	193.3	197.3	179.4	249.9	62.1	50.9
Cities	233.1	234.1	249.0	208.7	59.8	51.3
Rural	135.9	141.1	137.1	181.0	65.3	50.3
Registration, cities in other states	189.9	171.1	207.7	239.9	57.0	43.2

From this table it is seen that the decrease in the death rate per 100,000 of population in consumption in the past ten years was 51.9. In that same time the death rate in cancer has increased 12.1 and pneumonia 5.0 per 100,000, as shown in Table 3.

TABLE 3.

	Total.	Cities.	Registration Total.	States: Cities.	Rural.	Cities in Other States.
Consumption, decrease..	54.9	57.4	69.6	84.8	43.9	32.2
Pneumonia, increase....	5.0	9.1	4.0*	1.0	5.2	18.8
Cancer, increase	12.1	11.2	11.2	8.5	15.0	13.8

* Decrease.

According to the rate of increase, cancer comes fifth, being led by the increase in diseases of the kidney, in fluenza, apoplexy and heart disease. The following tables and conclusions deal more definitely with the social and economic phases of carcinoma.

Deaths from cancer and tumor are first considered because it is impossible to distinguish them as they are commonly reported. Other points will be taken up more especially from the figures in the registration area. In Table 4 deaths from cancer are set forth for the census year of 1900.

TABLE 4.

	United States.		Registration area.	
	Male.	Female.	Male.	Female.
Cancer	11,436	18,039	6,388	10,908
Tumor	1,305	2,122	694	973

The total number was 32,902, of which 12,741 were males and 20,161 females. The proportion of deaths from these diseases in 1,000 deaths from a known cause was 32.9. In 1890 the corresponding proportion was 25.4.

In the registration area the number of deaths reported as due to cancer and tumor was 18,963, of which 7,082 were males and 11,881 females, giving a proportion of 37.4 deaths from these causes in every 1,000 deaths. A death rate of 65.8 per 100,000 of population. In 1890 the death rate was 53.1.

In the census years of 1900 and 1890 the death rates from cancer and tumor in the registration area and of its subdivisions show that the mortality from these two diseases was highest in the rural districts of the registration states (1900, 71.1 per 100,000; 56.0 in 1890) and lowest in the cities in the non-registration states (63 per 100,000 in 1900; 48.2 in 1890). It was higher among the whites (66.7 in 1900; 53.9 in 1890) than among the colored (47.7 in 1900; 36.7 in 1890). It was much higher in the native whites of native parents (66.9 in 1900; 58.6 in 1890) than in those of foreign parents (25.7 in 1900; 17.9 in 1890) and highest of all in the foreign whites (124.6 in 1900; 93.3 in 1890).

The relatively higher death rates of females (white, 83.2 in 1900; 69 in 1890; colored, 66.2 in 1900; 53.6 in 1890) than of males (white, 50.1 in 1900; 38.8 in 1890; colored, 28.6 in 1900; 19.2 in 1890) are due to the greater tendency of these diseases to attack the female mammary and generative organs. In comparison with 1890 there was a decided increase in the death rates due to cancer and tumor, ranging from 15 per cent. in the cities in the registration areas to 27 per cent. in the rural districts.

Deaths from cancer alone from the registration area and its subdivisions, which comprise certain states and cities in which the returns were sufficiently accurate to allow more definite tabulations, will now be considered. This area is composed of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut and Michigan and fifty cities not in the above states. In this latter class are included all of the largest cities in the respective states, such as Philadelphia, St. Louis, Baltimore, San Francisco, Milwaukee, St. Paul, New Orleans and others.

According to the death rates from cancer alone per 100,000 population, the registration states rank as follows:

Maine	83.7	Rhode Island	62.3
Vermont	81.8	New York	61.2
District of Columbia	71.8	Connecticutt	61.1
New Hampshire	66.8	Michigan	58.0
Massachusetts	66.4	New Jersey	50.4

The average death rate in these states, according to the districts and sex, was:

		Males.	Females.
Cities	59.8	41.7	77.2
Rural	65.3	47.7	83.7

The highest death rate (113.3) was among the females in the rural districts in New Hampshire and lowest (31.5) among the males in the cities in New Hampshire. The total number of deaths reported due to cancer alone in the United States during the census year of 1900 was 29,475, of which 11,436 were males and 18,039 were females, and the proportion of deaths from this disease in 1,000 deaths was 29.5. In 1890 the corresponding ratio was 22.5. In the registration area there were 17,296 deaths from cancer. Of these 6,388 were males and 10,908 females, giving a proportion of 34.1 deaths from this disease in 1,000 deaths from all known causes, and a death rate of 60 per 100,000 of population. In 1890 the death rate was 47.9. The proportion of 34.1 is made up of 12.58 or 36.9 per cent. males and 21.51 or 63.1 per cent. females. Of the 17,296 deaths 16,758 were white and 538 colored. In England and Wales the death rate from cancer in the year 1899 was 82.9 (males 67.2; females 97.7). The increase in the English rate between 1890 and 1899 (15.3 per 100,000) was greater than the increase in the registration area of the United States between 1890 and 1900 (12.1). The death rate from cancer during the census year for the registration area and its subdivisions per 100,000 of white population by birthplace of mothers is given in Table 5.

TABLE 5.—DEATH RATES BY BIRTHPLACES OF MOTHERS.

Birthplaces of Mothers.	Total.	Cities.	Registration record. States.			Cities in Other States.
			Total.	Cities	Rural.	
United States	48.3	40.4	52.4	45.4	58.2	30.4
France	92.8	96.4	83.6	85.3	79.7	117.3
Scotland	81.8	74.4	87.3	83.2	96.0	50.2
Germany	78.2	79.7	79.6	82.6	70.5	74.7
Ireland	76.4	75.0	76.4	71.7	82.5	76.6
England and Wales.	72.0	70.9	71.4	69.6	74.9	75.1
Canada	40.3	37.8	40.6	38.0	43.8	36.0
Hungary, Bohemia ..	31.5	33.1	27.4	29.3	16.0	39.0
Scandinavia	31.1	32.8	30.7	33.7	25.3	31.9
Russia, Poland. ...	25.7	25.9	26.2	26.6	23.5	23.1
Italy	22.8	23.3	21.7	22.0	20.1	34.3
Other countries...	48.5	49.1	49.0	49.9	46.8	46.0

This table shows that the death rates due to cancer were highest among those whose mothers were born in

France, 92.8; in Scotland, 81.8, and in Germany, 78.2; and were lowest in those whose mothers were born in Scandinavia, 31.1; in Russia and Poland, 25.7, and in Italy, 22.8.

CANCER IN CITIES.

The increase in the death rate in the cities and rural districts is not equally rapid, as in the latter the advance over the returns of 1890 has been decidedly more rapid than is the case in the cities. In 1902 the five following cities led the list in regards to the number of deaths from cancer in every 1,000 deaths from all causes:

	1902.	1903.
Brockton, Mass.	80.6	61.2
Davenport, Iowa	79.9	50.6
Auburn, N. Y.	71.9	73.1
Jackson, Mich.	67.2	56.4
Rochester, N. Y.	65.8	...

In 1903 the following five cities were at the head:

	1903.	1902.
Saginaw, Mich	73.2	65.5
Malden, Mass.	73.1	57.0
Auburn, N. Y.	73.1	71.9
Quincy, Mass.	69.4	...
Grand Rapids, Mich.	69.2	55.7

In regard to the size of the cities, the death rate in the two years of 1902 and 1903 per 1,000 deaths in the ten largest was as follows:

	1903.	1902.
New York	38.7	35.9
Chicago	41.9	44.4
Philadelphia	38.2	38.2
St. Louis	40.3	31.8
Boston	50.9	45.7
Baltimore	38.3	39.8
Cleveland	37.4	34.3
Buffalo	47.0	45.3
San Francisco	58.1	59.4
Cincinnati	44.5	43.2

It therefore seems that the death rate from cancer averages less in the larger cities than in the smaller ones.

DEATH RATE AT VARIOUS AGES.

According to four-year periods, there is a gradual increase in the number of deaths up to 25 to 29 years. There is then a rapid rise up to 55 years, when it remains nearly stationary till 70, at which point the mortality begins to fall rapidly.

TABLE 6.—DEATHS FROM CANCER AT EACH AGE PER 1,000 DEATHS.

	1900.		1890.	
Age.	Male.	Female.	Male.	Female.
20-24	7.5	4.3	6.5	7.0
25-29	10.5	13.3	15.7	16.3
30-34	19.9	30.8	23.7	39.0
35-39	34.5	60.4	43.8	59.3
40-44	58.0	89.3	54.2	95.2
45-49	84.1	115.6	86.3	115.7
50-54	117.5	122.8	111.6	133.5
55-59	131.2	133.3	130.3	121.3
60-64	136.6	124.9	148.5	122.9
65-69	139.5	112.0	143.9	100.9
70-74	113.1	83.2	100.5	77.4
75-79	81.0	58.9	70.3	53.9
80-84	37.3	31.1	33.3	30.2
85-89	14.6	11.0	13.3	13.9

The figures of Table 6 show that the cancer mortality among females takes on a more rapid increase at an earlier period than in males, and that the female mortality is about a single four-year period ahead until the 55-59 period is reached, when the figures are approximately the same. From then on the mortality of females decreases while that of the males remains fairly stationary till 69 years, when it also diminishes, and the two death rates again approximate during the 85-89 period. It would seem that if a woman lives to be 60 years of age she is much more likely to escape having cancer than is a man, as that seems to be the age in men at which the mortality from cancer is the greatest. The average age at death from cancer in the registration area in 1900 was 58.1 years. In 1890 it was 57.2. For those dying at 15 years of age and over the average age in 1900 was 58.3 and in 1890 was 57.5.

TABLE 7.—DEATH-RATE FROM CANCER PER 100,000 OF POPULATION OF CORRESPONDING AGES, BY BIRTHPLACES OF MOTHERS.

	Age.		
Birthplaces of mothers.	15-44	45-64	65 and over.
Scotland	27.2	151.	533.8
France	23.9	212.1	428.3
Germany	22.8	226.2	530.4
Ireland	22.2	215.1	452.1
Russia	21.6	245.3	654.6
England and Wales	21.4	171.5	415.5
Canada	17.1	176.0	434.0
Scandinavia	16.1	148.1	371.8
United States	14.7	145.1	349.4
Italy	14.5	115.0	....
Hungary and Bohemia	13.4	209.0	....
Poland	9.4	88.5	263.5

If those of 65 years and over are noted it will be seen in Table 7 that the rates were highest in those whose mothers were born in Russia, 654.6; in Scotland, 533.8; in Germany, 530.4; and were lowest in those whose mothers were born in the United States, 349.4; in Hungary, 280.9; and in Poland, 263.5.

TABLE 8.—DEATH RATES FROM CANCER FOR THE REGISTRATION AREA AND ITS SUBDIVISIONS DURING THE CENSUS YEAR, IN EACH OF FIVE AGE GROUPS PER 100,000 OF POPULATION OF CORRESPONDING AGES BY SEX.

Registration areas.	Under 5	5-14	15-44.	45-64	65 and over.
Total	1.3	0.8	20.5	194.8	454.3
Males	1.5	0.7	11.5	136.6	417.0
Females	1.1	0.9	29.4	253.0	487.6
Cities	1.0	0.9	21.6	212.3	482.4
Males	1.0	0.7	12.4	155.6	456.5
Females	1.0	1.0	30.6	269.2	503.5
States	1.5	0.9	19.6	183.5	447.3
Males	1.8	0.9	10.2	122.9	394.0
Females	1.2	0.8	29.0	244.3	495.7
Cities	1.0	1.1	21.4	209.8	494.2
Males	0.9	1.2	11.3	147.3	439.2
Females	1.1	1.0	31.2	269.8	536.9
Rural	2.3	0.5	16.6	153.2	412.9
Males	3.1	0.6	8.5	96.1	365.3
Females	1.4	0.5	25.2	213.4	461.4
Cities in other States	1.0	0.7	21.8	214.8	470.7
Males	1.0	0.4	13.5	163.2	472.8
Females	0.9	1.0	30.1	268.7	468.9

Table 8 shows that the mortality from cancer was greatest in persons of 65 years and over, and at this age it was higher in females (487.6) than in males (417.0), and was higher in the cities (494.2) than in the rural districts (412.9) of the registration states.

TABLE 9.—DEATH RATES AT CERTAIN AGES, BY CONJUGAL CONDITIONS.

	15-44.			45-64.			65 and over.		
Sex.	Single.	Married.	Widowed.	Single.	Married.	Widowed.	Single.	Married.	Widowed.
Total	8.7	28.6	69.6	192.1	175.6	256.4	518.7	426.0	455.8
Males	6.5	15.7	40.3	142.1	125.8	200.8	512.5	388.0	433.7
Females	11.3	39.8	80.7	248.8	238.8	275.9	523.1	496.7	464.9

Table 9 shows that from 15 to 44 years of age the death rate of the married of both sexes was higher than that of the single. Above 44 years the rate for the single was higher in both sexes than for the married, and at 65 years and over it was higher in the single of both sexes than in either the married or the widowed.

CANCER OF VARIOUS ORGANS.

Table 10 shows, for the registration area, the number of deaths at certain ages from cancer of certain specified organs or parts per 1,000 total deaths at the same age, from cancer for which the organ or part is known, by sex.

This table also shows that in each 1,000 deaths of males at all ages from definitely located cancer—

436.6 were due to cancer of the stomach.
145.6 were due to cancer of the liver.
104.2 were due to cancer of the head, face and neck.
95.5 were due to cancer of the mouth tongue and throat.
92.4 were due to cancer of the abdomen.
54.9 were due to cancer of the rectum.

In females the distribution per 1,000 deaths from cancer was as follows:

276.2 were due to cancer of the uterus.
244.7 were due to cancer of the stomach.
157.8 were due to cancer of the breast.
125.9 were due to cancer of the liver.
76.9 were due to cancer of the abdomen.
35.5 were due to cancer of the rectum.

The excess of deaths from cancer of the female generative and mammary organs reduces the proportions due to cancer of the other organs or parts, as compared with the proportions given for the males. If, however, cancer of those organs is excluded the death rate of males from other forms of cancer exceeds that of the females.

Table 11 divides the 17,296 deaths that occurred from cancer in the registration area according to the organ or part that was affected and according to sex and to color.

TABLE 10.—PROPORTIONS OF DEATHS FROM CANCER OF CERTAIN ORGANS.

Organ or Region of Body.	All Ages.			24-44 years.			45-64 years.			65 years and over.		
	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Abdomen	82.8	92.4	76.9	78.6	118.9	62.6	79.2	92.2	71.5	88.4	83.3	92.4
Bladder	13.5	25.3	6.2	5.8	6.3	5.6	12.3	22.8	6.0	19.3	34.7	6.9
Brain	2.0	2.6	1.7	4.4	4.7	4.3	1.1	1.6	0.7	1.4	2.0	0.8
Breast	....	7.5	157.8	....	11.0	151.9	....	7.8	157.8	....	6.1	162.4
Eye	1.3	2.4	0.7	....	....	....	0.3	0.4	0.2	2.5	4.6	0.8
Genitals	....	9.6	6.3	....	3.1	8.1	....	8.6	5.8	....	12.8	6.1
Head, face and neck	59.2	104.2	31.4	37.3	92.3	15.5	46.2	95.1	17.4	87.9	118.0	63.9
Larynx	4.9	10.8	1.3	4.0	7.8	2.5	5.4	13.1	1.0	4.8	9.2	1.2
Liver	133.4	145.6	125.9	112.3	159.6	93.6	133.7	151.4	123.3	143.2	152.4	151.9
Lower extremity	2.7	3.7	2.1	2.7	4.7	1.9	2.0	2.4	1.7	3.6	4.6	2.9
Lungs	5.5	6.1	5.1	4.9	6.3	4.3	7.4	8.6	6.7	2.9	3.1	2.9
Mouth, tongue and throat	46.8	95.5	16.8	25.3	67.3	8.7	45.4	98.3	14.2	59.6	101.2	26.5
Ovaries	....	....	9.7	....	....	16.7	....	....	8.9	....	....	5.3
Penis	....	3.9	....	....	4.7	....	....	3.7	....	....	3.6	....
Rectum	42.9	54.9	35.5	54.2	79.8	44.0	39.8	50.6	33.5	42.6	53.7	33.8
Stomach	315.6	430.6	244.7	249.6	427.2	179.2	318.8	441.4	246.4	348.0	422.6	288.7
Testicle	....	1.6	....	....	4.7	....	....	0.8	....	....	1.5	....
Upper extremities	1.9	3.3	1.1	1.3	1.6	1.2	0.9	1.2	0.7	3.9	6.6	1.6
Uterus	....	....	276.8	....	....	399.9	....	....	301.2	....	....	151.9

TABLE 11.

Situation.	Total.	Male.	Female.	White.		Colored.	
				M.	F.	M.	F.
Abdomen	1107	471	636	463	631	8	5
Bladder	180	129	51	125	49	4	2
Brain	27	13	14	12	14	1	..
Breast	1344	38	1306	36	1256	2	50
Extremities	62	36	26	33	25	3	1
Eye	18	12	6	12	6	..	..
Genitals	101	49	52	48	51	1	1
Head, face and neck	791	531	260	521	235	10	5
Kidney	90	41	49	40	47	1	2
Larynx	66	55	11	55	11	..	..
Liver	1784	742	1042	720	1024	22	18
Lungs	73	31	42	30	40	1	2
Mouth, tongue and throat	626	487	139	477	133	10	6
Ovaries	80	..	80	..	76	..	4
Penis	20	20	..	20	..	..	..
Rectum	574	280	294	271	279	9	15
Stomach	4220	2195	2025	2140	1964	55	61
Testicle	8	8	..	7	..	1	..
Uterus	2291	..	2291	..	2164	..	127
Not specified	3834	1250	2584	1223	2500	27	84

Cancer of the Breast.—The death rate per 100,000 population was much higher in the females (9.1) than in the males (0.3); it was also much higher for the age group 15 to 64 years (30.7) than at lower ages, and was still higher in those 65 years of age and over, females 59.6, males 2.0.

The death rate from this cause at all ages was higher in white females (9.1) than in colored females (7.9). Under 15 it was higher in the colored females (7.2) than in the whites (3.9), but after that age it was higher in the whites. In white females from 45 to 64 years of age the death rate was about the same in the native born (30.3) and the foreign born (30.9). At 65 years of age and over the death rate for the same classes was higher, natives, 66.6; foreign born, 50.1.

Cancer of the Liver.—The returns indicate that the death rate at all ages was higher in females (7.2) than in males (5.2), and this difference was especially marked in those from 45 to 64 years of age, females 24.0, and males 17.1. As primary carcinoma of the liver is decidedly uncommon, the above figures are what one would naturally expect, inasmuch as the greatest number of cases of cancer occur in women between the years of 45 and 64. Consequently a higher rate of secondary involvement of the liver would occur.

Cancer of the Head, Face and Neck.—Of the total number of cases in this region 531 were in males and 260 in females. The death rate for this group was much higher in males (3.7) than in females (1.8), and was highest in persons 65 years of age and over, males 38.6 and females 23.5.

Cancer of the Mouth, Tongue and Throat.—This was three and a half times more frequent in men than in women. Of the 626 cases 57 occurred at 20 to 44 years, 300 at 45 to 64, and 263 at 65 and over. The death rates for both males and females were highest in the age group of 65 years and over, males 33.1, females 9.7. These results, together with those of the group immediately preceding, might be considered as further supporting the theory that chronic irritation is an important factor, particularly in the origin of superficial carcinoma. The natural conclusion would be that the greatest number of the above cases were of the squamous epitheliomatous type. This variety is in so many cases preceded by a history of chronic irritation that it would seem as if such an etiology must be taken into serious consideration.

Cancer of the Stomach.—A greater number of deaths than was brought about by carcinoma in any other situation arose from this cause. Out of the total number of deaths from cancer, 29,475, there were 4,220 due to carcinoma of the stomach, 13.9 per cent. The two sexes were practically equally involved, males, 2,195; females, 2,025. The death rate was very low in persons under 45 years of age, and was more than twice as high in persons of 65 years as in those between 45 and 64 years of age. In those 65 years and over it was higher in the males (138.3) than in females (105.9); much higher in whites (122.4) than in the colored (77.1), and higher among the foreign born whites (153.2) than among the native born whites (96.6).

Cancer of the Uterus.—Of all cases of carcinoma 2,291 deaths, constituting 7.9 per cent. of the total and 12.6 per cent of those occuring in women resulted from cancer of the uterus. The death rate in those from

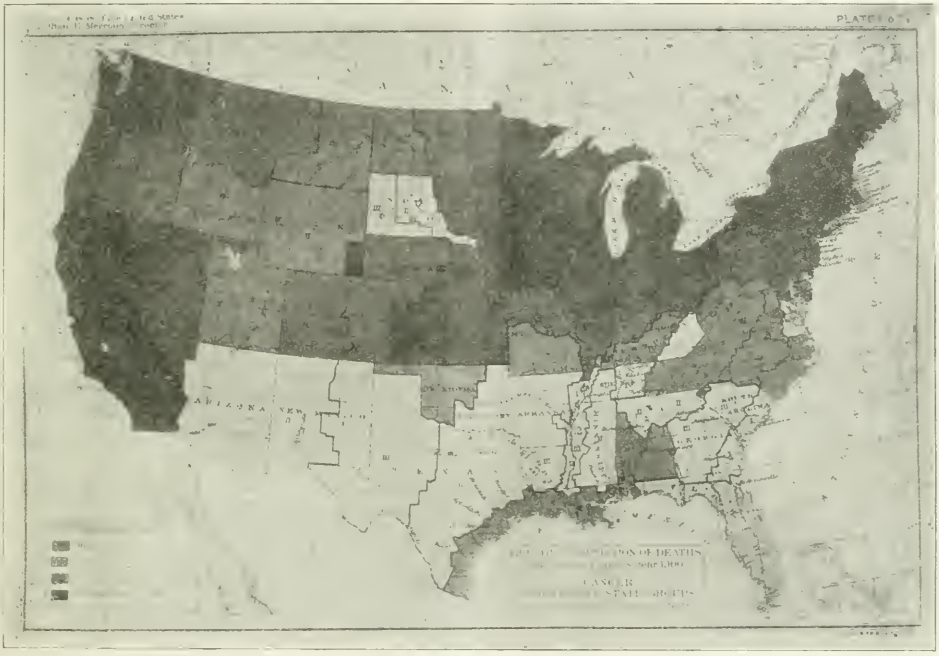
20 to 44 years was 10.7. It was highest (59.1) in those from 45 to 64, but continued high (55.7) in those of 65 and over. It was much higher in the colored than in the whites of each group and it was higher in the native white at 45 to 64 years of age (59.6) than in the foreign white (55.5).

THE RELATION OF CANCER TO OCCUPATION.

The following list shows, for the registration states, the death rate from cancer in males per 100,000 of population engaged in the specified pursuits:

Miners and quarrymen	33.4
Sailors, fishermen, etc.	113.1
General average for occupied women	49.7
School teachers	47.8
Bookkeepers and clerks	15.1
Laundresses	23.3
Nurses and midwives	165.0
Servants	99.6
Textile operatives	9.9
Dressmakers	38.4

The percentage of death from cancer in relation to the entire number of deaths from all causes in the United States in the registration area and its subdivisions, is given in Table 12.



General average for all occupied males	57.1
Professional	51.7
Clergymen	162.2
Lawyers	52.5
Physicians	67.5
Clerical	37.3
Bookkeepers and clerks	28.0
Bankers, brokers	41.4
Collectors, auctioneers, and agents	58.1
Mercantile and trading	52.0
Merchants and dealers	81.3
Hucksters and peddlers	62.7
Public entertainment	35.3
Hotel and boarding-house keepers	60.1
Saloon and restaurant keepers	28.0
Personal service, police and military	42.9
Janitors and sextons	66.7
Policemen, watchmen and detectives	60.3
Laboring and servant class	66.5
Laborers other than agricultural	126.6
Servants	44.3
Manufacturing and mechanical industry	53.3
Bakers and confectioners	51.0
Blacksmiths	107.3
Cabinetmakers and upholsterers	72.6
Carpenters and joiners	77.7
Iron and steel workers	31.5
Machinists	52.2
Masons, stone and brick	98.0
Textile operatives	34.5
Painters	45.0
Tailors	58.4
Agricultural, transportation and other outdoor class	69.2
Draymen, hackmen, drivers, etc	22.6
Farmers, planters and farm laborers	87.7
Gardeners, florists, etc.	72.9
Stablemen	46.1

TABLE 12.

	White males. per cent.	Colored males. per cent.	Females. per cent.
In the United States	3.63	0.78	4.40
In the registration record	3.86	1.30	5.64
In the registration cities	3.71	1.34	5.37
In the registration states	3.8	1.36	5.97
Cities in registration states	3.5	1.54	5.86
Rural districts in registration states	4.2	0.65	6.61
Registered cities in other states	3.8	1.29	5.11
Non-registration record	3.3	0.60	3.22

THE GEOGRAPHICAL DISTRIBUTION OF CANCER AND TUMOR IN THE UNITED STATES.

Table 13 shows for each grand group in the United States the proportion of deaths from cancer and tumor, during the census year, per 1,000 deaths from known causes, in the aggregate and by sex, for the cities and rural districts.

According to this table the proportion of deaths due to cancer and tumor was greatest in the Pacific coast region, 51.9; in the heavily timbered region of the Northwest, 46.8; in the Northeastern hills and plateaus, 44.5; and in the Prairie region, 43. It was least in the Southern interior plateau, 18.1; in the Southwest central region, 15.8, and in the North Mississippi River belt, 11.3.

TABLE 13.—NUMBER OF DEATHS PER 1,000 DEATHS FROM KNOWN CAUSES.

Grand group.	Rural.			Cities.	
	Total.	Males.	Females.	Males.	Females.
Pacific Coast region	51.9	36.5	69.4	43.6	70.3
Heavily timbered northwest region	46.8	34.4	58.8	39.9	64.6
Northeastern hills and plateaus	44.5	33.8	65.1	24.4	47.9
Prairie region	45.0	36.4	50.3	33.2	60.2
Region of great northern lakes	41.6	37.3	57.1	30.6	49.7
North Atlantic coast region	41.5	34.3	67.9	23.4	52.3
North Mississippi River belt	37.3	29.7	46.7	27.0	49.8
Interior plateau	34.4	25.2	50.7	21.3	43.5
Central Appalachian	34.4	26.8	48.2	18.3	44.4
Ohio River belt	34.2	24.4	39.8	26.4	50.7
Central region, plains and prairies	34.1	25.1	42.9	22.9	49.9
Cordilleran region	32.1	25.7	41.5	31.3	40.8
Missouri River belt	31.0	27.2	37.3	24.2	38.8
Middle Atlantic coast region	31.0	20.9	39.2	21.2	42.9
Region of western plains	26.5	19.9	32.9	26.7	42.4
Gulf coast	20.2	13.1	25.3	15.0	30.9
Southern Central Appalachian	20.0	13.5	26.8	6.5	30.6
South Atlantic coast region	18.7	10.2	25.2	10.5	32.3
Southern plateau region	18.1	9.1	26.8	...	...
Southwest central region	15.8	12.7	18.7	22.7	25.8
South Mississippi River belt	11.3	6.3	12.5	12.2	30.7

Reviewing certain of the United States census statistics, a writer[1] says: "The question of nationality will be found to furnish an explanation of the very high mortality in those states in which the greater number of immigrants from Europe make their home." It also states that "it is obvious that the Atlantic states, which receive every year a mass of immigrants from Great Britain and Germany would be expected to show from this cause alone a distinctly higher cancer rate than those inhabited by native born population." Unfortunately such reasoning is not supported by the facts. By comparing certain of the grand groups, according to their proportion of native born, we find the conditions set forth in Table 14.

TABLE 14.

Grand group.	Deaths from cancer per 1,000 deaths.	Native white.	Foreign white.
Pacific coast region	51.9	73.7	21.7
Heavily timbered northwest region.	46.8	76.6	22.1
Northeastern hills and plateaus.	44.5	79.0	20.3
Prairie region	43.0	84.0	14.3
Region of great northern lakes	41.6	70.6	28.3
North Atlantic coast	41.5	about 75.0	about 23.6
North Mississippi River belt	37.3	79.2	17.3
Interior plateau	34.4	76.7	12.2
Ohio River belt	34.2	87.8	6.5
Central region, plains and prairies	34.1	87.8	4.4
Cordilleran region	32.1	76.8	16.8
Middle Atlantic coast	31.0	65.0	25.2
			Colored.
Gulf coast region	20.2	55.4	38.6
South Central Appalachian	20.0	81.7	...
South Atlantic coast	18.7	...	53.0
South interior plateau	18.1	46.3	53.4
South Mississippi River belt	11.3	32.9	65.9

From this table it is seen that the two regions that have the greatest per cent. of foreign population occupy respectively the fifth and twelfth positions as regard the cancer death rate. Again the South Carolina Appalachian region is the fourth lowest and its population is composed of 81.7 per cent. native white; on the other hand the native white population of the Prairie region is 84 per cent. and it is the fourth highest. In the Southern states where the colored population is very great the average cancer rate is the least. This is a condition to be expected, knowing the lesser mortality in that race from cancer. Hyde in a recent article concludes that, "Physiological pigmentation of the skin seems to furnish relative immunity against cancer of that organ;" and also, that "The colored races apparently suffer less than the whites from cancer of other organs than the skin. This relative immunity may be due to the protection from actinic rays of light furnished by the pigment of the integument." It would seem evident from Table 14 that the death rate from cancer in the different parts of the United States has no direct relation to the number of foreign whites in the population.

By an examination of a cancer map of the United States one's attention is immediately attracted by the fact that, with the one exception of California, the area is divided into two great divisions in regard to the mortality per 1,000 deaths from known causes. South of the latitude of 37° the number of deaths from cancer is under 16 per 1,000. This includes Arizona, New Mexico, Texas, Indian Territory, Arkansas, Mississippi, Louisiana, South Carolina, Georgia and Florida, the Western end of Tennessee and the Northern end of Alabama. In the following areas the death rate is a little higher, from 16 to 24, the coast line of Texas, Louisiana, Mississippi, the Southern part of Alabama and Oklahoma. Above the latitude of 37° the cancer mortality in that portion between the Missouri River and California and the Western half of Washington and Oregon varies from 25 to 39 per 1,000 deaths. East of the Missouri River to the Atlantic Coast the mortality is generally from 31 to 40 and over.

GENERAL SUMMARY.

In the registration area in 1890 cancer was thirteenth in the list of causes of death and the death rate was 47.9 per 100,000 of population. In 1900 it had moved up to seventh, with a death rate of 60.0.

In the United States in 1900 the proportion of deaths from cancer in 1,000 deaths of known causes was 29.5. In 1890 the corresponding proportion was 22.5. In England and Wales the death rate in 1899 was 82.9, an increase of 15.3 per 100,000 from 1890 to 1899 as against a corresponding increase of 12.1 between 1890 and 1900 in the registration area of the United States.

TABLE 15.—DEATH RATE PER 100,000 OF POPULATION.

	1900.	1890.
Rural district of registration states	71.4	56.0
Cities in non-registration states	63.0	48.2
Among the white	66.7	53.9
Among the colored	47.7	36.7
Native whites of native parents	66.9	58.6
Native whites of foreign parents	25.7	17.9
Foreign whites	124.6	93.3
Females, white	83.2	69.0
Females, colored	66.9	53.6
Males, white	50.1	38.8
Males, colored	28.6	19.2
Males	36.9	...
Females	63.1	...
Average age at death from cancer	58.1	57.2

Mortality greatest at 65 years, and at this age was higher in females than in males.

The death rates were highest in those whose mothers were born in Russia, Scotland and Germany; and lowest in those born in the United States, Hungary and Poland.

According to conjugal condition and age the death rate from 15 to 44 years of age was higher in the married of both sexes than in the single. Above 44 years the rate for the single was higher in both sexes than for the married. At 65 years and over it was higher in the single of both sexes than in either the married or widowed.

In each 1,000 deaths of males of all ages from definitely located cancer:

430.6 were due to cancer of the stomach.
145.6 were due to cancer of the liver.
104.2 were due to cancer of the head, face and neck.
95.5 were due to cancer of the mouth, tongue and throat.
92.4 were due to cancer of the abdomen.
54.9 were due to cancer of the rectum.

In females:

276.2 were due to cancer of the uterus.
211.7 were due to cancer of the stomach.
157.8 were due to cancer of the breast.
125.9 were due to cancer of the liver.
76.9 were due to cancer of the abdomen.
75.7 were due to cancer of the rectum.

1 Medical Journal, May 2, 1903.

When the occupations are compared there are seen to be great variations in the cancer mortality. With one exception, to be mentioned later, the greatest mortality from cancer occurs in those who do hard work out of doors. Leading the list with a rate of 126.6 come the laborers other than agricultural, then sailors and fishermen 113.1, blacksmiths 107.3, masons 98.0, and farm laborers 87.0. The one exception is the average for clergymen, 102.2. This may possibly be explained by the fact that this class commonly attains a higher average age than most of the other classes. It would seem that there is some direct relation between occupation and cancer mortality. It is difficult to say what it has to do with hard work and exposure unless it has a bearing on the theory of chronic irritation. Before that point could be argued it would be necessary to know the location of the new growths.

A point against the theory of alcohol having something to do with cancer is that the average in those of the public entertainment class is 35.3. This is the lowest of all the groups. The average under this heading for saloon and restaurant keepers is only 28.0. If the consumption of beer or other alcoholic drinks had anything to do with the disease a higher average should be found.

It can also be shown that the consumption of beer has no direct influence on cancer rate by comparing the rates in certain of the cities that are largely inhabited by Germans and that are centers of brewing. In Milwaukee the rate per 1,000 deaths was 52.5, in Cincinnati 44.5, and in St. Louis 40.3. These cities come below San Francisco 58.7, Syracuse 57.2, Springfield 56.2, Hartford 53.9 and others, and are about equal to that of Detroit 49.4, Los Angeles 47.6, Buffalo 47.0, and New Haven 46.8.

The opinion of certain investigators that cancer is more common along the banks of rivers or streams is not well sustained by the figures. Those sections in the United States along the various great rivers, as the Mississippi, Missouri, Ohio, Rio Grande and numerous others, have, with a few exceptions, a lower mortality than the other parts of the country. The only points in common in the widely scattered areas of high mortality are that these regions are generally hilly or mountainous and are both well timbered and well watered by many streams and lakes.

The increase in cancer mortality in immigrants in the United States as compared with the rate in their own country may very readily be an apparent and not a real one. Those who come to this country are adults as a rule and consequently have a higher cancer death rate than the average of all ages. The only way in which comparisons of value could be made would be to compare the death rate of a large number of immigrants of a certain age with a corresponding number of similar age in their native country.

CONCLUSIONS.

1. That cancer appears to have actually increased in the United States 12.1 deaths per 100,000 population in the past ten years.

2. That the death rate is higher in the rural districts and small towns than in the cities.

3. That native whites suffer much less than the foreign whites.

4. That the death rate amongst the foreign whites in the United States is only apparently greater than in their own homes.

5. That 63.1 per cent. of all cancer cases are in women and 36.9 per cent. in men.

6. That those employed in hard outdoor work have a higher cancer mortality than the sedentary classes.

7. That the areas showing the greatest mortality are mountainous regions that are well watered and timbered.

8. That cancer does not seem to be generally more prevalent along rivers.

9. That those cities in which there are both a large German population and large brewing interests do not show a corresponding increase in cancer mortality.

10. That cancer mortality is greatest in persons of 65 years and over.

11. That the average age at death is 58.1 years.

410 North Jefferson Avenue.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XVIII.

GENERAL TONICS.

Tonics are defined by Gould as "medicines or agents which promote nutrition and give tone to the system."

Since these conditions are met by any improvement in the general health, the use of the term is often an admission of our want of exact knowledge of the mode of action of the drugs or remedies so classed.

Strychnin increases the reflexes and may thus improve the muscular tone. Bitters may increase the impaired appetite and digestion, which will, of course, improve the general condition, hence these agents may be spoken of as tonics; and, if we were not acquainted with the organism which causes malarial fever, and with the effect of quinin on that organism, but merely knew that this condition was relieved by quinin, we would be justified in attributing the action to the tonic effect of quinin. Therefore, as our knowledge of the exact mode of action of the various remedies of this group increases, the importance of the term itself will correspondingly decline.

Among the tonics we may include stomachics (which have been discussed in Chapter XIV); hematinics, or agents which assist in the regeneration of blood, including iron, arsenic, cod-liver oil and hypophosphites; and the alteratives, the mode of action of which is unknown.

Hematinics.

Ordinary food is the most important of the hematinics, if, indeed, we have any others which are of considerable importance, especially if we accept the definition which includes iron in any assimilable form as food.

IRON.

Most of the iron in the body, amounting to from 2½ to 3 grams (38 to 45 grains) occurs as a constituent of hemoglobin, an extremely complex substance in which the iron is much more firmly bound than in the ordinary iron albuminate. In addition to that found in the blood, iron is an important constituent of the body cells, though present only in very minute quantity.

The animal body is generally supposed to be incapable of building up complex organic molecules from elementary substances, and it seems more than probable that all the iron in the hemoglobin is derived from the vegetable kingdom, and that inorganic salts of iron do not take part directly in its formation, though they may influence it markedly.[1]

The absorbability of inorganic iron was not questioned before the investigations of Kletzinsky, about fifty years ago, and it is even more recently that the subject began to attract considerable attention, but the literature at the present time is rather extensive and many contradictory results have been obtained.

It is perfectly obvious that iron as it exists in vegetables is capable not only of being absorbed, but of being utilized in

1. Prior to the discovery by Wöhler of the synthesis of such a comparatively simple substance as hippuric acid in the kidney, it was supposed that no synthesis could occur in the animal body.

the formation of hemoglobin, and it is only when the appetite or digestion is greatly impaired that there can ever exist any marked deficiency in the supply of iron, only about 10 milligrams (1 6 grain) being required daily under ordinary conditions, but there may arise the necessity for a stimulation of the function concerned in the utilization of the iron taken in the food; if inorganic iron stimulates this function, and it apparently does under certain conditions, then it acts as a medicine.

Many efforts have been directed toward determining whether iron, other than that existing in the food, is absorbed from the alimentary canal. Attempts to measure the difference between the amount ingested and that excreted proved inconclusive. Iron is probably excreted into the intestine after absorption, though Tartakowsky doubts if the iron found in the intestinal epithelium is in course of excretion, and the amount excreted often considerably exceeds that administered.

Microchemic means have been employed to solve the problem, and A. B. MacCallum has found that only a slight degree of absorption in the first few inches of the duodenum follows the administration of small doses of inorganic iron, nearly all being precipitated by the mixed chyme, pancreatic juice and bile, but when large doses are taken absorption appeared to take place through the whole length of the small intestine, while Tartakowsky found that inorganic iron was also absorbed from the rabbit's stomach.

MacCallum found that iron, in the form in which it exists in yolk of egg, is absorbed, while Marfori's albuminate and the commercial peptonate seemed to stimulate the leucocytes to invade the epithelial layer of the villi in the guinea-pig, but many investigators now believe that absorption occurs mainly by way of the lymph channels and not by the blood.

Since iron, like any other foreign substance, may be excreted without having been utilized after absorption, the question is not one of absorption alone, but of the form in which iron must be absorbed in order that it may take part in the formation of hemoglobin, and be utilized in the body cells.

In addition to the food irons, the assimilation of which it is not necessary to discuss at present, certain other forms have been found capable of being converted into hemoglobin, and we may say that many physiologic chemists believe that there is no reason to suppose that inorganic salts of iron are not as readily assimilated as are the organic, and Tartakowsky does not believe that even the food irons are absorbed in the form of the complex combinations in which they exist in plants.

Socin, working in Bunge's laboratory, proved that iron, in the form in which it exists in yolk of egg (hematogen, as it is called by Bunge, who isolated it), is capable of assimilation. He fed this, and no other form of iron, to mice for a period of 100 days, during which time they gained in size and weight without becoming anemic.

Bunge considers that hematogen is the undoubted precursor of hemoglobin, but his views have not been universally accepted. Hematogen, according to the investigations that have been made by Bunge, is more stable than the combinations of iron that are found in vegetables and it is also more easily isolated.

Schmiedeberg isolated an organic iron compound, which he named ferratin, from the liver, and which he considers the true precursor of hemoglobin. Ferratin may be prepared synthetically from an alkaline solution of albuminate of iron, and is usually considered merely as an ordinary albuminate, but Schmiedeberg strongly insists that it is iron-acid-albumin, and calls attention to certain chemic differences between it and the ordinary albuminate. Marfori isolated the compound containing 0.7 per cent. of iron, but as most easily prepared it contains from 4 to 8 per cent., which strongly suggests that the precipitate carries down mechanically some other form of iron.

The examples quoted serve to show the diversity of opinion among authorities as to the actual precursor of hemoglobin, but the question is of less therapeutic importance than it would seem at first thought, in view of the fact that it is a comparatively infrequent occurrence that a patient is unable to take a sufficient amount of iron in the food. We have devoted so much space to the subject mainly because the manufacturers of certain nostrums, used as hematinics, are prone to quote such results as those obtained in Bunge's laboratory only so far as they show that organic iron preparations are assimilable while the inorganic are not, but we have not yet seen any mention made in the free circulars of the statement made by Bunge that inorganic iron does stimulate the functions concerned in the assimilation of iron when it is abundant in the food, and that organic iron preparations are without beneficial effect under similar conditions.

This, however, is of the very greatest importance from a practical point of view, because we can nearly always select a suitable diet containing an abundance of iron, and organic iron in any other shape is, therefore, seldom if ever required.

As evidence of the rôle played by inorganic iron we may mention the results obtained by Abderhalden.

He found that the iron of hematin and hemoglobin is not so readily assimilated as is that of the ordinary food. Animals were fed on a diet in which a deficiency of iron was made up by hematin and hemoglobin, and they did not thrive so well as those which received food containing a sufficiency of iron, though those which received hematin and hemoglobin did thrive better than those in which the deficiency was made up by an inorganic iron. This might be easily considered as conclusive proof of the value of organic iron nostrums, but when we repeat that it rarely happens that the patient can not take food containing an abundance of iron the fact loses most of its significance.

When the food was rich in iron the addition of hematin and hemoglobin (which may be considered the best type of organic iron) had no effect on the assimilation of the food iron, but when inorganic iron was added to such iron-rich food the assimilation was stimulated.[2]

When inorganic iron is added to the food or to organic iron, it combines with the hydrogen sulphid in the intestine and spares the organic iron from precipitation. Inorganic iron should thus prove beneficial even if Schmiedeberg were correct in contending that inorganic iron is not absorbed from the intestine except after corrosion of the mucous membrane. He claims that corrosion occurs even when such a salt as ferric chlorid is administered after free dilution, because the water is rapidly absorbed, leaving the salt in concentrated solution.

Other investigators have also called attention to the corrosive action of hydrochloric acid when liberated from a metallic salt in contact with the tissues, and it may be found that the ferrous sulphate or carbonate may be found to be preferable to the more widely used ferric chlorid.

OFFICIAL PREPARATIONS OF IRON.

The list of official preparations of iron is a long one and comprises a number of substances that are not generally used as hematinics.

The use of the salts of iron as astringents has been referred to in Chapter XIII, and need not be recapitulated at this time more than to enumerate the preparations that may be so used.

Among the official preparations that are useful as astringents or as styptics are the following:

LIQUOR FERRI TERSULPHATIS and LIQUOR FERRI SUBSULPHATIS.—U. S.—The solution of ferric subsulphate, in addition to being used as an astringent and styptic, has also been recommended as a hematinic.

Average dose: 0.2 c.c. (3 minims).

FERRI CHLORIDUM and LIQUOR FERRI CHLORIDI.—U.S.—These were both more fully discussed under astringents, Chapter XIII.

---

2. Cushny: "Pharmacology and Therapeutics" says: "The words organic and inorganic in connection with these preparations have no reference to the combination to which iron is attached, but to the method of attachment. Thus the acetate and albuminate of iron are both classified among the inorganic iron compounds, because they are capable of dissociation, and the iron is precipitated by ammonium sulphid. Masked iron is a preferable term for organic iron, but has not been so widely used. A large number of the proteid compounds that have been introduced in the last few years promise to be relegated to merited oblivion in the near future. The albuminate of iron and the peptonate of iron are generally prepared by the action of the chlorid on egg albumin or on peptone, and differ very considerably in the percentage of iron. These preparations are not organic iron in the sense defined above, for the iron can be split off easily, and is precipitated by sulphids almost as readily as the ordinary salts."

Probably the most widely used of the several preparations of iron, is:

Tinctura Ferri Chloridi.—U. S.—This preparation contains 35 per cent. by volume of solution of ferric chlorid and should be prepared at least three months before being used. Tincture of ferric chlorid, or tincture of iron, as it was formerly called, has long been considered one of the most efficient of the inorganic iron preparations.

Average dose: 0.5 c.c. (8 minims).

Ferri Sulphas and Ferri Sulphas Granulatus.—U. S.—These differ only in the size of the crystals; they consist of ferrous sulphate containing 7 molecules of water of crystallization. Ferrous sulphate is soluble in less than one part of water, but is insoluble in alcohol.

Average dose: 0.2 gm. (3 grains).

Ferri Sulphas Exsiccatus.—U. S.—Exsiccated ferrous sulphate is a grayish-white powder that is slowly but completely soluble in water. About 65 grams of the exsiccated preparation are equivalent to 100 grams of the granulated.

Average dose: 0.12 gm. (2 grains).

Pilulæ Aloes et Ferri.—U. S.—Each pill contains 0.07 gm. (about 1 grain) each of exsiccated ferrous sulphate, purified aloes and aromatic powder.

Average dose: 2 pills.

Pilulæ Ferri Carbonatis.—U. S.—This preparation is variously known as Blaud's pills, Griffith's pills or Vallet's pills. Each pill contains about 0.06 gm. (1 grain) of ferrous carbonate, with potassium sulphate, althea tragacanth and glycerin.

Average dose: 2 pills.

Ferri Carbonas Saccharatus.—U. S.—The saccharated carbonate of iron should contain not less than 15 per cent. of ferrous carbonate.

Average dose: 0.25 gm. (4 grains).

Massa Ferri Carbonatis.—U. S.—Mass of ferrous carbonate, better known as Vallet's mass, contains nearly 5 per cent. of ferrous carbonate.

Average dose: 0.25 gm. (4 grains).

Mistura Ferri Composita.—U. S.—Compound iron mixture, or Griffith's mixture, is much more popular in England than in this country. It contains freshly precipitated ferrous carbonate suspended in a mixture of potassium sulphate, myrrh, syrup, spirit of lavender and rose water.

Average dose: 16 c.c. (4 fluidrams).

Of the several official preparations containing ferrous carbonate the pill of ferrous carbonate, more generally known as Blaud's pill, is probably the most efficient and most satisfactory. This pill should be freshly prepared and should not contain free or unchanged ferrous sulphate or potassium carbonate. The practice that has been adopted by some manufacturers of massing these pills without allowing the chemical reaction to take place is a reprehensible one, as it is not at all probable that the necessary reaction will take place as readily in the acid medium of the stomach as it would in a test-tube or mortar.

All the preparations of ferrous carbonate have the decided advantage over the previously mentioned preparations of iron that they are not astringent and, therefore, are not likely to cause digestive disturbances.

Another preparation that is free from the objectionable feature of being astringent is:

Ferrum Reductum.—U. S.—Reduced iron occurs as a fine grayish-black lusterless powder without odor or taste. It is insoluble in water or in alcohol and, therefore, is generally directed to be dispensed in powders, capsules or pills.

Average dose: 0.05 gm. (1 grain).

SCALE SALTS OF IRON.

Ferri Citras.—U. S.—The ferric citrate occurs in thin garnet-red scales that are slowly but completely soluble in water.

Average dose: 0.25 gm. (4 grains).

Ferri et Ammonii Citras.—U. S.—Iron and ammonium citrate is much more freely soluble in water than the simple citrate, and has the added advantage that it is not likely to lose this property on keeping.

Average dose: 0.25 gm. (4 grains).

Ferri et Ammonii Tartras.—U. S.—This occurs in thin transparent scales varying in color from garnet red to reddish brown. It is freely soluble in water but insoluble in alcohol.

Average dose: 0.25 gm. (4 grains).

Ferri et Potassii Tartras.—U. S.—This is very similar in physical properties to iron and ammonium tartrate.

Average dose: 0.25 gm. (4 grains).

Ferri et Quinin Citras.—U. S.—Iron and quinin citrate contains about 11.5 per cent. of quinin and ferric citrate corresponding in amount to 13.5 per cent. of metallic iron. It is slowly but completely soluble in water.

Average dose: 0.25 gm. (4 grains).

Ferri et Quinin Citras Solubilis.—U. S.—This preparation has practically the same composition as iron and quinin citrate, but with ammonium citrate present to insure its ready and complete solubility.

Average dose: 0.25 gm. (4 grains).

Ferri et Strychnin Citras.—U. S.—Iron and strychnin citrate contains about 1 per cent. of strychnin. It is readily and completely soluble in water.

Average dose: 0.12 gm. (2 grains).

These several scale preparations of iron are comparatively free from astringent properties, are generally freely soluble in water or in aqueous liquids, do not attack the teeth, and are not obnoxious to the taste. They are preferably directed to be dispensed in aqueous solution, with or without the addition of elixir or some other flavoring admixture.

LIQUID PREPARATIONS OF IRON.

Vinum Ferri.—U. S.—This contains 4 per cent. of iron and ammonium citrate with syrup and white wine, flavored with tincture of sweet orange peel.

Average dose: 8 c.c. (2 fluidrams).

Vinum Ferri Amarum.—U. S.—This preparation contains 5 per cent. of soluble iron and quinin citrate with syrup and white wine, flavored with tincture of sweet orange peel.

Average dose: 8 c.c. (2 fluidrams).

Glyceritum Ferri, Quinin et Strychnin Phosphatum.—U. S.—The glycerite of the phosphates of iron, quinin and strychnin contains 8 per cent of the soluble ferric phosphate, 10 per cent. of quinin and 0.08 per cent. of strychnin with phosphoric acid, glycerin and water.

Average dose: 1 c.c. (15 minims).

Syrupus Ferri, Quinin et Strychnin Phosphatum.—U. S.—This syrup contains 25 per cent. of the glycerite of the phosphates of iron, quinin and strychnin in syrup.

Average dose: 4 c.c. (1 fluidram).

Elixir Ferri, Quinin et Strychnin Phosphatum.—U. S.—This popular ferruginous bitter tonic contains soluble ferric phosphate, quinin and strychnin. The average dose—4 c.c. (1 fluidram)—contains nearly 0.07 gm. (1/16 gr.) of soluble ferric phosphate, 0.035 gm. (7/12 gr.) of quinin, and 0.001 gm. (1/60 gr.) of strychnin.

Average dose: 4 c.c. (1 fluidram).

Liquor Ferri et Ammonii Acetatis.—U. S.—This solution of iron and ammonium acetate, more popularly known as Basham's mixture, contains a double salt of iron and ammonium acetate and is directed to be made by mixing 4 parts of tincture of ferric chlorid, 6 parts of diluted acetic acid, 50 parts of solution of ammonium acetate, 12 parts of aromatic elixir, 12 parts of glycerin and a sufficient quantity of water to make 100 parts. This preparation being quite dilute, is not very stable and should be freshly prepared when wanted.

Average dose: 16 c.c. (4 fluidrams).

There are two additional preparations of iron that, while they are not prescribed as hematinics, might well be mentioned in this connection.

ANTIDOTES FOR ARSENIC.

Ferri Hydroxidum.—U. S.—This is the hydrated oxid of iron of the previous Pharmacopeia and is directed to be made by precipitating 100 parts of solution of ferric sulphate with 133 parts of ammonia water that has been diluted with 1,000 parts of cold distilled water. The resulting precipitate is directed to be washed until free from soluble sulphates. This preparation is not particularly adapted for extemporaneous preparation, and, as it does not keep well, the following has been added as an efficient, extemporaneous antidote for arsenic.

FERRI HYDROXIDUM CUM MAGNESII OXIDO.—U. S.—This is directed to be made by diluting 40 parts of solution of ferric sulphate with 125 parts of water, and kept in a large well-stoppered bottle. The magnesia mixture is directed to be made by rubbing 10 parts of magnesium oxid with sufficient water to make a smooth and thin mixture, then diluting it to about 700 parts. When wanted for use the magnesium oxid mixture is to be well shaken and then gradually added to the solution of ferric sulphate and the resulting mixture again well shaken.

Average dose: Arsenical antidote, 120 c.c. (4 fluidounces).

INDICATIONS FOR IRON.

Hematinics are demanded when the amount of blood or of any of its essential constituents have been greatly reduced.

After severe hemorrhage involving the loss of less than half the blood, regeneration takes place rapidly, if the general condition of the patient is otherwise good and the food ample.

In accordance with a vast amount of clinical experience and the results obtained by many investigators medicinal iron (if we may use the term) is indicated. If the patient is able to take an abundance of food rich in iron, inorganic iron alone may suffice, but if he is unable to digest such food, then hematin and inorganic iron should both be given.

Iron has long been used in chlorosis, and experience has shown that it is more useful in those forms of anemia in which the loss of hemoglobin is greater than that of red blood cells; in other words, when the red blood cells present, whether in normal or diminished number, are individually poor in hemoglobin.

As to the form of iron to be given, of first importance is the selection of food. Reference to the table given below, selected from Bunge's Physiology,[3] will enable the physician to compute approximately the amount of food iron which the patient is receiving, and by computing the daily normal loss at 10 milligrams he can see about how much of this is left for the regeneration of hemoglobin. The figures given are for dried material, and it is to be remembered that green vegetables may lose 75 per cent. or more of their weight on drying, while fatty substances (nuts) will lose but little.

If the food contains an insufficiency of iron hematin should be added, but if the food supply is abundant one of the inorganic forms of iron will prove beneficial. In our choice of medicinal iron we must be guided by the individual case in selecting the one which causes the least disturbance of the digestion. In the absence of fever it will seldom occur that the patient can not take a selected diet containing an ample supply of iron. If the appetite and digestion are deficient stomachics are indicated.

Inorganic iron very often gives better results in the first few weeks of the administration than it does later, which may possibly be explained by its interference with the digestion—a matter to be guarded against carefully. Large doses, if they do not disturb the digestion, are often required.

Bunge distinctly warns the physician against using high-priced pharmaceutical preparations of iron and calls attention to the advantage of beef, blood sausage and blood.

While warm blood may be tolerated by some individuals, the aversion to it is frequently unconquerable and hematin seems to be equally serviceable in any case.[4]

The etiology of some of the anemias is so obscure that treatment must be mainly empirical, but we may feel reasonably certain that we shall do more harm than good if we depend on the nostrums so glowingly advertised instead of directing our efforts toward improving the appetite and digestion. The selection of a proper diet, together with proper doses of inorganic iron in most cases, or of organic and inorganic iron in comparatively few cases in which they are needed, will usually be found to be all that is required.

When iron tends to cause constipation laxatives must be employed, preferably one of the preparations of cascara sagrada, or the pills of aloes and iron, one of which may be given three times daily.

As examples of the innumerable combinations in which iron may be prescribed we give the following:

℞ Ferri sulphatis exsic. 5i 4
Extracti nucis vom.
Extracti rhamni pursh. ää . . . . . gr. xv 1
M. Ft. pil. No. lx. Sig.: One pill half an hour after meals.

Reduced iron or ferric citrate, may be substituted for the dried ferrous sulphate, and a slightly larger amount of aloes (20 grains—1.3 gm.) can be used in place of the extract of cascara sagrada. Clinical experience seems to show that a formula of this kind is not so useful in those conditions in which there is a deficiency of hydrochloric acid in the gastric secretions; in such cases small doses, from half to one teaspoonful, of the solution of iron and ammonium acetate may be given, after meals. This preparation rarely gives rise to constipation or other symptoms of indigestion.

The pills of ferrous carbonate, Blaud's pills, may be given either alone or the mass of ferrous carbonate, which is practically identical, may be used in combination with such a laxative as the extract of cascara sagrada, in the dose mentioned above. If desirable a bitter substance such as the extract of nux vomica may also be included as follows:

℞ Massa ferri carbonatis 5ii 8
Extracti nucis vom.
Extracti rhamni pursh. ää . . . . . gr. xv 1
M. Ft. pil No. lx. Sig.: One pill half an hour after eating.

Other bitter extracts, or other bitter substances, such as quinin or strychnin, and other laxatives may be substituted for those given above. A representative formula for a pill of this general composition would be as follows:

℞ Ferri reducti
Quininæ sulphatis
Aloe purificat. ää . . . . . gr. xlv 3
Strychninæ sulph. . . . . gr. i 06
Ext. gentian q. s. Ft. mass et dividenda in pil. No. lx. Sig.: One pill three times a day, after eating.

While it is true that the salts of the alkaloids might better be substituted by the alkaloids themselves, the amount of acid present is so small that it is really of very little moment.

In this same connection it might be pointed out that the dried ferrous sulphate or the ferric citrate may be substituted for the reduced iron, or, by omitting the extract of gentian, the mixture may be directed to be dispensed as a powder in capsules.

The tincture of ferric chlorid is best given well diluted with water, a glass tube being used to prevent the corrosive action of the acid on the teeth, and the mouth should then be well rinsed with water, or a dilute solution of an alkali such as lime water.

The scale salts of iron, being, generally, combinations with organic acids, are much less corrosive than the chlorid, or either of the sulphates, and may frequently be used with advantage in their stead. A representative formula for a simple solution of this kind would be as follows:

℞ Ferri et ammonii citratis 5i 4
Aquæ dest. . . . . fld. 3xii 50
Elixir q. s. ad . . . . . fld. 3iii 100
M. Sig.: One teaspoonful three times a day, before eating.

Any one of the soluble scale salts of iron can be substituted for the iron and ammonium citrate, and one of the aromatic waters can be used in place of the distilled water, or of the water and the elixir.

The bitter wine of iron, given a few minutes before meals, is an excellent ferruginous stimulant of the appetite and digestion which women will usually find acceptable.

3. The following table, taken from Bunge's Physiology, gives the iron content in milligrams per 100 grams of the dried substance. Such substances as grapes will evidently yield but little iron, since they consist mainly of water.

Sugar	0.0	Cabbage (dark green leaves)	17.0-30.0
White of egg	0.0		
Rice	1.0-2.5	Almonds (blanched)	4.9
Barley (hulled)	1.4-4.5	Almonds (whole)	9.5
Barley (whole)	4.5	Grapes (Malaga)	5.6
Oranges	1.5	Potatoes	6.4
White bread (wheat)	1.5	Peas	6.2-6.6
Apples	1.9	Beans (white)	8.3
Cow's milk	2.3	Carrots	8.6
Human milk	2.3-3.1	Dandelion leaves (used as salad)	14.3
Figs	3.7-4.0	Beef	16.9
Hazel nuts (blanched)	4.3	Asparagus	20.0
Hazel nuts (whole)	12.7	Yolk of egg	10.0-24.9
Rye	3.7-4.9	Spinach	33.0-39.0
Cabbage (etiolated)	4.5	Blood of swine	226.0
Cabbage (light green leaves)	5.6		

4. A practical method for the economic preparation of a hematin product was described by Torald Sollmann, in the Am. Jour. of Pharm., June, 1902, p. 275.

Clinical Notes, New Instruments, Etc.

A PROTOZOÖN GENERAL INFECTION PRODUCING PSEUDOTUBERCLES IN THE LUNGS AND FOCAL NECROSES IN THE LIVER, SPLEEN AND LYMPHNODES.

SAMUEL T. DARLING, M.D.
Pathologist, Ancon Hospital.
ANCON, CANAL ZONE, ISTHMUS OF PANAMA.

On Dec. 7 1905, while examining smears from the lungs, spleen and bone marrow in a case that appeared to be miliary tuberculosis of the lungs, I found enormous numbers of small bodies generally oval or round. Most of them were intracellular in alveolar epithelial cells, while others appeared to be free in the plasma of the spleen and rib marrow. Tubercle bacilli were absent. The following is an account of the case:

Patient.—C. D., negro from Martinique, aged 27, occupation carpenter; address, Paraiso, a village in the Canal Zone.

History.—The patient had been a resident of the zone three months. While in Martinique he had suffered from some mental disturbance. His present illness dates from Sept. 15, 1905, when he complained of fever and vomiting.

Condition on Admission to Hospital.—On entering Ancon Hospital Dec. 5, 1905, he was mildly delirious and incoherent. Lungs were clear; abdomen was scaphoid; spleen was enlarged.

Blood: Negative for malarial parasites, leucocytosis, 2200. Hemoglobin: 60 per cent. (Dare's).

Feces: Negative.

Temperature: On admission, Dec. 5, 12:30 p. m., 101, pulse 120; Dec. 6, 8 a. m., 95, pulse 96; 4 p. m., 98, pulse 100.

The patient died Dec. 6 at 11:30 p. m.

AUTOPSY.

December 7, 8:30 a. m.

Macroscopic and Microscopic Examination.—Body of negro, moderately emaciated; length, 5 feet 8¾ inches; inter nipple distance, 7 3 16 inches; rigor mortis was plus.

The odor on opening thorax was suggestive of pulmonary tuberculosis. The right and left pleuræ were free. There were numerous red blotches (ecchymoses) beneath the visceral pleura of both lungs 8 mm. in diameter. Many small nodules could be felt under the visceral pleura.

The lungs on section were found studded with pale gray hyaline miliary tubercles from 2 to 3 mm. in diameter. The lungs were heavier and more voluminous than normal. The tubercles were not as closely packed or so numerous as is often found in miliary tuberculosis, and the general color of the lungs was bright red.

The peribronchial lymphnodes contained a few small soft recently caseated tubercles. The nodes were enlarged and pigmented.

Heart: This organ was small and normal.

Liver: The liver was enlarged and pale, and there was slight atrophic cirrhosis.

Spleen: This was enlarged to three times the normal in size; the pulp was very firm. The malpighian bodies were distinct. Here and there were a number of small yellow nodules resembling tubercles.

Kidneys: There were a few depressions in a cortex diminished to 8 mm. in depth.

Pancreas: Normal.

Bladder: Normal.

Rib bone marrow: Normal and dry.

Brain: The pia-arachnoid was slightly edematous and more generally adherent to the cortex than normal. The calvarium was very thick.

Intestines: Several specimens of *Tricocephalus dispar* were found in the cecum. There were a few small superficial circular ulcers from 2 to 4 mm. in diameter in the cecum and ileum.

The mesenteric lymphnodes and those at the hilum of spleen were enlarged and pale.

Bacteriologic Examination.—Spleen smears were negative for malarial parasites or pigment. Oval and round bodies were free in the plasma.

In rib bone marrow smears there were traces of intracellular malarial pigment. A number of bodies similar to those in the spleen were seen.

In lung smears tubercle bacilli were absent.

There were myriads of intracellular and extracellular bodies similar to those found in the spleen and the marrow.

A moist coverslip preparation from intestinal ulcers showed motile amebæ.

Anatomic Diagnosis.—Acute miliary tuberculosis, pulmonary type. Tuberculous lymphadenitis, peribronchial. Chronic interstitial splenitis. Atrophic cirrhosis. Chronic interstitial nephritis, slight. Lymphadenitis, mesenteric. Chronic leptomeningitis. Edema of pia-arachnoid. Ulcerative enterocolitis. Amebiasis. General infection by protozoön.

APPEARANCE OF THE PARASITE IN SMEARS.

Lung: This specimen was stained by carbolfuchsin and Gabbet's methylen blue, overstained with polychrome methylen blue, and washed with eosin.

The polychrome blue was prepared as follows:

Methylen blue, pure medic. Grüb.....g.	1.
Sodium carbonate, pure.....g.	.5
Distilled water .....g.	100.

This was placed in thermostat one week, and kept at room temperature for six months.

The excess of blue was removed by washing the smear alternately with alcoholic solution of eosin (.5 per cent in 60 per cent. ethyl alcohol) one second and distilled water a few seconds, until the internal structure of the parasite showed plainly.

The parasite is oviform or round, and is surrounded by a clear refractile non-staining rim, in thickness about 1 6 the diameter of the parasite. This refractile rim is present in all smears, whether previously treated with acid blue or not. The structure is not homogeneous, but consists of a faintly staining substance and a deeply staining one: a clear space or spaces; and chromatin granules. The chromatin granules are generally single, sometimes two or more are counted. One large parasite appeared to have six such dots of chromatin. The granules are often situated in a clear non-staining zone at one side of the darker staining substance: at other times they are situated on the margin or within this substance; and also frequently appearing in the clear refractile capsule. The chromatin granules are generally dot shaped, very rarely elongated. Occasionally two chromatin dots placed together simulated a rod form.

The clear space or spaces resemble vacuoles: at times they resemble the clear non-staining spaces seen in filaria embryos and trypanosomes. The staining substance almost entirely fills the capsule or refractile rim of the parasite. The circular contour of the staining substance is at times broken on one side or place by the clear non-staining zone.

This zone varies in shape, size, and in its relation to the staining substance: being circular, oval, or irregular in form; being three-fourths the size of the entire parasite, or at times barely perceptible on account of its minuteness; being centrally located or excentric; and being single or multiple—two or three.

In size the parasites are from 1 to 4 microns through their greatest diameter; commonly this diameter is 3 microns.

The parasite appears to divide by fission into two equal or unequal elements. One parasite appeared to be dividing into four equal elements. Several parasites with chromatin dots scattered through their substance appeared as pre-segmenting bodies—ready to divide into five or six elements. Occasionally a smaller parasite may be seen close beside a larger one, as though separating from it, the smaller one being about 1 micron in diameter.

Although oval or round in outline, the staining substance,

together with the clear non-staining zone and chromatin granules, give a varying picture, depending on the point of view. Forms suggesting the appearance of familiar objects, such as the eye, a shield, a conch shell, a bullet, or a shuttle are seen. The resemblance of certain parasites to a mammalian embryo in "fetal attitude" is very striking.

In the lung smears the parasite is apparently always intracellular, and the cells contain from 10 to 100 or more parasites. The appearance of free parasites is probably due to the squeezing and breaking up of infected epithelial cells by pressure in making the smear. One unbroken alveolar epithelial cell occupied one-third the diameter of the field. 1/12 oil im. No. 1 oc. B. & L. Parasites had invaded the cell nucleus as well as the cytoplasm, and it was estimated that this cell contained more than 300!

Spleen and rib marrow smears showed fewer parasites, two or three to a field, and they appeared to be extracellular. The

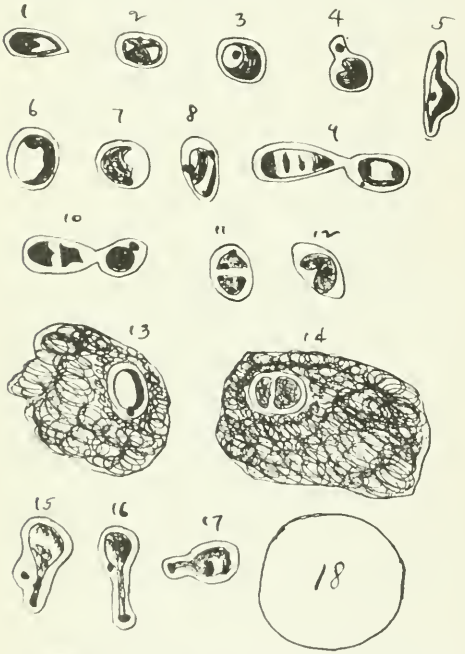


Fig. 1. (× 2000), 1 to 8, forms of parasite; 9, 10, 11, 12 manner of subdivision; 13, 14, parasites within nuclei of spleen cells; 15, 16, 17, flagellate forms; 18, alveolar epithelial cell containing parasites.

nucleus of a spleen or marrow cell appeared now and then to have been invaded. Each parasite had a definite refractile rim, as in the lung smears, and its internal structure could be well made out.

Red blood corpuscles were never invaded.

Three flagellated forms were seen in a lung smear. The distal extremity of one of the flagella contained a rod of chromatin placed at right angles to the flagellum, simulating the relation of centrosome to chromatin filament in *Trypanosoma Lewisi*. The flagella were single, short and thick, without chromatin filaments, and were enclosed by the refractile capsule, continuous with that of the body of the parasite.

EXAMINATION OF SECTIONS.

Sections were fixed in Zenker's solution and stained by eosin and hematoxylin, Van Gieson's method and polychrome-methylen blue.

Lung: The alveolar capillaries are tortuous and engorged with red blood corpuscles. In places the walls are broken down, stretched, or greatly distended. No leucocytes were seen within the capillaries. The epithelial cells of the alveolar walls are desquamating or completely shed. In places there appears to be merely a single layer of endothelial cells separating the circulating blood from the alveolar contents. The alveoli are seen to be filled with red blood corpuscles, generally having a washed out appearance; red blood corpuscles and serum; or red blood corpuscles, serum, and large swollen alveolar epithelial cells containing many parasites.

Polymorphonuclear leucocytes are rarely observed in the alveolar contents; a few mononuclear elements are noted. There are no tubercles. The pseudo tubercular areas are made up of alveoli with broken, distorted, or collapsed walls, containing many alveolar epithelial cells distended by parasites. Small vessels or capillaries are seen to pass through the pseudotubercles, but there are no evidences of the hemorrhages seen in other alveoli. Within these areas there are enormous numbers of parasites generally contained within epithelial cells—rarely free. The nuclei of invaded cells stain well, though often more faintly than normal. The cytoplasm of badly infected cells is wanting, and there are numerous distended epithelial cells devoid of cytoplasm and parasites. The infected cells have a distinctly staining rim of cytoplasm, even when their nucleus and cytoplasm are gone.

Liver: There are numerous faintly staining areas ranging in size from that of a single glandular epithelial cell to those one-third the size of a lobule; in which the liver cells and endothelial cells of the portal capillaries are completely transformed by invading parasites. In the larger areas the cytoplasm and nuclei of the invaded cells have disappeared or do not stain. There is a mass of débris, imbedded in which are myriads of parasites. In places the liver cells are normal, in others they have suffered cloudy change. In these latter localities there appears to be a stasis of blood in the portal capillaries due to occlusion of capillaries by enormously distended endothelial cells filled with parasites. The red blood corpuscles are here "washed out."

There is a distinct primary invasion of liver cells in places, although oftener it would seem that many liver cells become invaded after they have had their nutrition cut off by infected overlying endothelial cells.

Around the portal spaces the connective tissue is increased in amount and there is a recent round cell infiltration. The bile capillaries and their epithelium are normal.

Spleen: The splenic spaces are greatly engorged with red blood corpuscles. The connective tissue is moderately increased, its cells are swollen, cloudy, and at times contain parasites. There is cloudy swelling of cells in small areas here and there, and many of these cells contain parasites. There are also numerous free parasites.

Lymphnode from hilum of spleen: The cortical follicles and medullary cords of the dense lymphoid tissue are, with the few exceptions noted, below normal. The capsule and reticulum throughout the node are the seat of degenerative changes. The reticulum of the loose lymphoid tissue encloses many large mononuclear cells possessed of distinctly staining nuclei, and containing many parasites.

There are two cortical follicles, and portions of a medullary cord which have undergone cloudy swelling and necrosis, amid the débris of which are cells containing parasites. The margins of these areas show beginning degenerative changes; many fragmented nuclei are seen, as well as mononuclear cells distended by parasites.

Peribronchial Lymphnode: This node contains several old fibro-caseous tubercles, and one giant cell. The reticulum and capsule of the node are greatly thickened in places. A lymph vessel beneath the capsule contains mononuclear cells infected by parasites.

There is seen to be a general infection by a parasite having a predilection for endothelial and epithelial cells.

The lesions are those of scattered focal necroses of liver, spleen and lymphnodes, with foci of catarrhal pneumonia and hemorrhages in the lungs, in which the lungs play a very passive part, there being absolutely no leucocytic infiltration of the miliary pneumonic nodules.

The infection was a fatal one, there being no other

lesions sufficiently grave to have caused death. The anatomic diagnosis of tuberculosis not being confirmed on examination of sections, save in peribronchial lymph-nodes.

The parasite, as studied from smears, presents certain resemblances to those found by Leishman, Donovan, Marchand, Ledingham and Wright, but the differences are so marked and the lesions so unusual that I feel the case is a unique one.[1]

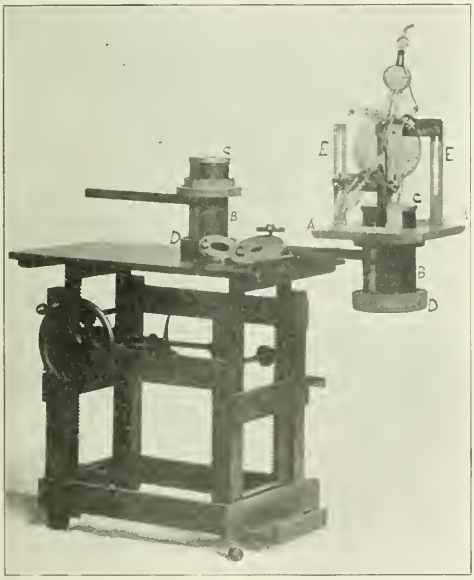
For the parasite the name *Histoplasma capsulata* is proposed.

I wish to thank Acting Chief Sanitary Officer Dr. H. R. Carter for his kind permission to publish this report.

A MODIFICATION OF GOCHT'S COMPRESSION DIAPHRAGM.*

MAX REICHMANN, M.D.
CHICAGO.

Shortly after he had presented his first paper on *x*-rays to the physiomedical society at Würzburg, Roentgen found that *x*-rays do not emanate from the platinum of the anti-cathode only, but also from the walls of the glass tube, from the air which the rays penetrate, in fact that they fill every space in the room in which the Roentgen tube is operating. These secondary rays, as they are called, or diffused rays, as they should be called, affect the sensitized plate, and the blurred and flat negatives which we so often see must be ascribed to these unwelcome secondary rays.



Modified compression diaphragm.

Roentgen himself recommended lead diaphragms to be put between tube and body to annihilate the effect of the secondary rays, and an American investigator, Charles Finley Easton, was the first (1896) to cover his tubes with a lead shell into which a changeable opening was made. Rumpel, in Hamburg, covers the body with thick lead plates, except the region which is to be Roentgenographed. Walter, in Hamburg, constructed a box made of lead, Levy in Berlin, Gocht in Halle, and many others have made original and valuable inventions in this field, but no one was so successful as Albers-Schönberg, in Hamburg, who constructed an apparatus which enabled him to exclude the secondary rays almost completely, and at the same time to reduce the thickness of the body as much as the patient could endure.

Unfortunately, this compression diaphragm of Albers-Schönberg is a very complicated mechanism, besides being so high in price that only a few operators are able to add it to their Roentgen instrumentarium.

Gocht has endeavored to simplify the apparatus, but his arrangement has added greatly to the weight of the instrument so that it is unhandy. I have taken up Gocht's idea and devised an apparatus (see illustration) as follows: A heavy board (A), covered on both sides with lead sheet, has in the center an opening in which two brass cylinders (B), lined inside with lead foil and of the same dimensions as the original Albers-Schönberg tubes, can be tightly inserted. The upper aperture of the cylinder is covered with lead diaphragms (C) of different sizes, while the rim of the lower aperture is covered with a heavy rubber ring (D). On the wooden board are two uprights (E), erected at such a distance from each other that a seven-inch tube can be supported so that the focus of the platinum target falls exactly in a vertical line drawn through the middle of the cylinder, and thus only the most effective rays are allowed to penetrate the body.

As I am working only with seven-inch tubes I had these uprights made steady. Of course, they can be made sliding so that a tube of any size can be used. If an operator is very anxious to avoid any evil effect on his own body these uprights can be connected with lead glass, but I think this is unnecessary.

The whole apparatus is firmly attached to an ordinary camera table, which, by a system of cog wheels, can be raised and lowered at will. As the table runs on castors, which can be arrested by a small lever-break, the whole apparatus can be easily transported to any part of the room. At the same time it can be made stable while in use. The apparatus combines cheapness with effectiveness.

406 Schiller Building.

CASE OF CHRONIC SUPPURATIVE ETHMOIDITIS, SARCOMA OF RIGHT TEMPORO-SPHENOIDAL LOBE, WITH MISLEADING SYMPTOMS.*

J. A. STUCKY, M.D.
LEXINGTON, KY.

On account of the extensive and serious pathologic condition, involving vital structures and very confusing and misleading symptoms, the following case is considered of sufficient interest for discussion:

Patient.—On Dec. 7, 1905, J. J. H., aged 51, was brought to me by Dr. E. V. Seay, of Salvisa, Ky., with the following history: He had been troubled for many years with nasal catarrh; at times large quantities of pus would discharge from nose, and this would be followed by great relief for some days or weeks. Six months previously he had a prolonged attack of malarial fever. Two weeks ago he began suffering excruciating pains in frontal region between the eyes, pain being aggravated by jarring the bed or when in a stooping position. He suffered greatly from nausea, mental depression and insomnia.

Examination.—His gait was unsteady, inclining to the right as he walked across the room. Skin was of muddy, septic appearance; right eye protruding and moved sluggishly. Very slight pressure or tapping over frontal sinus or at inner canthus gave rise to acute pain. The right nares was filled with mass of bluish red granulations, through which pus exuded. There was no evidence of the middle turbinates. The left nares

1. Since writing this article I have found the parasite in a second case.

* Presented at a meeting of the Chicago Surgical Society.

* Read before the Eastern Section American Laryngological, Rhinological and Otological Society at Syracuse, N. Y.

was much congested, but otherwise normal. Transillumination of the maxillary and frontal sinus was positive on right side. Ophthalmoscopic examination showed nothing abnormal in the fundus. The pulse was slow and full; articulation difficult and mind sluggish. He insisted that nothing was wrong but right side of his head. The tongue was heavily coated and breath foul. Blood count showed leucocytes of 19,000.

Diagnosis.—He was sent to the hospital and Drs. G. P. Sprague, F. H. Clarke and J. Estell saw him in consultation. All agreed on diagnosis of chronic suppurative sinusitis, with probable meningeal involvement of right temporofrontal base in purulent inflammation. The apparent aphasia at that time was thought to be due to stupor.

Course of Disease.—The urine was scant, loaded with indican and contained some albumin. A large dose of calomel and salol was given, followed by castor oil ℥j and salts ℥ss in six and eight hours alternately. He had a good night's sleep after taking 15 gr. each of salicylate and bromid of strontium. Patient was purged freely. Nasal irrigation followed by application of adrenalin solution gave some relief to pain, and breakfast was eaten with apparent relish. Two hours after eating he complained of increased pain, yawning and gaping constantly while awake. There was distinct aphasia—he is right-handed—with very frequent slight convulsions of the right hand and arm, and tongue deviates to the right. Constant pain is referred entirely to the right fronto-orbital region. A brain tumor of the left side was thought probable by one of the consultants. Late in the afternoon of December 8 symptoms of brain pressure came on. There was deep stupor and more bulging of the right eye. After consultation it was decided to operate at once.

Operation.—Patient was etherized without difficulty or excitement, pulse and respiration being improved by the anesthetic. I made the usual incision for entering the frontal sinus after Killian's method. The sinus was found free from granulations or pus, but the lining membrane was greatly thickened and congested and of a very dark bluish color. The naso-frontal duct was completely blocked by firm granulations, which, when removed, showed a completely degenerated ethmoid, having the appearance of polypoid degeneration so frequently seen. The whole of this was removed with curette and forceps. The maxillary sinus was found to be blocked by firm tissue, which I supposed to be polypi and granulations. To facilitate the removal of this, the sinus was entered through the canine fossa, and very offensive pus and firm granular tissue removed, which had the appearance of sarcoma. The nasal wall and floor of the orbit was involved in the process of necrosis. After completely cleaning out as far as possible all pathologic tissue and thoroughly cleaning the parts, the usual gauze packing and dressing was applied and patient put to bed in good condition. Duration of operation was one hour and twenty minutes. One hour after the operation patient was conscious, with normal temperature and pulse.

At 8 a. m. the following morning, ten and a half hours after the operation, pulse and temperature were normal, mind was clear, there was no pain, and no hesitancy in speech. Patient censured me for not operating on him sooner. He was thirsty and hungry, and there being no nausea a cup of coffee and a slice of toast were given, which he ate with a relish. These symptoms continued until 9:45 p. m. (twenty four hours after the operation) when alternate stupor and restlessness came on, followed by yawning and grinding of teeth, and extreme restlessness. This condition increased until his death, thirty-one hours after the operation. There was no return of intense pain and no complete loss of consciousness, notwithstanding the deep stupor until a few moments before his death, which came without a tremor.

Autopsy.—Four hours after death the autopsy was held by Dr. Julian Estell in the presence of Dr. Sprague and myself, and the report of the latter from a neurologic and the former from a pathologic standpoint is given.

DR. SPRAGUE'S REPORT.

"I saw Mr. J. J. H. at the Good Samaritan Hospital December 8, at 11:30 a. m. At that time he was very feeble, the skin was sallow, mouth and eyes were dry, and tongue covered with a dense, dry brown coat. His pulse was 55 and respiration 15. The pupils were equal, moderately contracted, and reacted slowly to light and accommodation. Because of his weakened condition, his other reflexes were not tested. His mind was very sluggish, and he would lapse into unconsciousness while answering questions, but he complained of very severe pain under the right eye, and of severe but vaguely outlined pain over right frontal region. He insisted that he had no pain elsewhere, but was too nearly stuporous to discuss his condition further. There were no focal symptoms, although a slurred articulation and the occasional loss of a word suggested aphasia more than stupor.

He was operated on that night and I saw him again at noon December 9, at which time he was rather less dull than before the operation, but gave such irrelevant answers to questions that no statements could be gotten from him. His tongue, at the time, deviated to the right, and the right hand and arm were slightly convulsed every minute or less. He located the pain as before, but said it was less severe. His articulation was more impaired, and the aphasia, deviation of the tongue, and tremor of the right arm suggested disease in the third frontal and anterior central convolutions of the left side.

"At the autopsy, four hours after his death, December 11, part of the third frontal convolution and the lower part of the anterior central convolution of the right side were discolored from light red to nearly black from hemorrhages. A very small part of the region mentioned appeared normal, but most of it was more dense than normal. On section it gave the impression of being fibrous. The ventricular fluid was slightly in excess of normal, and of a clear, blood-tinged color. There was no involvement posterior to or below the fissures, and no disease as far as could be determined by naked eye examination in any other part of the brain. His son stated that he was right-handed."

DR. ESTELL'S REPORT.

"Skull cap was removed. Right temporosphenoidal lobe of brain was adherent to floor of middle fossa. Slight adhesions along vertex of longitudinal fissure extending about two inches in front and behind fissure of Rolando and down about one inch over cortex. Whole of right temporosphenoidal lobe of a red gray mottled color and meninges adherent over base of the lobe.

On section the lobe seemed entirely replaced by an encapsulated mottled red and gray mass of semisolid, pasty consistency. Closer inspection showed trabeculæ of firmer fibrous like bands running through the mass with soft pasty, dark red gummy material in the spaces, giving an alveolar structure to the mass. The tumor gave the gross appearance of an 'infected sarcoma.' Tumor was examined microscopically and proved to be sarcoma, both small round and small spindle cells being found. The whole tumor was far advanced in process of degeneration, and showed evidence both of inflammatory infiltration and necrosis, the indication being that the infection had extended from the nasal accessory sinuses."

I have reported this case as briefly as possible without omitting important detail, although every hour the patient was under my care was filled with more or less interesting and peculiar symptoms. From the time I saw him until within four hours of his death, the temperature, pulse and respiration were recorded every three hours. The temperature varied from 96 to 98 F., pulse 56 to 68, respirations 15 to 19. Four hours before he died the temperature rose to 103, pulse 120, respirations 21.

Some of the most interesting points to me, and those selected for discussion, are (1) relation of cause and effect—was the cerebral condition the result of sinus condition or *vice versa*? (2) The confusing and misleading symptoms indicating pressure in left side of the brain. (3) Could general intracranial pressure exist without producing a motor symptom referable to right-sided pressure. (4) What would have been the probable result if the sinus disease had been eradicated months before?

DOUBLE EMBOLIC GANGRENE OF THE LOWER EXTREMITIES AS A COMPLICATION OF PNEUMONIA.

FRED F. ATTIX, M.D.
LEWISTON, MONT.

Patient.—A. J., aged 56, male, medium height, weight and figure.

History.—The patient has always used alcoholic beverages in moderation. The present illness began Jan. 20, 1906. Twelve days previously, he developed what he thought to be a cold; he used domestic remedies, but was not careful to avoid needless exposure. This state of affairs lasted for ten days. On the eleventh day he sent word that he could not leave his bed and a physician was summoned.

Examination.—Auscultation and the physical signs showed that there was pneumonia in the right lower lobe which was approaching resolution. The temperature was 103, pulse 160, and respiration 60. There was cyanosis and the lower extremities were cold.

Consultation.—On the following day I was called in consultation. At that time there was mental apathy and moderate effort was necessary to rouse the patient who then showed mild delirium. The pupils were moderately contracted and equal; the tongue was red, dry and fissured. Rectal temperature was 102.5, respiration varied from 46 to 50, and the pulse was 146, regular, of medium volume and with no signs of arterial sclerosis.

The area of cardiac dullness was normal, with moderate strength of heart muscle and no signs of endocarditis or of pericarditis. The lower lobe of the right lung was in the stage of resolution. There was moderate orthopnea. The urine was voided in large quantities on an average of every hour and the feces passed once daily.

During the night before I saw him the patient had suddenly developed pain in the right thigh, which was still present when I examined him. Tenderness and hyperesthesia were also present. There was a perceptible swelling about the center of Scarpa's triangle on the right side, and on palpation an indurated mass could be detected, below which there was no femoral pulse. Complete anesthesia of the skin was present to a point 2 inches above the knee, where the skin was hyperesthetic and cyanotic. The skin of the leg was very dry, cold and clammy, with a tendency to ulceration over the ridge of the tibial bone. The left leg was in much the same condition, although the embolus had lodged in the lower portion of the popliteal space on this side.

Termination of the Disease.—The toxemia developed and the patient died 14 hours later.

Autopsy.—A partial autopsy was made forty-eight hours after death by Dr. Tice, who made the following report: "At the profundal branch of the femoral artery an embolus had lodged and extended for one-half inch down the profundal branch and one inch down the main artery. Below this point the artery was patulous. Above (as far as opened to Pouparts' ligament) the artery was filled with loose clotted blood. No further autopsy was allowed." No bacteriologic examination has been made of the emboli at this time to determine if they were infected.

CONGENITAL SARCOMA OF THE ORBIT.

G. BETTON MASSEY, M.D.
Attending Surgeon American Oncologic Hospital.
PHILADELPHIA.

The clinical report of a sarcoma in a child of 3 years, contributed to THE JOURNAL, March 3, 1906, by Dr. Spearman, of Whiting, Iowa, recalls a still more youthful case under my care at the Oncologic Hospital last summer. In this case the growth was strictly congenital, having been noticed at birth.

Patient.—Helen K., aged 6 weeks, was admitted to the hospital from Tyrone, Pa., July 3, 1905.

History.—Her parents were healthy and there was no history of malignant disease in the family. At birth a tumor the size of the tip of the little finger projected from the edge of the right upper eyelid. Two days after birth the tumor was removed by the attending physician, but recurrence immediately took place, and when the baby was admitted to the hospital six weeks after birth a tumor the size of a golf ball projected from the orbit, the eye being pressed downward and inward. The origin of the growth seemed from the history to have been in the middle structures of the eyelid, though conditions on admission showed that the whole orbit was infiltrated.

The general health of the little patient being apparently good, save for abnormal restlessness, it was decided to attempt a cataphoric destruction of the growth by a major operation of mercuric cataphoresis. The passage of a sufficient current through the head to accomplish this result was of course out of the question; hence it was necessary to confine the circuit to the growth itself by placing both poles within its substance.

Operation.—On July 5 the baby was placed under chloroform, a pointed electrode connected to the negative pole of the apparatus was pressed against the center of the tumor, and six fine zinc points coated with mercury and attached to the positive pole of the apparatus were inserted around the periphery of the tumor (which practically corresponded to the walls of the orbital cavity). With the electrodes thus placed a current of 350 milliamperes was gradually turned on and maintained for sixty-five minutes. The cataphoric destruction of the diseased eyeball was aimed at, as well as destruction of the tumor and sterilization of its edges. These purposes were apparently accomplished in the time mentioned, with no disturbance of the pulse and respiration and no loss of blood.

Subsequent History.—The baby was less fretful the following day than before the operation, and when recovered from the anesthetic nursed regularly. The slough came away July 18, including the eye-ball, though the devitalized optic nerve had to be clipped with scissors; this was done while the patient remained in a natural sleep in the nurse's arms. It was nevertheless seen that some disease remained higher up within the orbit, and, more significant of the futility of attempts at eradication, a metastatic tumor developed about this time in the cheek beneath the eye. A second major application of bipolar cataphoresis was made to both spots July 20, under chloroform, 160 milliamperes being used for twenty-five minutes.

In spite of the apparently vigorous growth of the little patient evidences of metastasis increased, a tumor developing beneath the jaw. An extension to the brain was later indicated by the occurrence of convulsions and coma, death supervening Aug. 30. A specimen of the tumor removed prior to the first application showed the growth to be a round-celled sarcoma.

1831 Chestnut Street.

Examination of Heart of Rameses II.—The French have recently purchased for the museum in the Louvre four urns containing the viscera of the king Rameses II of Egypt, the Sesostris of the Greeks. He died 1,254 years before the Christian era and his mummy has thus been embalmed for 3,164 years. The *Semaine Med.* states that Lortet and Renaut examined the urns. Nothing was found in the urns supposed to contain the stomach, intestines and liver except strips of linen and resinous substances, with a quantity of indeterminate dust. But in the urn supposed to contain the heart, the viscus was found in comparatively good condition. It had become flattened, forming an oval plaque about 4 cm. wide by 8 long, extremely hard and horny. It had to be sawed to obtain sections for examination. Thin slices could then be shaved off with a razor. Under the microscope these sections showed the arrangement of the muscle fibers characteristic of the heart. The anatomic texture of the organ was thus preserved by the embalming process.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue .... Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price ..... Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, APRIL 28, 1906.

HEALTH OR DISEASE IN SAN FRANCISCO.

Not the least important among the problems the citizens of San Francisco are facing is the prevention of infectious disease. In catastrophes such as the one which has overtaken the great city of the Pacific coast, two factors are especially active in increasing the prevalence of diseases of germ origin. These are: First, the close physical association, even involving personal contact, into which a very large proportion of the population are forced, and, second, the diminished powers of resistance due to hunger, thirst, exposure, fatigue, and all the other accompaniments of the situation. The men, women and children exposed to infection become, so to speak, more inflammable at the same time that the opportunities for exposure are enormously multiplied. It needs no ghost to come from the grave to tell us of the danger. A difficult task lies before those on whom falls the responsibility for maintaining the public health in the present crisis.

Respect of property is being enforced in San Francisco with military rigor, and the method of shooting down petty marauders at the start had a wholesome effect on the baser sort, but the lives as well as the property of the decent citizens are at stake, and the need of decisive action is as urgent in the one case as in the other. There is no time for "barking up the wrong tree." The disposal of kitchen refuse should at present cause no particular concern. Disease does not "breed" in piles of garbage, however offensive the stuff may be to the senses. We are reading in the newspaper dispatches that "the miasma from putrefying corpses" is fast becoming a "menace" to the health of the city, but, while it is well to act as though this were actually true, it must be remembered that the emanations from decomposing animal matter, horrible though they are, have no power to cause typhoid fever or smallpox or any other infectious disease.

It is clear that the recognition and isolation of cases of infectious disease is of the first importance. The living human being is the culture medium in which disease germs thrive and from which they are transmitted to new centers. It is essential to detect the existence of infection as early as possible and then to enforce a quarantine with a promptness and thoroughness that leave nothing to be desired by the most exacting martinet. Halting and half-hearted measures have no place in San Francisco just now.

Besides the search for and supervision of diseased individuals, the authorities will doubtless watch carefully the disposal of all the excretions from the human body. It is now well known that some apparently normal persons may harbor pathogenic micro-organisms and may be the means of spreading disease just as widely as those who are frankly infected. The "chronic carriers of typhoid bacilli" several times referred to recently in THE JOURNAL[1] are an instance of this sort. No mistake will be made in assuming that the discharges from the bowels and bladders of seemingly healthy persons contain possibilities of mischief and in treating them as potentially infectious. Sources of drinking water will, of course, be carefully protected and all dubious supplies remorselessly cut off. The rôle played by the common drinking cup in promoting the spread of diphtheria and other infections will doubtless be kept in mind. The influence of the daily press, always great at a time like this, has already been brought to bear with good advantage in educating the public in an unhysterical fashion to the especial dangers of the situation. It would be a great triumph for the cause of preventive medicine in the United States if the San Francisco tragedy were allowed to go no further. Pestilence must not be permitted to claim more victims than the earthquake itself.

THE CALIFORNIA HORROR—AN APPEAL.

It is unnecessary to enlarge on what has already appeared in the public press relative to the conditions in California, especially in San Francisco, and to the need of help. The money and the necessaries of life sent by the nation at large for the general relief of all who were suffering is probably ample for the time being; but many thousands who were in good circumstances are now penniless, consequently without means to resume their occupations. This is true of many of the physicians who have lost not only their homes and all contained therein, but also their offices, libraries, instruments, etc., leaving them without the means to resume practice. The condition of many is undoubtedly desperate. There has never been a time when our profession could show its regard for its professional brethren in distress better than now. The Board of Trustees of the American Medical Association has authorized that THE JOURNAL's columns be opened for the acceptance of subscriptions for the California physicians.

An appeal is, therefore, made to the profession throughout the land so that each one may have an opportunity of contributing something directly to help his professional brethren who have been so unfortunate in this terrible calamity. In many localities the county society will take up this matter; in such cases some will send their contributions direct to San Francisco; others may find it more convenient to send through the American Medical Association fund. In the latter case we

1. THE JOURNAL, Feb. 3, 1906, p. 365; March 10, 1906, p. 759.

all be glad to print the total amount contributed by ch a society, together with the amount given by each dividual member.

It has been impossible thus far to get sufficiently in uch with physicians in San Francisco to make definite rangements in regard to the distribution of the fund, t it is presumed that the officers of the Medical ociety of the State of California and of the San rancisco County Medical Society will jointly create a mmittee to look after the matter. We hope that every ember of the profession will do something in this hour need. A list of the amounts already received will be und on page 1297.

LIMITS OF HUMAN ENDURANCE.

Physicians as well as the general public were startled the sensational headlines in the newspapers last week hich announced that, after twenty-five days of imprisnment in the mine at Courrières in northern France,[1] fourteenth survivor had shocked one of the salvage arty engaged rather in repairing the mine than in escue work by placing his hand on his shoulder and sking aid. Some five days previously thirteen others, nought long dead, had been found alive. Such survials for prolonged periods are not so rare as might be nought. A miner in the hard coal regions of Northastern Pennsylvania was confined for even a longer eriod than these French miners and recovered comletely from his trying experience. The failure of the uthorities in charge of the rescue work in France to ealize the possibility of such long survival eminently nerits the disapproval which has been aroused among ne people, and it is not surprising that social disturbnces of various kinds should have been the result.

While it is not explicitly stated, it would seem that he physicians, who were summoned at the beginning f the rescue work to assist in caring for whatever victims might be taken out, were not sufficiently strenuous n their objections to the abandonment of efforts at escue. Had they insisted on the possibility of some of he supposed victims of the accident being still alive, ven after the end of a week or ten days or even longer ollowing the accident, there seems no doubt that the escue work would have been prosecuted with more igor and with a concentration of purpose that would ndoubtedly have saved many lives. Most of the bodies hat have been found during the last week of search efore the meeting with this survivor who had been wenty-five days confined showed evidence of comparaively recent death. But for the feeling of hopelessness hat had been allowed to establish itself many of these victims would undoubtedly have been rescued.

Physicians' experience generally would seem to be sufficient to establish the possibility of survival for three weeks without food, provided that a sufficient supply of liquid can be obtained to maintain vitality at the expense of the tissues themselves. In the absence of water, death within five days is the rule, but otherwise there is no definite limit. Certain experiences with hysterical patients and with the sufferers from lethargic conditions, besides the well-known demonstrations by such fasters as "Dr." Tanner, would seem to show that human beings may very readily survive even for from forty to sixty days without food. Such survival is dependent to a large extent on an absence of physical effort to any noteworthy degree during the course of the abstinence from food. Miners, therefore, who are confined in an out-of-the-way part of a mine by an accident are likely to do much more toward their own ultimate rescue alive by avoiding efforts at helping themselves out if they are behind a thick barrier and waiting patiently for the salvage party than by exhausting their strength in what is almost sure to be misguided labor.

There are lessons in this sad experience in France that should not be lost, especially on physicians and mine authorities who are likely to find themselves face to face with such an awful responsibility. Fortunately mine accidents with us involve many less lives than were at stake in the French catastrophe, but the rescue problem is none the less important, since in such circumstances even the saving of a single life is a triumph not to be despised. In this sad affair human lives have undoubtedly been sacrificed because the limits of human endurance of privation were set too low—a mistake almost unpardonable with our present knowledge of Nature's possibilities.

1. News item, page 1299.

THE PROPOSED CRUSADE AGAINST BLINDNESS DUE TO PREVENTABLE OPHTHALMIA NEONATORUM.

For many years past sporadic efforts to reduce the amount of blindness in the country have been made by physicians. Either acting alone or in the mass as medical societies, they have done their best to spread the good news of a successful prophylaxis, so well stated by Dr. Park Lewis in his article on unnecessary blindness in this issue of The Journal.[1] Boards of health, also, have issued instructions to midwives; city councils have even enacted ordinances, while other agencies, lay and professional, have done their share in directing the attention of those most interested to the dangers inherent in leucorrheal discharges to the eyes and eyesight of the new born, to the symptoms that herald these dangers and to the most effective methods for preventing threatened blindness.

Doubtless these attempts to limit or to abolish preventable disease have had some effect, but in the United States the proportion of blind-asylum inmates to the population still continues to be about the same that it was ten years ago.

During the years immediately following Credé's discovery, the total and proportionate amount of ophthalmia neonatorum—especially in public lying-in hospitals—had greatly decreased. Since Credé's an-

1. The Journal A. M. A., April 28, p. 1262.

nouncement, also, in the private practice of well-informed medical men, the plan of instilling silver nitrate into the eyes of the new-born child whose mother has any form of leucorrhea has been pretty generally and thoroughly carried out. In quite a large percentage of such cases, too, the vaginal discharges are examined, and when the gonococcus is found particular care is observed in treating the mother with germicidal applications.

It has consequently followed that among the well-to-do a serious infantile ophthalmia is rather rare. In the homes of the improvident, the ignorant, the careless — and these are generally the poorer class in the community—the story is a different one. Their accouchements are usually attended by midwives or by overworked physicians who see their patients but once or twice after the birth of the child. A thorough anteparturient examination is often wanting and the mother may easily have had a neglected infection of the genitals at the time of her accouchement. Among this class, hygienic precautions are the exception rather than the rule, so that we can easily understand how its members still continue to contribute to our blind asylums. As Dr. Park Lewis points out, we seem in late years to have abandoned the crusade against preventable ophthalmia neonatorum, although the need of it is quite as palpable as it was twenty years ago and the remedy just as effective. It is quite as true to-day as it was when Credé announced his discovery, that a few minims of a 2 per cent. solution of silver nitrate dropped into each eye of a new-born infant is as harmless to its sight as it is preventive of blindness from gonorrheal or other dangerous infection.

Let us once more sound the note of warning until every accoucheur and every midwife in the land is fully informed of his or her duty. Let it be widely advertised that a free and effective remedy is at the ready disposal of the poorest mother in every part of the country. Allow the responsible parties no excuse for non-performance of duty, and then see to it that neglect of these precautions is strictly punished. If the movement be successful, a campaign of education must precede the enactment of laws on the subject. The American Medical Association may well act as the prime mover in this war against blindness, and there seems no room for doubt that if the plan suggested by Dr. Park Lewis is adopted by it and vigorously agitated by its constituent branches the country will be relieved of a great burden, while the happiness and effectiveness of many lives will be infinitely increased.

THE FLAT FOOT SERIES.

The specialization of modern medicine, while of inestimable value both to the patient and to scientific medicine, has its drawbacks. The most important of these, and one which has been recognized since specialties existed, is the danger that after a time the specialist grows narrow, is always on the lookout for diseases which come within his specialty, and overlooks changes in other organs. That there is a reaction against these narrowing tendencies is shown by the tendency of modern surgeons to have their patients looked over by medical men, and *vice versa*, and by the appearance of journals dealing with the subjects on the borderline between medicine and surgery.

Among the conditions which are to be regarded as borderline conditions must be mentioned what Berry[1] calls the "Flat-Foot Series." We heartily agree with this author that it is a mistake to label all these cases flat foot, for in their earlier stages, and it is during these stages that the deformity should be recognized, the arch of the foot is not lost. Furthermore, there is little doubt that the very use of the term flat foot has led innumerable practitioners astray, the diagnosis being considered as ruled out because the arches of the feet seemed, and indeed were, undeformed. The condition is such a common one, its manifestations are so protean, and its relief, in most instances, is so easy that it is high time that the general mass of the profession became acquainted with the symptomatology and physical signs of its various phases.

So far as the symptoms are concerned, the most important point to be recognized is that the various phases of the flat-foot series may produce pain and other results at a considerable distance from the real lesion. Even pain in the pubic region and herpes progenitalia have been ascribed to weakened or flat feet. While some observers have doubtless been too enthusiastic in their advocacy of the condition as a cause of distant symptoms, there is little doubt that pain in the calf, knee, leg and thigh may all be signs of this pedal infirmity. Without question, some of the cases which are described under the head of sciatica also belong in this category, and the peculiar nervous symptom-complex known as meralgia paresthetica is said to be usually associated with the flat-foot series. In most cases it is apparent enough that the feet are at fault. There is loss of the elasticity of the walk, pleasure in walking becomes a thing of the past, pain, aggravated by wet weather, appears, walking becomes painful, even at night and in bed the feet ache, and there may be distressing nocturnal cramps in the calves. In advanced cases with marked muscle spasm and swelling of the feet, a diagnosis of tuberculosis of the foot may be made, but most of these patients are treated for rheumatism, gout, or arthritis.

In detecting the signs of the flat-foot series it is to be borne in mind that at one end of the series is the pronated foot, with little or no weakening of the arch, and at the other the rigid flat foot. In the later stages, diagnosis, of course, is easy; but in the earlier ones it may present considerable difficulties. The most important points to be noted are the gait and the position of

1. Albany Med. Ann., 1906, vol. xxvii, p. 250.

e foot at rest. The most characteristic thing about
ie gait is the outward rotation of the feet and the
lling in of the ankles. In the standing position,
ith the observer behind the patient, the prominence of
e internal malleoli and the turning out of the foot are
riking, and one gets the impression that the weight of
e body passes far within its normal line, as indeed it
es. Imprints of the foot on smoked paper, according
Berry, are worthless in determining the degree of
e trouble.

The causes of this common condition are manifold.
he fact that many cases occur during rapid growth,
in middle-aged people at the time when they take on
t, shows that a disproportion between the weight and
rength of the foot is an important factor, and practi-
lly the same effect is produced when people of normal
eight suffer from general muscular weakness or local
ot inflammations. Again, some people may be born
th a tendency to weakened feet, for feet may be de-
ctive just as well as lungs or arteries. In many re-
ects, the most important factor is improper shoes,
d it is especially important because it is preventable.
oubtless the trouble is partly with the shoemakers,
io have been working along rule-of-thumb lines for
ars, but reform in this, as in other hygienic subjects,
ist come from the medical profession, and surely here
form should be easy, for it is just as easy to make a
operly constructed shoe as an improperly constructed
e.

THE SCIENTIFIC EXHIBIT AT BOSTON.

It is planned to have in the Scientific Exhibit at the
ning session of the Association a representation of the
thods and progress of medical science in America.
ie exhibit will be held in the spacious new laboratory
ildings of the Harvard Medical School. These labora-
ries with the new museum will furnish unusual space
d light for exhibition purposes. The exhibit will con-
t of specimens, models, diagrams, etc., and a large
mber of special demonstrations will be given. In
rt these will be on special subjects and will be given
small rooms adapted for the purpose, microscopes
ng used; in part, on subjects of general interest, the
itern and projection microscope being used in one of
large amphitheaters. There will be a laboratory in
eration, showing laboratory methods as applied to
gnosis in medicine and surgery and to investigation.
w of the men working in special fields realize how
merous the methods are and how dependent modern
dicine and surgery are on them. The exhibit in
thologic anatomy will be large and will be classified
as to show thoroughly individual diseases and special
thologic processes. In certain lines, as in neuro-
hology, the exhibit promises to be particularly good.
e modern methods of photomicrography with subse-
ent enlargement of the negatives make it possible to
w all the finer details of pathologic conditions. There
lso a large exhibit in anatomy, histology and embry-
gy promised, a special feature of which will consist
reconstructions of large wax models. Our knowledge
in human medicine has largely depended on the study of disease in animals and on the experimental production of disease. The diseases of plants have also been of importance in showing modes of infection and the action of pathogenic organisms on tissues. There will be a full exhibit both of the diseases of animals and of plants, of those naturally acquired and those produced experimentally. A part of the exhibit will be of historical interest, and this will, in part, illustrate the lives and works of illustrious medical men, and, in part, consist of collections of surgical instruments, showing the evolution from the crude instruments of the past. The exhibits of the boards of health will be part of the general scientific exhibit and will illustrate water supply, sewerage, and the general subjects pertaining to public health and preventive medicine. In bacteriology there will be shown methods of diagnosis and investigation and also demonstrations of bacteria by means of cultures, photographs and diagrams. It is believed that the exhibit will do much good in many ways. It will bring together those whose work consists chiefly in laboratory investigation and enable them to see the methods and the results of others. It will especially stimulate those working in special lines of medicine or surgery, for they will see methods in other lines of work which might be used advantageously in their own. It will increase knowledge of disease, for the product of the work of many will give different points from which disease may be viewed. It will increase the sympathy and mutual respect of men for one another. Those who are willing to contribute to this exhibit should write either to Dr. F. B. Wynn, Indianapolis, or to Dr. W. T. Councilman, Boston.

THE UNRULY PRESS.

In the present state of public thirst after medical sensations and with the license allowed itself by the yellow press, it is dangerous to say anything startling or novel in relation to medical or surgical matters within the range of a reporter. A distinguished eastern surgeon relates an experience in point. Having mentioned in a lecture massage of the heart as a means of resuscitation, he was interviewed by telephone in regard to it, but carefully explained that he had never successfully employed the method, the patient on whom he had tried it having died. The next day's newspaper contained an account of his marvelous discovery and of his bringing the dead to life, and in the middle of the article was an account of an interview with his patient who had died two years before. In spite of President Cleveland's demand for a shedding of the esoteric in medicine, we have abundant reason to think it is still advisable for physicians to bridle the unruly member when reporters are near by.

A SURGICAL DILEMMA.

We have commented[1] on the outcome of a case in which a surgeon was sued because he performed an operation which was not on the program when he first began to operate. Though the procedure was entirely in her interest, the patient considered herself damaged because her consent had not been asked, and wanted to get something out of the surgeon as remuneration. Another case

1. The Journal A. M. A., April 14, 1906, p. 1116.

is of interest in this connection. A surgeon diagnosed appendicitis calling urgently for interference, but on preparing for operation he had reason to change his diagnosis and allowed the patient to return home. She thereon went to another hospital and was successfully operated on for an entirely different condition, and afterward brought suit against the first surgeon for not having been operated on, or, for what is practically the same thing, the correction of the wrong diagnosis. If the surgeon had proceeded and done what seemed to him required, the patient would probably have sued him for doing an operation to which she had not consented and possibly, having in his mind the precedent of the three first trials of the Minnesota case previously referred to, he naturally did not care to take the risk. Verily the way of the surgeon is sometimes hard. If he discovers it necessary to perform anything but an absolutely life-saving operation not contemplated in the beginning, without taking the patient out from under the anesthesia, he may still be liable to troublesome litigation. If, on the other hand, he pursues the other course, it seems he may be mulcted in damages for not making the diagnosis before.

AN UNUSUAL VACCINATION ACCIDENT.

We have all probably heard of the unfortunate individual who mistook an ivory vaccination point for a toothpick and the unpleasant consequences which resulted. A rather more striking and uncomfortable, but not inexcusable, accident is reported from Great Britain. A physician, preparing to vaccinate an infant, was struck in the eye by a little fragment of glass from the breaking of a tube of vaccine. Though he immediately washed his eye, the virus took and he had a vaccine pustule, presumably on the conjunctiva, as it is said that his eyesight is not likely to be affected.

INFLUENZA AND APPENDICITIS.

It is often difficult, in medicine as in the ordinary affairs of life, to distinguish between coincidence and cause and effect. Medical men have been accused on more than one occasion of being particularly obtuse in this connection, but we can not see that they are worse than the rest of mankind. It will be remembered that in the winter of 1889-90 influenza reappeared among us, and that about the same time McBurney's point began to creep into the literature, and appendicitis became fashionable. The coincidence caused a not inconsiderable number of physicians to declare that the great increase in the incidence of appendicitis was due to influenza, and that this was capable of proof. To read many of the articles on the subject one might suppose that the matter was beyond question. Rostowzew,[1] who has recently gone over the whole subject very carefully, states that the belief that influenza causes or predisposes to appendicitis is absolutely ungrounded, except in the extremely rare cases in which the influenza bacilli have been found in the lesions. Too much has already been thrown on the shoulders of the influenza bacillus, and one feels strongly inclined to paraphrase the well-known remark and say: "Oh, influenza, how many crimes have been committed in thy name."

1. Mittelhungen aus den Grenzgebieten, 1906, vol. xv, p. 561

Medical News

ARKANSAS.

State Meeting.—The Arkansas State Medical Society will hold its annual meeting at Hot Springs, May 8-10, and a good meeting is expected. Dr. Joseph M. Mathews, Louisville, Ky., will be the guest of honor and will deliver a popular lecture on the night of the 9th to which the public is invited.

COLORADO.

Children's Hospital Organized.—A children's hospital association was organized in Denver, April 5, with Dr. Minnie C. T. Love at the head of the institution.

New Dispensary.—The directors and faculty of Gross Medical College, affiliated with Denver University, held a meeting April 9, at which it was decided to erect a new dispensary in connection with the college at Fourteenth and Arapahoe streets.

Personal.—Dr. Seymour D. Van Meter, secretary of the State Board of Medical Examiners, and Mrs. Van Meter, who were in San Francisco April 18, have telegraphed that they are "safe, not even scratched."——Dr. Orville M. Clay, Montrose, suffered a fracture of the wrist and severe lacerated wounds in a runaway, April 1.

War on Tuberculosis.—At a meeting held at the headquarters of the Charity Organization Society, Denver, April 9, the following resolution was adopted:

WHEREAS, It appears to the Charity Organization Society of Denver that more efficient means should be devised and inaugurated for the prevention and relief of tuberculosis in the city and county of Denver and throughout the state of Colorado, as affecting conditions in the city and county of Denver. Now, therefore, be it

Resolved, That the president of this society appoint a committee consisting of nine physicians residing in the city and county of Denver, well known for their ability and interest in this subject, which committee, with the president of this society as member ex-officio, shall be known as the Committee of the Charity Organization Society of Denver, for the Control of Tuberculosis.

That such committee shall be authorized and empowered to co-operate with the Charity Organization society and its co-operating institutions, to take all necessary steps to inaugurate such methods as in their judgment will best accomplish the purpose of their organization.

CONNECTICUT.

Bequests.—Danbury Hospital has received a bequest of 100 shares of stock, valued at $5,000, by the will of the late Edward E. Gilbert, Georgetown.——The Hartford County Medical Society has, it is understood, received a gift of $10,000 by the will of the late Dr. William T. Bacon. He also bequeathed $5,000 to establish a free bed in the eye and ear department of the Hartford Hospital.

GEORGIA.

The State Meeting.—The fifty-seventh annual meeting of the Medical Association of Georgia was held at Augusta, April 18-20, under the presidency of Dr. William Zellars Holliday, Augusta. The following officers were elected: President, Dr. Henry H. Martin, Savannah; vice-presidents, Drs. Theodore E. Oertel, Augusta, and Jarrett W. Palmer, Ailey; secretary-treasurer, Dr. Louis H. Jones, Atlanta; delegates to American Medical Association, Drs. Thomas D. Coleman, Augusta; George R. White, Savannah; Henry F. Harris, Atlanta. Savannah was selected as the place for holding the next annual meeting. The following preamble and resolution were adopted:

WHEREAS, It has been brought to the attention of this body that there is a pure food bill at present before the Congress of the United States, known as the Hepburn Bill; and

WHEREAS, This bill meets with the approbation of this body representing the medical profession of Georgia; therefore, be it

Resolved, That this body earnestly requests the senators and representatives in Congress from the State of Georgia to vote for the said bill, and that they use all their influence to further its passage.

The following was likewise unanimously adopted:

Resolved, That it is the sense of this association that the minimum fee for life insurance examinations should be $5.

An account of the scientific proceedings will be given next week.

ILLINOIS.

Personal.—Dr. James A. Egan, secretary of the State Board of Health, who has been ill for the past three weeks, is greatly improved.——Dr. and Mrs. W. H. McClure, Sheldon, have recently returned from California.

State Society Meeting.—The Illinois State Medical Society will meet in Springfield on the date originally set, May 15, 16 and 17. The order changing the date of the meeting to May 22, 23 and 24 has been rescinded.

Epidemic Diseases.—A large number of additional cases of smallpox have appeared at Fairhaven and Milledgeville.——The public schools of Metcalf have been closed on account of an epidemic of diphtheria.——Smallpox has broken out in Montgomery County and it is reported that in one family seven members are victims of the disease.

Chicago.

May Alter Interneship Ratio.—Action may be taken by the board of Cook County commissioners revising the apportionment of internes to the County Hospital, owing to the lack of eligible appointees in the eclectic and homeopathic schools.

Personal.—Dr. Eugene S. Talbot was unanimously made an honorary member of the Belgian Society of Stomatology at its meeting, April 8.——Dr. R. R. Campbell, who has been away from the city during convalescence after an operation for appendicitis, has returned.

Deaths of the Week.—For the week ended April 21, 645 deaths were reported, 24 deaths more than for the preceding week and 87 more than for the corresponding week of last year. The mortality was at the annual rate of 16.40 per 1,000. Pneumonia, as usual, far exceeds any other death cause, with 123 deaths; consumption follows with 75, and then come violence, including suicide, with 42; heart disease with 40; nephritis with 35; acute intestinal diseases with 32; bronchitis with 21; nervous diseases with 39, and cancer with 28 deaths. Diphtheria caused 11 deaths during the week; measles, 2; scarlet fever, 13; typhoid fever, 10, and whooping cough, 1 death.

KANSAS.

Offered Hospital Site.—The Sisters of Charity, Leavenworth, have been offered a site for a new hospital on South Second Street, overlooking the river. The site contains 20 acres and is valued at about $35,000.

Personal.—Dr. W. F. Schoor, Hutchinson, has been appointed coroner of Greenough County, vice Dr. Henry M. Stewart.——The residence of Dr. Edwin T. Shelly, Atchison, was damaged to the extent of $2,000 by fire, March 25.

Smallpox.—More than 40 cases of smallpox were reported from Wichita for the five weeks ended March 22. No deaths have thus far occurred and stringent quarantine regulations are being enforced.——Smallpox has broken out among workmen in a cement plant in Iola.

Graduating Exercises.—The graduating exercises of the Kansas Medical College, the medical department of Washburn University, Topeka, were held April 18, when a class of 18 received diplomas from Dr. William S. Lindsey. Dr. Herbert L. Alkire delivered the faculty address.

Charter Revoked.—The state charter board on April 14 revoked the charter of the Kansas State Medical and Surgical Institute, an institution which it is alleged is deceiving the public by giving out the impression that it is a state institution. Dr. William J. Bonesteel is president, and Dr. C. A. Bonesteel, manager, of the institution.

Society News.—The Southeastern Kansas Medical Society, at its meeting in Fort Scott, March 3, elected Dr. Elmer E. Liggett, Oswego, president; Dr. James C. Cummings, Bronson, vice-president; Dr. Andrew J. Roberts, Fort Scott, secretary, and Dr. J. E. Jewell, Moran, treasurer. The society passed resolutions condemning in unmeasured terms the sale of "patent medicines" by druggists.——At the annual meeting of the Golden Belt Medical Association, held at Abilene, April 5, the following officers were elected: Dr. Edgar L. Simonton, Wamego, president; Dr. Frank M. Gaines, Solomon, vice-president; Dr. Howard N. Moses, Salina, secretary, and Dr. William S. Yates, Junction City, treasurer.——At the last meeting of the Sumner County Medical Society a resolution was adopted against allowing insurance companies to fix the fee for medical examination.

MARYLAND.

Baltimore.

Deaths from Lung Disease.—For the week ended April 21 there were 23 deaths from pneumonia and 29 from consumption. The usual proportion of 5 to 2 was observed between the mortality of colored and whites.

Personal.—Dr. John C. Hemmeter addressed the Medical Association of Greater New York, April 10, on "Diseases of the Intestines That Are on the Border-line Between Internal Medicine and Surgery."——Dr. Hugh C. Trout, resident physician at the Union Protestant Infirmary, and Dr. Robert Nelson, assistant physician, will soon leave for Europe. Dr. Theodore F. Riggs will succeed Dr. Trout.——Dr. James Cooper has returned home after a year and a half of sea travel.——Dr. William Lee Howard has moved to Westboro, Mass., and will devote himself to literature and literary work.——Dr. Robert H. P. Ellis has returned from a trip to Mexico.——Dr. George W. Mahle, assistant resident physician of Bayview Hospital, is convalescent from typhoid fever.

MASSACHUSETTS.

Bequests to Hospitals.—By the will of the late James F. Redington, Boston, $1,000 each is devised to the Children's Hospital, Carney Hospital and the Little Sisters of the Poor.

Personal.—The health board of Ware has organized and elected Dr. Adolph A. Auger, chairman, and Dr. Worthington W. Miner, secretary.——Dr. Martin M. Brown has been elected to fill the vacancy in the advisory board of the medical staff of North Adams Hospital.——Dr. George L. Black, city physician of Lawrence, has resigned.——The board of health of Adams has organized with Dr. Alfred Desrochers, chairman.——Dr. Samuel B. Strickland has resigned from the Waltham board of health.——Dr. H. Gordon-Forbes, Chicopee Falls, is taking a trip to the Bermudas.

MINNESOTA.

Trip to the Orient.—A party of 100 physicians and their families propose to take an eighty-one-day trip to the Orient, leaving St. Paul June 25 and sailing from Seattle on one of the Great Northern Steamships.

Refuses to Pardon Malchow.—The President has announced that he will not interfere in the case of Prof. C. W. Malchow, formerly professor in Hamline University, sentenced to two years' imprisonment on the charge of sending improper literature through the mails.

Ask Same Fee for All Examinations.—At the semi-annual meeting of the Brown and Redwood Counties Medical Association, held in New Ulm, April 17, it was decided to ask the State Medical Society to co-operate in having all physicians refuse a rate lower than $5 for examinations for life insurance.

Hospital Notes.—The Wilcox homestead, East Minneapolis, has been selected as the site for a new hospital, and liberal subscriptions toward the $10,000 required have already been obtained. The St. Anthony Medical Society is taking a great interest in the enterprise.——Negotiations are in progress for the establishment of a hospital at Aitkin.——William H. Kelly, Sr., has presented the Owatonna City Hospital with $10,000, hampered by no conditions.——Immanuel Hospital, Mankato, will be built at the corner of Fourth and Walsh streets, work being begun as soon as the spring opens.

Personal.—Dr. R. Ignatius Hubert, St. Cloud, has been appointed physician of Stearns County.—Lieutenant William H. Tefft, assistant surgeon, U. S. Army, stationed at Fort Snelling, sustained a fracture of the leg in an informal wrestling match at the Officers' Club, March 24.——Dr. Frederick O. Gronvold, Gary, will soon leave for Germany to take a postgraduate course.——Dr. Francis R. Woodard, Minneapolis, who has been ill with pneumonia, is reported as improving but not yet convalescent.——Dr. Oswald Leicht, Winona, has declined to accept the appointment tendered him by the government as a member of the State Board of Medical Examiners.

Teachers and Tuberculosis.—The State Board of Health, at its meeting January 9, took action advising that those suffering from tuberculosis be not employed as teachers:

1. Because they can not hope to recover while following such an occupation.
2. Because they are a menace to the school children under their care.

And that children suffering from tuberculosis be excluded from school:

1. Because their recovery is not probable while they are kept under the strain of school life.
2. Because the importance of fresh air, rest and good food is even greater for the growing child than for the adult, and the child attending school does not get the necessary amount of any of these.
3. Because close confinement in school may be followed by other forms of tuberculosis than consumption, and may cause permanent deformities or death.
4. Because school children with consumption (pulmonary tuberculosis) are a decided menace to their associates.
5. Because by excluding tuberculous children from school and allowing them to recover and at the same time preventing the infection of others, many lives of value to the state may be saved.

The secretary was instructed to send these suggestions to every school board, health officer and to the superintendents of city and county schools throughout the state.

MISSOURI.

Licenses Revoked.—The license of Dr. A. F. Keeler, St. Louis, and of Annie Newland and Mrs. Matilda Myers, midwives, of St. Louis, were revoked by the State Board of Health for unprofessional methods, April 12.

NEW YORK.

Smallpox.—Three cases of smallpox have developed in Middletown within forty-eight hours. The house in which the cases occurred is quarantined and there is no fear of a spread of the disease.

Diseased Cattle Slaughtered.—Under the direction of the state authorities 23 head of cattle suffering from tuberculosis were killed at Rome. All the cattle had responded to the tuberculin test, and the postmortems showed that all were diseased.

To Restrict Sale of Poisons.—Health Commissioner Green of Buffalo appeared before the aldermanic committee on ordinances April 12 and spoke in favor of the proposed ordinance for the restriction of the sale of carbolic acid and cocain in the city.

Medical Club Organized.—Physicians of Poughkeepsie, all members of the Dutchess County Medical Society, have formed a local club, known as the Dutchess Club, with the following officers: President, Dr. John C. Otis; vice-president, Dr. Charles W. Pilgrim; secretary, Dr. Frederick J. Mann, and treasurer, Dr. James E. Sadlier. The object of the club is to take up and consider all matters looking to the improvement of the sanitary condition of Poughkeepsie.

Personal.—Dr. and Mrs. Henry L. K. Shaw, Albany, sailed for Europe, April 3.——Dr. William W. Carleton has been elected health officer of Waterloo.——Drs. A. LeRoy Chapin, Niagara Falls, Flavius J. Baker, Lockport; E. P. H. Griswold, Niagara Falls, and John H. Miller, Niagara Falls, were elected delegates to the eighth district branch of the New York Medical Society by the Niagara County Medical Society.——Dr. James M. Rutledge, Syracuse, has been appointed district physician in place of Dr. Albert S. Hotaling, resigned. ——Dr. Horace M. Edmonds has been reappointed health officer of Tonawanda. ——Dr. Thomas D. Collins has been reappointed health officer of Ballston Spa.

Illegal Advertisements Barred.—The United States postoffice authorities and the Medical Society of the County of New York are continuing their campaign against illegal advertising medical practitioners. The recent order of the department, denying the use of the mails to about 50 persons and firms in Manhattan and Brooklyn, accused of such practices, has been followed by a notice served on three Manhattan newspapers to the effect that if they continue publication of such advertisements they will not be permitted to send their papers through the mails. The three papers referred to have complied with the order.

New York City.

Bequests.—By the will of Mrs. Sarah E. Sands of Lakewood, N. J., March 30, St. Luke's Hospital is given $15,000 to be used for the endowment of three beds in memory of the testator's husband, Abraham B. Sands.

Deaths from Violence.—The report of deaths by violence for the first quarter of 1906 in the Borough of Manhattan shows an increase in homicides during each month, there having been 18 more reported in March than in January.

Hospital Conference.—A conference has been organized for the purpose of preventing the extravagance and waste in hospital maintenance. Circular letters have been sent to the superintendents of the various hospitals asking for details regarding the financial management of the hospitals.

Personal. Dr. J. Richard Kevin has been appointed assistant surgeon of the Fourteenth Infantry, N. G. N. Y., vice Dr. Arthur H. Bogart, resigned. —— At a meeting of the New York Academy of Medicine, April 5, Dr. Wendell C. Phillips was elected vice president, succeeding Dr. George Ryerson Fowler, deceased.

Patients in Bellevue Hospital Vaccinated.—All patients who were in fit condition were vaccinated this week. There were nearly 900 patients and all submitted readily except the alcoholics, the majority of whom, not being prisoners, beat a very hasty retreat when told they would have to be vaccinated if they remained.

Rockefeller Institute for Medical Research.—Invitations are out for the opening of the laboratories at Avenue A and East Sixty-sixth Street, on May 11 at 4 p. m. Addresses will be made by President Charles William Eliot of Harvard University, President Nicholas Murray Butler of Columbia University, Dr. William H. Welch, president of the board of directors, and Dr. Luther E. Holt, secretary of the board of directors.

Hospital Finance and Economy.—A second meeting of representatives of all the hospitals of Greater New York was held at the Academy of Medicine, April 18, at which the report of the committee on constitution and by-laws was received, the permanent organization completed and a program for the ensuing year adopted. The chief object of the meeting was to endeavor to establish and maintain a healthy state of affairs in hospital administrations by means of the Hospital Conference of the City of New York.

Opposition to Hospital Transfers.—Coroner Harburger, in charging a jury in a case in which death is said to have been due to the transfer of a patient in a precarious condition from one hospital to another, said that he thought this practice was nothing short of murder. The jury in its verdict sustained the board of coroners of the borough of Manhattan in its attempt to abolish the system of transferring from one hospital to another patients whose condition was critical.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended April 14, 1,512 cases of measles, with 47 deaths; 390 cases of tuberculosis, with 183 deaths; 328 cases of diphtheria, with 35 deaths; 220 cases of scarlet fever, with 20 deaths; 93 cases of varicella, with 1 death; 41 cases of cerebrospinal meningitis, with 30 deaths; 34 cases of pertussis, with 6 deaths; 30 cases of typhoid fever, with 10 deaths, and 5 cases of smallpox, making in all 2,653 cases, with 332 deaths.

New Jewish Hospital.—This hospital, which is the successor of the old Memorial Hospital for Women and Children, and is situated in Classon Avenue, Brooklyn, will open its dispensary May 3 and the entire hospital will be ready for occupancy October 1. The wards will have room for about 175 beds and there will be 29 private rooms. The dispensary will have 11 clinics and a staff of 30 physicians. Both dispensary and hospital will be free to all, regardless of color or creed. The cost of maintenance will be about $100,000 annually, of which the city will contribute about $7,000.

NORTH DAKOTA.

State Society Meeting.—The annual meeting of the North Dakota Medical Society will be held in Fargo, May 16 and 17.

Smallpox.—Smallpox is reported to have broken out near Litchville. The disease is said to have originated among a party of Dutch immigrants. Strict quarantine regulations are being enforced.—— There have been three cases of smallpox in Cando.

Hospitals Planned.—Drs. W. H. M. Philip and Harwood have purchased a residence in Hope in which they will establish a hospital. ——Provided the city of Grand Forks will appropriate $15,000 and donate a block of land, a Catholic sisterhood will erect a hospital with all modern equipments and accommodation for 60 patients.

OHIO.

Defendant Wins Suit.—In the suit brought by William Bowers against Dr. William Z. Kumler, Cincinnati, in which $10,000 damages was claimed for alleged malpractice in the setting of a broken shoulder, the jury found for the defendant.

Personal.—Dr. George Mykinger, an interne in the City Hospital, Cincinnati, was assaulted by a delirious patient recently and had a rib fractured.——Drs. Magnus A. Tate and Charles L. Bonifield have been elected delegates from the Hamilton County Medical Society to the Ohio State Medical Association, and Drs. Robert Carothers and E. Gustav Zinke have been elected alternates. ——Dr. Francis Dowling, Cincinnati, has been commissioned a member of the board of examiners for the sixth civil service district, which includes the states of Ohio, Indiana and Kentucky.——Dr. Colston L. Dine, Minster, who was operated on several weeks ago, has recovered and resumed practice. —— Dr. Floyd F. Swimley, Forest, is improving and it is hoped that he may not lose his eyesight. —— Dr. Charles M. Hendricks, Toledo, at present house physician of the National Jewish Hospital for Consumptives, Denver, has been appointed to the staff of Phipps Sanitarium in that city.—— Dr. Francis M. Murray, Delaware, while making a professional call April 16, was struck by a passenger train on the Hocking Valley Railway, his horse killed, his buggy demolished and he himself sustained a fracture of the arm and numerous contusions. ——Dr. Arthur F. Osmond has been appointed successor to Dr. John F. Stemler as receiving physician of the Cincinnati City Hospital. —— Dr. Parker F. South

wick has been reappointed city physician of Sandusky.——Dr. Frank S. Pomeroy, Chardon, who has been critically ill with typhoid fever, is reported to be improving.——Dr. Harry R. Geyer, Zanesville, has been elected delegate to the Ohio Medical Association from the Muskingum County Medical Society.

OKLAHOMA.

Association Meeting.—The Cleveland County Medical Association at its meeting elected Dr. David W. Griffin, Norman, president; Dr. Halshaw, Denver, vice-president, and Dr. Silas T. Burch, Norman, secretary and treasurer.

Personal.—Dr. J. K. Julien, Covington, has been made coroner of Garfield County, vice Dr. Sarben, resigned.——Dr. H. K. Wilson has been made county superintendent of health vice Dr. Henry C. Bowers, Enid, resigned.——Dr. Samuel A. Lively, Wakita, is seriously ill in a hospital in Wichita, Kan.

Hospital Notes.—An addition of 20 rooms is being made to each building of the Territorial Sanitarium, Norman. There are at present nearly 500 patients in the institution.——It is proposed by the hospital commission of the Methodist Episcopal Church to purchase the City Hospital, Guthrie, to double the capacity of the institution and to establish a nurses' training school in connection with it.

License Revoked.—Judge Burford on April 5 decided against Dr. Calvin D. Gully in the proceedings brought against him by the attorney general, and revoked his license to practice medicine in Oklahoma. In revoking the license the judge held that it had been obtained by fraud, as the school from which Dr. Gully obtained the diploma was the Independent Medical College and a diploma mill. The attorney general showed that the school mentioned was chartered Oct. 20, 1896, and that Dr. Gully obtained his diploma 15 days later.

OREGON.

Fined for Failure to Report.—Dr. John Madden, Portland, was fined $25, March 30, for failure to report a case of contagious disease. Dr. Madden held that the malady was chickenpox and City Health Officer Dr. Cortez H. Wheeler declared it to be smallpox.

New Hospitals.—A hospital is to be started in Forest Grove.——The Sisters of St. Francis will begin the erection of a hospital building in Klamath Falls in the autumn.——The Hot Lake Sanitarium, Le Grande, is to be improved by the erection of a three-story building with a glass-covered conservatory, the installation of a cold-water system and other conveniences at an expense of $100,000.

Personal.—Dr. Andrew J. Gusy, Portland, has gone to New York for treatment of a serious affection of the eyes.——Dr. Edward B. McDaniel, Baker City, has been appointed surgeon of the Oregon Railway & Navigation Company vice Dr. Taylor N. Snow, resigned.——Dr. John Wright, Roseburg, is critically ill.——Dr. John J. Fisher was dangerously wounded in an attempted holdup in Portland, March 20.

Condemns Contract Practice.—The Portland City and County Medical Society at a recent meeting adopted the following resolutions:

Resolved, That the City and County Medical Society of Portland, Ore., condemns the following forms of contract practice:

First.—Any form of contract to treat the members of any association or corporation, whose membership is composed of persons obtained from the general public by solicitation of agents or otherwise.

Second.—Any form of contract to treat the members of any lodge or order or their families.

Resolved, further, That we recognize the right of contract on the part of members of this society with firms or corporations whose sick benefits are limited to the employés of said firms or corporations, or in the case of states, counties or municipalities to the indigent poor; provided, however, that in the case of firms and corporations such contract shall be for a sum that shall not be less, in the aggregrate, than that provided for as a minimum charge in the schedule of fees adopted by this society.

PENNSYLVANIA.

Typhoid Fever Prevalent.—There are at present more than 400 cases of typhoid fever in Pittsburg and Allegheny, the majority of the cases being in the latter city.

Typhoid on the Wane.—During the twenty-four hours ended April 18, only 15 cases were reported to the Pittsburg bureau of health, showing a marked decrease.

Sentenced for Malpractice.—Dr. Edwin S. Cooper, New Castle, was sentenced on March 24 to 15 months' imprisonment, having been twice convicted of conspiracy to perform criminal operations.

Gifts to Hospitals.—Mrs. Lizzie B. Plumer has given $12,500 to the Franklin Hospital for the purpose of establishing and endowing a free room to be known as the Henry Baldwin Plumer room.——Plans have been prepared for a new ward at the Chester Hospital, to be given by Alfred O. Deshong.

Personal.—Dr. W. Albert Nason has been re-elected secretary of the Nason Hospital, Roaring Springs.——Dr. William W. Cole has been appointed surgeon of Allegheny, vice Dr. T. L. Hazard, and Dr. Francis X. Straessley succeeds Dr. Daniel I. Jamieson as city physician.——Dr. Isaac N. Taylor has been elected president of the Meadville board of health; Dr. Joshua M. Cooper, secretary, and Dr. Howard V. Merrell, health officer.——Dr. John M. Sheedy has been reappointed a member of the Altoona board of health.——Dr. Ulysses S. G. Heil has been elected president, and Dr. Sydenham P. Uhler, vice-president, of the board of health of Easton.——Dr. Herbert S. Van Kirk has been elected president of the McKeesport board of health.——Dr. Hamilton K. Beatty has been appointed superintendent of the Allegheny bureau of health.——Dr. Francis X. Weil, York, has been elected treasurer of the York County Medical Society, vice Dr. Lawton M. Hartman, York, resigned.——Dr. John B. Groh has been re-elected health officer of Lebanon.——The mayor of Franklin has appointed the following board of health: Drs. Edward W. Moore, Samuel G. Foster, Harry F. McDowell and P. H. Conradson, and Mr. M. S. McKinzie.

Philadelphia.

Personal.—Dr. James W. Holland, dean of Jefferson Medical College, has resigned his deanship, but will retain the chair of chemistry.

Money for Hospital.—The sixth annual charity ball given for the benefit of Mount Sinai Hospital, April 18, netted $2,000 for the institution.

Medical Club Reception.—The Medical Club of Philadelphia tendered a reception to Dr. William H. Hartzell, president of the Medical Society of the State of Pennsylvania, and Dr. Oscar H. Allis, April 20.

Wins Malpractice Suit.—In the case of Dr. Walter Browning, sued by Elias B. Smith for $10,000 damages for alleged improper and unskillful treatment, the plaintiff was nonsuited in the Court of Common Pleas, April 11.

Pennsylvania Relief Fund.—The monthly report of the Employés' Relief Fund for the Pennsylvania Railroad Company's lines east of Pittsburg and Erie shows that the payments of benefits to its members and the families of deceased members for March, 1906, aggregated $150,694.15, of which $63,835.50 was on account of death and $86,858.65 on account of disablement by sickness and accident. The payments thus far have amounted to $14,750,045.51, of which $6,059,112.20 was on account of death of members, and $8,690,933.31 on account of disablement.

Fraudulent Oil Dealers Arrested.—Fifteen individuals were arrested, April 15, charged with selling oil represented as olive oil. In the specimens analyzed no trace of olive oil was discovered. They consisted wholly or in part of cottonseed oil, sesame oil, lubricating oil and other inferior substances. They were held by the magistrate for their appearance at court. It was shown at the hearing that the material sold as olive oil was deleterious in its effects on persons in health, and that it is almost certainly of no value and is perhaps dangerous to individuals with impaired powers of digestion.

Health Report.—The total number of deaths reported for the week ended April 21 aggregated 568, as compared with 588 for the previous week, and 455 for the corresponding week of 1905. The principal causes of death were: Typhoid fever, 20; measles, 6; whooping cough, 6; diphtheria, 5; consumption, 73; cancer, 21; alcoholism, 5; apoplexy, 17; heart disease, 54; acute respiratory disease, 97; enteritis, 16; Bright's disease, 32; suicides, 5; accidents, 26; marasmus, 5. There were 357 cases of contagious disease reported, with 27 deaths, as compared with 272 cases and 40 deaths in the preceding week. Typhoid fever is still prevalent and slightly on the increase; 222 cases were reported for the week. In the previous week 198 cases were reported, with 24 deaths. The prevalence of measles is not so severe. The cases reported this week numbered 351, as compared with 389 reported during the previous seven days.

Anatomists Meet.—The Association of American Anatomists, at the regular meeting held in Wistar Institute, April 18, decided that the institute should strive to develop a high grade of research work, maintaining a small corps of the most able investigators in the country. Those present at the meeting were Drs. M. G. Conkling and H. H. Donaldson of the Wistar Institute, Drs. E. P. Mall and Llewellys F. Barker of Johns Hopkins, Drs. G. Carl Huber and J. P. Murich of the University of Michigan, Dr. Charles Minot of Harvard, Dr. George S. Huntingdon of Columbia, Dr. S. H. Gage of Cornell and Drs. E. G. Conkling and George A. Piersol of the University of Pennsylvania. It was decided by the advisory board that the Wistar Institute be hereafter the center of brain

research in America. In order that the work may be properly carried on it will be necessary to collect brains of every race or every mixed race. Dr. H. H. Donaldson of the University of Chicago was elected to take charge of the neurologic work, with Dr. G. S. Strecter of Johns Hopkins University and Dr. S. Hatai of the University of Chicago as assistants.

SOUTH CAROLINA.

Fined for Assault. In the case of Dr. Edgar S. McDow, Lancaster, charged with assault and battery with intent to kill, and with carrying concealed weapons, the jury brought in a verdict of guilty, and he was sentenced to pay a fine of $250 or to be imprisoned for four months in the penitentiary.

Commencement. The Medical College of the State of South Carolina, Charleston, held its seventy-sixth annual commencement exercises April 11, when a class of eight received diplomas in medicine. Dr. Francis L. Parker delivered the doctorate address and the degrees were conferred by Major Theodore B. Barker, president of the board of trustees.

TENNESSEE.

Cornerstones Laid.—The faculty of the College of Physicians and Surgeons, Memphis, laid the cornerstone of the new college building with appropriate ceremony, April 22.——The laying of the cornerstone of the Lucy Brinkley Hospital, Memphis, took place March 14.

Presentation.—The senior class of Memphis Hospital Medical College on March 29 presented Dr. Dudley D. Saunders, for many years a prominent member of the faculty, with a goldheaded cane. The occasion was the closing lecture of the fiftieth year of medical teaching of Dr. Saunders.

Academy Meeting. The annual meeting of the Nashville Academy of Medicine and Davidson County Medical Society was held April 3. The following officers were elected: Dr. William R. Sifford, president; Dr. William Litterer, vice-president, and Dr. Holland M. Tigert, secretary and treasurer.

New Staff at Erlanger Hospital.—The following summer staff came on duty at Erlanger Hospital, Chattanooga, April 1: Dr. Fred B. Stapp, chief of staff; Drs. Thomas E. Abernathy, Clarence A. Cobleigh, Joseph W. Johnson, John S. B. Woolford, Raymond Wallace, German P. Haymore, Robert H. Tatum and William A. Duncan.

Physicians and Dentists Organize.—The physicians and dentists of Humboldt have formed an organization for mutual benefit by study and discussion. Dr. James H. Preston has been elected president; Dr. Benjamin S. Penn, vice-president, and Dr. J. H. Meeks, secretary, of the organization. It was decided also to reorganize the Humboldt Medical Society, amending its constitution so as to provide for the admission of regularly graduated dentists.

Commencements.—The fifty-fifth annual commencement exercises of the University of Nashville, Medical Department, were held March 29. Dr. S. F. Crockett delivered the faculty address after which Chancellor Porter conferred degrees on a class of 42. Meharry Medical College, Nashville, held its thirteenth annual commencement exercises April 4, when a class of 67 received diplomas. The doctorate address was made by Rev. M. C. B. Mason, Cincinnati.

Federal Control of Quarantine. The Memphis and Shelby County Medical Society, at its regular meeting, March 20, adopted the following resolutions in regard to the federal control of quarantines:

> Believing that federal control of maritime and inter-state quarantine offers the only solution of the prevention and control of epidemic yellow fever, and that this is now the most vital question before the South; be it
>
> *Resolved*, That the Memphis and Shelby County Medical Society place itself on record as advocating the placing of such quarantines completely in the hands of the federal government. And be it
>
> *Resolved*, That copies of this preamble and resolutions be sent to the leader of the minority of the U. S. House of Representatives and to the senators and representatives in Congress from Tennessee. And be it further
>
> *Resolved*, That copies of this preamble and resolutions be sent to the various medical societies of this state and their co-operation in the securing of this action by Congress be solicited.

VIRGINIA.

Want Tax Removed. A committee from the Petersburg Medical Society has appeared before the finance committee of the council to ask for a removal of the special license tax of $25 on physicians.

Unlicensed "Patent-Medicine" Vendor Fined. W. H. Burrell, Washington, was arrested April 3 for selling "patent medicines" without a license and fined $30. In default of payment he was committed to jail.

New Hospital.—The Colonial Coal and Coke Company is building and equipping a hospital at Dorchester, to be known as the Kammerer Memorial Hospital. Dr. Morand L. Stallard, Norton, will be at the head of the institution.

Acquitted of Malpractice.—In the case of Dr. Francis M. Morgan, Berkeley, on trial at Norfolk on the charge of criminal malpractice on Mrs. Josephine Davis, the jury acquitted the defendant, March 21, after a deliberation of fifteen minutes.

Gifts for the University of Virginia.—Charles Steele of the firm of J. Pierpont Morgan & Co. has given $50,000, and Miss Helen Gould of New York City, $10,000, to be expended in the completion of the Hospital of the University of Virginia, Richmond. The gift of Miss Gould is to provide a ward for colored patients at the hospital.

Comply with Standard Requirements.—Matriculants at the Medical College of Virginia will hereafter be required to be graduates of a high school or some educational institution of at least equal rank. The same rule applies to the University College of Medicine, that both institutions may be members of the American Medical College Association.

Personal.—Dr. George Ben Johnston, the eminent railroad surgeon, has been elected to the chair of surgery in the University of Virginia and has been made chief of the hospital staff of the university, his services to begin at the opening of the next session.——Dr. William M. Randolph has been elected adjunct professor of surgery in the University of Virginia, vice Dr. William G. Christian, resigned.——Dr. J. S. De Jarnette, Youngs, has been elected superintendent of the Western State Hospital, Staunton.——Dr. William R. Purvis has been reappointed coroner of Alexandria.——Dr. George S. Walker has resigned as assistant superintendent of the Western State Hospital, Staunton.——Dr. Frank S. Hope has qualified as health officer of Portsmouth, succeeding Dr. Norfleet.——Dr. Ennion G. Williams has been appointed a member of the Committee of Health of Richmond.——Dr. Lewis C. Bosher has been elected president of the Memorial Hospital, Richmond, vice Dr. George Ben Johnston, resigned; Dr. John P. Davidson has been elected vice-president and Dr. Charles R. Robbins, secretary and treasurer of the institution.——Dr. Z. Curtis A. Burwell, Salem, physician for the Tidewater Railroad, has resigned and Dr. Johnston has been appointed to fill the vacancy.——Dr. Hack U. Stevenson, Toano, has been elected a member of the State Examination Board, vice Dr. Junius E. Warinner, Brook Hill.——Dr. Ernest Woolfolk, Lahore, who has been under treatment in the Garfield Memorial Hospital, Washington, D. C., is reported to be improving.

WYOMING.

Smallpox. In the farming districts of Lyman and Bridge, in Uinta County, 57 cases of smallpox are reported. The entire mining town of Jelm, southwest of Laramie, is under quarantine for smallpox.

Sheridan County Society Meeting.—At the annual meeting of the Sheridan County Medical Society the following officers were elected: President, Dr. F. A. Hodson; vice-president, Dr. C. W. Lawrence; treasurer, Dr. A. G. Hurd, and censor, Dr. F. A. Dolan, all of Sheridan.

Deplores Counter Prescribing. At a recent meeting of the Sheridan County Medical Association the following resolution was unanimously adopted: "It is the sense of this society that we deplore the too prevalent practice among druggists of counter prescribing and refilling prescriptions without orders; and that we will no longer tolerate the laxness in these things that up to this time has existed."

Personal. Dr. Harry S. Finney, Rawlins, who has been ill in a hospital in Omaha with typhoid fever, has recovered.——Dr. E. E. Levers has tendered his resignation as superintendent of the Sheridan State Hospital.—— Dr. William A. Burgess, Cheyenne, has succeeded Dr. John H. Conway as physician of Laramie County.——Dr. Darwin E. Brown, Laramie, has been appointed surgeon in charge of the hospital of the Diamondville Coal and Coke Company.

State Association Meeting. At the annual meeting of the State Medical Association, held in Cheyenne, the following officers were elected: Dr. William A. Wyman, Cheyenne, president; Drs. Fred Horton, Newcastle, and Ernest A. Crosbery, Wheatland, vice presidents; Dr. A. Francis Hoff, Casper, treasurer; Dr. Henry L. Stevens, Laramie, delegate to the American Medical Association, and Dr. Alfred C. Godfrey, Lander, alternate. The next meeting of the association will be held in Casper.

THE SAN FRANCISCO CATASTROPHE.

Earthquake and Fire in California—The Problems of Relief and Sanitation.

As all the world knows, San Francisco suffered a violent earthquake at 5:13 a. m., April 18, which wrecked a large number of buildings and broke gas and water mains and electric wires. Fires immediately started which burned for three days and devastated the entire city with the exception of a small portion of the residence section called the "Western Addition," rendering many thousands homeless. A large number, the exact figures being as yet unobtainable, were killed by falling buildings or burned to death. Many hundreds were injured. As all but three or four hospitals in the city were destroyed, the Mechanics Pavilion, a large wooden building, was utilized as a receiving hospital, but only for a short time, as the fire soon reached and destroyed it. The fires broke out simultaneously in so many places and spread so rapidly that all means of communication were cut off and each was obliged to shift for himself. The patients in the various hospitals were removed, some to the Presidio and some to Oakland.

There are probably 125,000 refugees in Oakland, whose citizens are responding nobly to the call for help. Probably 200,000 refugees are quartered in Golden Gate Park, the Presidio, along the water front and the city dumps.

Many hundreds of children are lost and hundreds of others are suffering or dying from exposure and lack of water. One physician reported 75 stillbirths in two days. The sufferings of women, and especially of children, are too horrible to describe.

There is little danger now of suffering from starvation, as supplies are being rushed in by military authorities, by relief trains from New York, Chicago, Denver and other cities, and by the Masonic fraternity, the Elks, Odd Fellows and other fraternal organizations. It will be some time before the homeless people have shelter, although tents have been supplied by the government and the city has started the erection of barracks in Golden Gate park to accommodate 15,000.

No Epidemic.

Although there has been considerable smallpox in the city for several months, only a few cases are now reported. Scarlet fever and typhoid fever have appeared among the refugees, but this is no epidemic. General Funston has ordered a large supply of vaccine virus, and 10,000 points were sent from Chicago on the relief train which started April 23.

Valuable Co-operation of Military Force.

Soldiers, sailors, marines and national guardsmen have been rushed into the city, but still there are not enough adequately to protect life and guard property. General Funston at once took command of the situation and co-operated with the local authorities in bringing order out of the chaos following the disaster. The United States General Hospital at the Presidio and the barracks were at once offered for the sick and injured, and the work of relief is being carried out under proper discipline and with military exactness. Tents have been sent from the various Army posts, and hundreds of thousands of rations have been furnished by the various commissaries.

Water and Sewers.

The water supply of the system was at first entirely cut off by breaks in the city mains, but now, by adjustment and repair, a daily supply of about 7,000,000 gallons is available. The sewer system is damaged to an unknown extent. The manholes in the streets have been screened and are used for water closets.

As practically all chimneys in the city are ruined, all cooking, even in the unburned section of the city, is done in the open air, on the streets.

Physicians Do Noble Work.

The medical profession of San Francisco, Oakland, Berkeley, and other cities have done noble and self-sacrificing rescue work and are now caring for the sick and injured with untiring zeal. Physicians have come in from neighboring cities, and at least two more distant cities have sent medical aid. Portland has sent 10 physicians, 20 nurses and large quantities of medical supplies, under the charge of Dr. Kenneth A. J. Mackenzie. Chicago sent 27 physicians, 75 nurses, and large quantities of disinfectants, medicines, dressings and invalid foods, on trains which should arrive there April 26. This party is sent by the American White Cross First Aid Association, under the auspices of the Citizens' Association of Chicago, and is in charge of Major P. J. H. Farrell, late U. S. V. and Captain Joseph B. Greene, late of the U. S. P. H. and M. H. Service, and includes Drs. F. W. Phelps, N. Reed, G. W. Mosher, J. D. C. Hill, Milton Mandel, Rex Brown, F. W. Alpin, J. S. Nagel, B. von Wedelstadt, George Ruben, Orville W. McMichael, F. G. Harris, Clyde D. Pence, Arthur Claggett, Joseph Replogle, J. C. Cowan, Edgar Lee, F. J. Otis, Thomas W. Lewis, W. H. Witherstine, D. A. Smalley and H. J. Haiselden.

A special train left Los Angeles for San Francisco April 19, with 75 physicians and nurses.

Medical Society of the State of California.

The society met for its fiftieth annual session in San Francisco, April 17. The program was unusually good and the attendance large. On the morning of April 18 a violent earthquake occurred, wrecking a large number of buildings, including the Y. M. C. A. building in which the meetings were being held. At 9:30 the same morning the president, Dr. Robert F. Rooney, the secretary, Dr. Philip Mills Jones, San Francisco, and Drs. H. Bert Ellis, Los Angeles, James H. Parkinson, Sacramento, and Fitch C. E. Mattison, Los Angeles, met in front of the wrecked building and declared the society adjourned sine die.

All records and files of the society are a total loss, but the accounts and funds are safe. The library of the San Francisco County Medical Society and its records are destroyed.

The Dead.

It is impossible as yet even to estimate the mortality, but our correspondent believes that the deaths will exceed 5,000. On April 24 a list of 277 dead was reported. The coroner of San Francisco County estimates the dead at 1,000.

Dr. J. C. Stinson was killed in the California Hotel by falling bricks, and Dr. Charles F. Taggart, Los Angeles, who had charge of a corps of nurses at the Crocker School Relief Hospital, died from a gunshot wound caused by his own revolver, which fell from his pocket and was discharged. These are so far the only deaths of physicians in the city.

Personal.

The president of the state society, Dr. Robert F. Rooney, Auburn, was at the Palace Hotel, but was obliged to leave, and went to the St. Francis Hotel, and was ordered out on account of the danger. His present whereabouts are unknown, but he is reported to be safe.——Dr. Philip Mills Jones and wife are safe in Oakland.——Dr. George H. Evans started for New York April 21 and reached Chicago April 24. ——Dr. Donald McC. Gedge has been made chief of the newly-organized vigilance committee, which has in charge the Golden Gate valley district near the Presidio.——Dr. William C. Voorsanger has been placed in charge of the committee on food supplies.

Effect at Quarantine Station.

Passed Assistant-Surgeon Hobdy reports that a moderate amount of damage was done by the recent earthquake at the San Francisco Quarantine Station, but that no one was injured. The service at quarantine will not be interrupted. Surgeon Sawtelle reports, in *Public Health and Marine Hospital Reports*, that all the Marine Hospital buildings are more or less damaged, though the hospital can still be used. No one was seriously injured at the station. As many injured citizens as can be accommodated are being admitted to the marine hospital, the city institutions being unable to care for the large number of the wounded. Dr. Sawtelle also states that the buildings in which the branch marine hospital was located in the city is entirely wrecked.

THE CALIFORNIA FUND.

Subscription List Opened for Relief of Physicians in Need.

As announced in the editorial columns, the Board of Trustees has authorized that the columns of THE JOURNAL be opened for subscriptions to a fund for the relief of those physicians of San Francisco and other points in California who have been left in destitute circumstances through the earthquake and fire. A local committee has been created in Chicago to have supervision of the fund in behalf of the American Medical Association. This committee consists of: Dr. Frank Billings, Treasurer of the American Medical Association, Chairman; Dr. M. L. Harris, Resident Trustee of the American Medical Association; Dr. C. S. Bacon, Chairman of the Section on Obstetrics and Diseases of Women, and President of the Chicago Medical Society; Dr. R. B. Preble, Chairman of the Chicago Medical Society Committee; Dr. George H. Simmons, Editor of THE JOURNAL of the American Medical Association.

The following telegram was received April 24 through Surgeon General O'Reilly of the United States Army:

To the Editor: About five hundred San Francisco physicians destitute, diplomas destroyed. Brave, resolute, still working like Trojans for fellowmen. Association should come handsomely to relief. Many will emigrate. All states should receive qualified without cruel restrictions. My subscription one hundred dollars.

KENNETH A. J. MACKENZIE.
Second Vice-President American Medical Association, in charge of Harbor View Hospital for contagious diseases

The following letter was received April 23:

To the Editor:—I would suggest that the American Medical Association appeal to the physicians of the United States for financial assistance in order to aid physicians in San Francisco, who have lost all they possessed in the recent horrible disaster. A committee of physicians living in San Francisco could be appointed to carry out any or all suggestions made by the A. M. A. I gladly send my check for $2, and trust the fund will rapidly grow.

Rochester, N. Y. W. D. WOLFF, M.D.

Subscriptions are solicited from those who feel able to give. Make checks payable to the American Medical Association, marking the check "California Fund." Also mark envelope in lower left-hand corner, "California Fund." An acknowledgment will be made in THE JOURNAL of each contribution. Local or county societies that wish to make a contribution as a body and prefer to send it through the American Medical Association Fund, may do so and credit will be given to the society and the names of the individual contributors will also be printed.

The following contributions have been received:

INDIVIDUAL CONTRIBUTIONS.

T. J. Happel, Trenton, Tenn.	$ 5.00
Kenneth A. J. Mackenzie, Portland, Ore.	100.00
Phillip Marvel, Atlantic City, N. J.	50.00
Lewis S. McMurtry, President American Medical Association, Louisville, Ky.	100.00
E. E. Montgomery, Philadelphia	25.00
Miles F. Porter, Fort Wayne, Ind.	10.00
William H. Welch, Baltimore	25.00
W. D. Wolff, Rochester, N. Y.	2.00
A. L. Wright, Carroll, Iowa	25.00
Total	$312.00

CHICAGO MEDICAL SOCIETY CONTRIBUTIONS.

The following amounts were received through the committee appointed by the Chicago Medical Society:

Adolphus, Phillip	$10.00	Harris, M. L.	$25.00
Bacon, C. S.	25.00	Hecht D'Orsay	10.00
Banga, Henry	25.00	Holz, P. C.	25.00
Bann, W. L.	50.00	Jackson, Thomas J.	5.00
Bailey, E. F.	2.00	Kahlke, Charles F.	15.00
Beard, Charles H.	5.00	Kerr, J. Norman	5.00
Blayney, F. H.	5.00	Kleene, F.	5.00
Billings, Frank	100.00	Leenheer, C. A.	2.00
Broell, A. C.	10.00	Linnell, R. M.	5.00
Brown, Heman H.	10.00	McGaire, J. W.	10.00
Brown, Richard H.	10.00	Miller, R. B.	5.00
Burroughs, W. M.	2.00	Monash, D. F.	5.00
Campbell, James T.	10.00	Morf, Paul	5.00
Carter, J. M. G.	5.00	Murphy, John B.	100.00
Chamberlain, George M.	100.00	Nelson, Daniel T.	5.00
Coleman, W. F.	5.00	Noble, W. L.	5.00
Danforth, L. N.	25.00	Oyen, A. B.	5.00
Deming, H. H.	10.00	Paddock, Charles E.	10.00
Elliott, Arthur	5.00	Patton, J. Allen	5.00
Frankenstein, V. S.	5.00	Perekhan, J. S.	2.00
Frick, Anderson	10.00	Peterson, Herman D.	5.00
Futterer, Gustav	25.00	Physicians' Club	100.00
Gilmore, Robert T.	25.00	Plecker, J. N.	5.00
Gorgas, L. D.	5.00	Preble, Robert B.	25.00
Gray, Ethan A.	10.00	Riebel, E. F.	5.00
Hardie, T. Melville	10.00	Shambaugh, George S.	5.00
Simmons, George H.	$25.00	Wescott, Cassius D.	$10.00
Slaymaker, S. R.	5.00	Wheaton, Clarence L.	5.00
Snydacker, E. F.	5.00	Wiener, Alex. C.	5.00
Sopet, Alex. C.	25.00	Wilder, W. H.	10.00
Spaulding, D. N.	5.00	Will, H. C.	2.00
Talbot, Eugene S.	20.00	Wood, Allport and Woodruff	100.00
Watkins, Thomas J.	25.00	Zeisler, Joseph	25.00
Wellington, R. H.	3.00		
Total			$1,023.00
Grand total			1,365.00

GENERAL.

Plague in the Philippines.—Dr. J. M. Banister, U. S. A., in an article on "Medical and Surgical Observations in the Philippines," in the *Journal of the Association of Military Surgeons*, states that bubonic plague is a disease of which the medical officer in the Philippines has little fear. It is practically confined to certain districts in Manila and attacks chiefly Chinese and natives. A Caucasian is seldom attacked. Dr. Banister states that since the American occupancy he has been able to discover only three soldiers who have fallen victims to this disease.

Health Report of the Philippines for November.—During the month 820 births were registered in Manila; this represents a birth rate of 45.38 per 1,000. During the same period 988 deaths were registered. The number of deaths among children under 30 days and between 30 days and 1 year of age reached 527, representing 53.34 per cent. of the total number of deaths; the same shows a slight increase compared with the number of deaths, 468, occurring at the same ages during the preceding month. This difference against November can be attributed to the lowered temperature during various days of the month, which, although it may not have affected the health of robust and well-cared-for children, had a distinctly harmful influence on those who were weak and improperly fed and unprotected. The report contains a warning that the cool nights are particularly favorable to colds, which lead to bronchopneumonia and kindred troubles, and that chilling of the abdomen is a common predisposing cause of bowel troubles among both children and adults. There were only 18 cases of cholera during November, a decrease of 50 per cent. The health department has followed the infection from center to center, isolating the sick, and taking every possible precaution against the further dissemination of the disease. One hundred and thirty five thousand units of vaccine virus were distributed during the month among the 16 provinces of the archipelago.

CANADA.

Branch of British Medical in New Brunswick.—The St. John (N. B.) Branch of the British Medical Association has been organized with Dr. Murray MacLaren as provisional chairman and Dr. J. H. Scammell as secretary. Twenty practitioners in that city signified their intention of becoming members. The other branches of the British Medical Association in Canada are the Halifax, Montreal and Toronto branches.

Hospital News.—Some difficulty is being experienced in getting the bill regarding the Toronto General Hospital through the Ontario legislature, owing to the fact that there is a strong opposition to the clause which states that only the medical students of Toronto University shall have clinical privileges in this hospital. As McMaster University, a Baptist institution, has some ambition to embark on medical education, having gone so far as to make an offer for a fine site for a building, in the vicinity of their university, it is felt by some of the legislators that this privilege of clinical instruction should not be exclusive. In all likelihood the clause will be amended to provide for other students as well as those of Toronto University, availing themselves of the privileges of the hospital.——Grace Hospital, Toronto, at one time a homeopathic hospital, but now a general hospital, will shortly erect a substantial addition at a cost of $200,000. It will provide for an additional 100 patients. This hospital has a staff of 45 doctors and 35 nurses.——The Victoria Hospital for Sick Children, Toronto, will receive $2,000. The famous bribery money handed into court three years ago, when the notorious Causey political investigation was in process of ventilation, has been disposed of in this way.——The Toronto Western Hospital will erect two large additional wards for charity patients, with accommodation for 100 patients.——Winnipeg General Hospital treated 348 patients during the week ending April 14, 201 being men, 99 women and 48 children.——A new general hospital was opened at Moosejaw, Sask., on April 17.——The Vancouver General

Hospital is seeking a new medical superintendent, Dr. Robertson having resigned to enter private practice. The Vancouver Medical Society has forwarded to the board of trustees a recommendation that only a registered practitioner of British Columbia be appointed.——New Westminster, B. C., will erect a new $50,000 hospital, toward which the provincial government of British Columbia has contributed $15,000.

FOREIGN.

Fifth International Antituberculosis Conference.—The central committee of the society in the Netherlands organized for war against tuberculosis has invited the authorities to hold the international tuberculosis conference for this year at The Hague in September.

Homeopathy and Regular Medicine in Germany.—The federation of medical societies in Germany, known as the *Deutscher Aerztevereinsbund*, was recently asked to admit the Association of Homeopathic Physicians. The federation formally declined, stating that homeopathy is the negation of medical science.

Association of Medical Legislators. There are always a large number of medical men elected to the French national legislature. About twelve years ago they organized an extraparliamentary association for discussion of matters especially affecting the public health and the sociologic aspects of medicine. Italy has followed with the organization of a similar group and the physicians in the British house of commons have just taken a similar step.

Treatment of Seasickness.—F. Wolf, the German explorer, says that very hot compresses applied to the brow and constantly renewed will relieve and cure seasickness almost without fail. The patient must lie still, eat nothing except, possibly, unsweetened tea and toast. An hour or so of the hot applications to the brow have always cured in the severest cases of seasickness in his experience, even in the stormiest weather.

Honors to Americans.—At the formal session of the Royal-Imperial Medical Society of Vienna, Austria, on March 30, honorary membership was conferred on Nicholas Senn of Chicago, W. H. Welch of Baltimore and O. Schmiedberg of Strasburg. Six corresponding members in this country were appointed: J. J. Abel and John C. Hemmeter of Baltimore, C. Herter, L. Emmett Holt and Graham Lusk of New York, and J. Loeb of the University of California. The official title of the society is the Königliche-Kaiserliche Gesellschaft der Aerzte in Wien.

His to Take Ebstein's Place.—Wilhelm Ebstein retires from the chair of medicine at Göttingen this spring, and W. His of Basle has been invited to take his place. Ebstein will be 70 years old next November. The list of his important publications is a long one and includes a number showing great historical research. Among the latter is one on the "Plague of Thucydides." His "Manual of Practice of Medicine" has passed through numerous editions since first published in 1899. His name is especially connected with diabetes, leukemia and gout. Wilhelm His is 43 years of age at present, and was assistant to Curschmann at Leipsic until called to Basle. He has published works on gout, on the embryonal heart and the development of the cardiac nerves in the vertebrates. One of his most recent communications was a study of pleural and other effusions.

Fifteenth International Medical Congress.—This international gathering of physicians and surgeons was formally opened at Lisbon, April 19, by the king of Portugal. Each civilized country had sent delegates, and more than 250 men of international fame had been invited to deliver the official addresses on 140 of the vital medical topics of the day, and nearly all had accepted and were present on the opening day. Nicholas Senn's address on the "International Study of Carcinoma," published elsewhere in this issue, was delivered at one of the five general assemblies. He proposed to offer a prize of $1,000 for research on carcinoma. The delegates appointed by the German government were Quincke, Curschmann, von Behring, Neisser, Loeffler, Garré, Verworn, Heller, Rubner and Posner. The army was further represented by Kern, the navy by Elste and Martini. France and Great Britain sent equally representative delegations. The American delegation was mentioned recently on page 1044.

Death of Professor Curie of Paris.—The cable brings word that the great chemist who shared with his wife the honor of the discovery of radium, was run over by a dray in the streets April 19. The story of his life has been often told: his marriage to the young Polish woman who was such an ardent student in the laboratory for physical research in his charge, their six years of research together on the uranic radiation discovered by Becquerel, terminating in their announcement in 1898 of the discovery of the new substance, radium, which shook the foundations of some of the most fundamental scientific theories, including the atomic theory and that of the conservation of energy. The Nobel prize for scientific research was awarded to them in 1903, and the Osiris prize of $12,000 was later given to Mme. Curie. Professor Curie was convinced that all the wonderful properties of radium have not yet been learned, and he and his wife were still deeply engrossed in its study. His shrinking from publicity was so great that he seldom accepted any of the numerous invitations to lecture which came to him, and he was a poor speaker. The cable dispatch says that the premature death of this simple-lived, retiring scientist before he had completed his research on the possibilities of radium may be an event of greater actual importance to humanity than the horrors of earthquake and fire. Nothing is known at this moment of the special research on which he was engaged at the time of his death, but his mental absorption in it may have been in part the cause of the fatal accident. He leaves a daughter 8 years old.

August Bier.—Few names have been mentioned more frequently in our columns during the last year or so than that of Professor August Bier of Bonn. He has led the way into new fields where few, if any, had preceded him, and no one mentions spinal analgesia, or the application of superheated air or artificial passive congestion in therapeutics without some reference to Bier's pioneer work. His latest revolutionary announcements in regard to the importance of artificial hyperemia or passive congestion as an aid in the treatment of acute inflammations have attracted world-wide attention. As recently mentioned, he has been awarded the newly-founded Kussmaul prize. On this occasion the *Muenchener med. Wochft.* published an excellent portrait of him which we herewith reproduce. Much of his training was received under Esmarch. He is now 45 years of age. Summaries of his communications are scattered through the last volumes of The Journal. In vol. XLI, on page 68, paragraph 146, and in vol. XLII, on page 807, paragraph 81, will be found summaries of his communications in regard to hyperemia as a curative measure. On page 1260 of vol. XLII his pioneer work on spinal analgesia is reviewed. His more recent announcements in regard to the value of passive congestion in treatment of acute inflammations were reviewed on pages 914 and 1075 of vol. XLIV, and also on page 1206 of vol. XLV. See also page 1524, paragraph 48, in this issue.

AUGUST BIER.

Escape of Miners Buried for Twenty Days at Courrieres.—The *Presse Médicale* states that thirteen of the miners were rescued after having been buried in the mine for twenty days, and another miner was found alive five days later. The thirteen miners were together and managed to keep alive by eating oats, bark and rotten meat, the only edibles within their reach. Their survival in the toxic gases of the mines, without light and almost without air, subsisting on rotten meat, quenching their thirst with urine, defies scientific theories. Besides their endurance and resistance, the spirit of discipline and comradeship which they displayed was equally remarkable as they wandered around in the closed subterranean galleries of the mine, crowded with the corpses of their mates. The Paris *Tribune Médicale* is preaching the necessity for supplies of oxygen to be kept on hand in mines and in submarine boats, etc. All the survivors testified to the fact that the air in the mine was absolutely irrespirable only during the first few hours after the explosion. If there had been a supply of oxygen to have tided them over the first few hours, hundreds more might have been saved. The editorial states that the hygiene of mines should be entrusted to medical men, to physicians trained in physiology and hygiene. The mechanical mining engineer has charge of the mechanical part of the business, but medical skill should guide the exploitation of the human motor. Whenever an explosion has taken place it is generally

learned that the air had been impregnated with firedamp for some time. It frequently happens that the air in a mine is at times so loaded with firedamp that only a spark is needed to produce an explosion. The absence of the spark prevents any trouble. The editorial urges that three samples of air should be taken at a time, three times a day. One sample should be tested, and one sample be kept by the officers of the mine, and the other sample by a delegate from the miners. In this way it would be possible to detect increasing contamination of the air, and, in case of an explosion, to place the responsibility where it belongs. Then, if any explosion occurs, the survivors should have supplies of oxygen within reach at different points in the mine. (See editorial in this issue, p. 1289.)

The Lost Lambs of Medicine.—The *Progrès Médical* of Paris and some other medical journals occasionally devote space to interviews with more or less prominent people who began life as physicians, or at least completed their medical course, but were then diverted into other fields. All express great appreciation of the remarkable aid their medical training has proved in their later life-work. Writers especially have found it of great benefit. The latest sketches of the kind are of the director of a Paris theater and of a member of the Comédie Française. The latter, Dr. Paul Mounet, remarked in the course of his interview, that the medical course is the most difficult of all, but it prepares for anything and everything.

Comparative Study of Tropical Hygiene.—The *Semaine Médicale* for April 11 contains an article by a French navy surgeon, Dr. Gloaguen, who has been cruising in the waters along the eastern coast of Africa, making a special study of the medical conditions in the various English, German and French colonies. He says that he was surprised to find that the British are behind the Germans in the matter of making and keeping their possessions healthy. The English fall back on their egotism and individual hygiene; the Germans on their inflexible militarism, and the French on their proverbial heedlessness. The English conception of prophylaxis is very simple. It is based on two things: entire separation of the native and the European villages, and strict application of the principles of private hygiene. The English lead an active life, with athletics, etc., to keep mind and body in a healthy condition; they reside in comfortable cottages, but they make no effort to render the country healthier and improve the sanitary conditions of the natives. There is no attempt at a general plan of campaign against tropical diseases. The native quarters are left in their filth and fall an easy prey to diseases. Plague is installed in nearly all the British colonies on the Indian ocean, and with the exception of Isle Maurice, no satisfactory measures have been taken even against malaria. The Germans, on the other hand, have undertaken the task of exterminating disease among the natives and Europeans alike. The same sanitary measures are enforced in the native as in the European quarters. Hospitals are being organized at the main points, and the country is divided into districts, each in charge of an agent empowered to enforce the sanitary regulations. Medical stations are organized along the caravan routes, and the natives are examined and registered and given certificates. Laboratories are numerous. The streets in the native quarters have been made wide and airy and are kept clean. The garbage is carted away daily instead of being allowed to accumulate around the houses as in the English and other colonies. Standing waters are drained or oiled. The French are now trying to introduce some semblance of the German measures into their colonies and with some success. Quinin prophylaxis has been introduced by the Germans on an extensive scale at Dar Es-Salaam. The native quarter is divided into 22 precincts, and they are visited by trained men and women, who obtain blood for bacteriologic examination. In 1897 between 50 and 60 per cent. of the Europeans had malaria. The antimalaria campaign was commenced in 1901, and in two years the number of cases of malaria among the Europeans had dropped to 10 per cent. with no mortality. Scarcely one in a thousand of the natives now harbors the malaria parasite, and the results are considered a brilliant success. Gloaguen prefaced his article with the statement that wherever he went in the French colonies he constantly heard the complaint: "If only this country belonged to England, it would have been made healthy long ago." In his criticisms he overlooks the British idea in regard to governing colonies. The general aim of the British is to make the yoke light and to disturb the native habits and customs as little as possible. Their ideal is education, principally by example.

Correspondence

The Death of Dr. Stinson at San Francisco.

CHICAGO, April 24, 1906.

To the Editor:—The Dr. Stinson who was one of the first victims of the San Francisco horror was the author of the automobile article in your last issue. At the time I addressed the San Francisco County Medical Society last July I was the recipient of exceptional courtesy at his hands. An hour after my arrival he was at my hotel with the car he describes and his experienced chauffeur. He insisted that I make use of his car during the few days I was in San Francisco as if it were my own. He asserted kindly and positively that he needed exercise and would walk.

Many members of the American Medical Association who were visiting San Francisco directly after the Portland session will now recall, with a saddened interest, the delightful excursions to the Presidio and Golden Gate Park which Dr. Stinson's extreme courtesy made it possible for them to make with me. I am informed by his friends that the walls of the California Hotel fell on him while he was asleep and killed him instantly. He was a brilliant practitioner, a successful surgeon, and his death will mean much to many of the first families of San Francisco. He was a stranger to me when I arrived in California, but his hospitality was so genuine and sincere that his sudden taking off is in the nature of a personal bereavement. DENSLOW LEWIS.

Need for Additional Nomenclature.

NEW YORK, April 21, 1906.

To the Editor:—Permit me to say to Dr. Thomas G. Atkinson's proposition under the above heading in THE JOURNAL, April 21, that wherever additional nomenclature is needed we should not accept terms like Dr. Atkinson's hematfecia and pyofecia; our onomatology is disfigured already by such monstrosities and needs reform instead of new horrors. A. ROSE.

Warns Against Alleged Impostor.

NEW YORK, April 20, 1906.

To the Editor:—A physician calling himself "Dr. Ernest Sachs" is traveling about the country as an agent of "The Swiss Goat-Lymph Serum Compound," recommending its use in the treatment of locomotor ataxia and other nervous diseases. He claims to be a brother of mine and is using my name in order to palm off this serum on a credulous public. I wish to state that the man is no relative of mine, that I do not know him, and that those who know me will not need to be told that I am not one of those likely to recommend "goat-lymph serums" or any other similar remedies (?). I have every reason to believe that the man is an impostor. He claims to have been connected formerly with the German Hospital in New York City, and I understand that at that institution his name is entirely unknown.

B. SACHS, M.D.

Medical Men in Congress.

WASHINGTON, D. C., April 21, 1906.

To the Editor:—An item with the above title appears in the last issue of THE JOURNAL, April 21, under the head of "Medical Legislation." The author may not have intended to name therein all the medical men who are at present members of the Fifty ninth Congress, in which event he succeeded; it it was intended to include them all, and this might be inferred from the title, the person who prepared the article was rather careless or did not have access to the Congressional Directory. In the last thirty years there has scarcely been a congress without more or less medical men, some having retired from active practice long before entering congress, while many have gone from the active practice of their profession to the highest legislative body in the land.

One of the latter class—and he is not mentioned in this article—is Edmund William Samuel, M.D., of the sixteenth

istrict of Pennsylvania. A part of his biography, which may e found in the Congressional Directory, is as follows:

"Edmund William Samuel, M.D., Republican, of Mount Carmel, was born Nov. 27, 1857, in England; at the age of 2 ears moved with his parents to Ashland, Pa.; at 8 years he as employed as a slate picker in a coal breaker, worked bout the coal mines in summer and attended the public hools in winter. He entered Jefferson Medical College in 878, at Philadelphia, and graduated therefrom March 13, 880; the same year began the practice of medicine, which he as followed continuously to the present time."

Drs. Burton, Barchfield and Samuel (Regulars) are members f the House, going directly from active practice to this body, his being their first term. John Wesley Gains, sixth district f Tennessee, graduated in medicine from the University of Tashville and Vanderbilt University in 1882, and immediately egan the study of law; he never practiced.

Dr. Gallinger (Homeopath), the medical member of the enate, has not been in active practice for many years.

More of the members of the Fifty-ninth Congress may be raduates of medicine, but I am unable to trace them.

W. F. Wagner, M.D.

The N. S. Davis Memorial.

Boston, April 23, 1906.

To the Editor:—I am sure your readers will be glad to now, through the columns of The Journal, something of he progress which is being made by their committee in the aising of funds for some suitable memorial to the late Dr. N. S. Davis of Chicago.

I am delighted to report that the committees from each of he several states have already taken up the work with enhusiasm. It is the purpose of your committee to make this novement in honor of the founder of our great Association n especial honor and privilege to every member. The sum of 25 cents each would aggregate a total ample for this purpose, and your committee feels that such universal remembrance would be an honor and a privilege to every one of the great army of over 100,000 physicians to be sharers. It is he desire of your committee that the contributions shall be small from the many rather than large from the few. It s preferred that these contributions be sent through the state committees, but any one who desires to contribute for this purpose directly to me will receive proper acknowledgment herefor.

Henry O. Marcy, Chairman.

180 Commonwealth Avenue.

Association News

Transportation.

The railroad rates to the Boston session from the eastern half of the country will be one fare, plus $1.00, for the round trip. In the Trans-Continental Passenger Association territory the rate will be about a fare and one-third to Chicago, Minneapolis, New Orleans and St. Louis, and from these points on to Boston the rate above mentioned. The southern passenger associations are yet to be heard from, but they will probably make the same rate of one fare, plus $1.00, for the round trip. A more detailed announcement will be given in The Journal May 5.

Hotels in Boston.

A list of the hotels and headquarters in Boston, with the cost of rooms, was given in The Journal, April 7, page 1046, and this list will reappear next week, May 5, in the special Boston Number. The committee on hotels states that members of the Association are still writing them for information which is contained in this announcement and we, therefore, call attention to the list. Last week, April 21, supplementary announcement concerning the boarding places was given.

The Boston Number.

The issue of The Journal, May 5, will be the Boston Number, containing a specially written article concerning its historical points and the special medical opportunities. This article will be liberally illustrated with fine pictures. There will also be preliminary programs of the general meetings and sections, list of hotels and headquarters, particulars of railroad rates, excursions, entertainments, and all possible other information. The indications are that there will be a very large attendance.

Second Annual Conference of Council on Medical Education.

The second annual conference of the Council on Medical Education of the American Medical Association will be held at the Auditorium Hotel, Chicago, May 12, 1906. There will be two sessions, beginning at 10 o'clock and 2 o'clock. A large delegation is expected, representing state examining boards, government medical services, medical college associations, colleges of liberal arts, and teachers' associations. Besides the report of the year's work by the council, the program will consist of addresses from prominent educators and others. The subjects of preliminary educational requirements, the granting of advanced standing for work done in colleges of liberal arts, and what constitutes a proper medical curriculum will be discussed.

Miscellany

FRAUDULENT USE OF THE MAILS.

Another Pseudo-Medical Company Is Debarred by the Government from Use of the Mails.

The postoffice department is continually investigating fraudulent companies which use the United States mails to further their schemes. Whenever the business of a concern is shown to be fraudulent the firm is forbidden the use of the mails. Many of these companies are medical, reports in regard to some of which we have already published. This week we give space to the report of the investigation of the Nutriola Company, made by R. P. Goodwin, assistant attorney general for the postoffice department. In accordance with this report a fraud order was issued Nov. 24, 1905, debarring the Nutriola company from the use of the mails. From this report we quote as follows:

The Nutriola Company is a Maine corporation, organized about 1894, with authorized capital stock of $150,000, divided into 150,000 shares of the par value of $1 each. The capital stock has since been increased to $500,000. Edward F. Hanson is the promoter of this scheme, with principal offices at 142 to 148 West Madison Street, and branch office at 130 Dearborn Street, Chicago, Illinois. The principal business of the company is that of selling its stock on the installment plan to small investors throughout the country; its ostensible business is the manufacture and sale of certain medical preparations known as "Nutriola" and "Nutriola Preparations." The mail is the principal instrumentality used in the conduct of the business, and practically all of the stock that has been disposed of has been sold through that medium. The sale of stock has been accomplished by advertisements, and the dissemination of various pamphlets and circulars through the mail.

I have examined and considered very carefully the report of the inspectors, giving the result of their investigation of this matter, together with the papers submitted therewith; the written statements and briefs of the attorneys for the company, and the matters adduced in the oral argument of its counsel; the reports of the department of agriculture as to the therapeutic qualities of the medicine of the company, and the other circumstances and facts disclosed in the case, and am convinced that the sale of capital stock of this company has been, and is being accomplished through the mails as a result of misrepresentation and deceit. The reasons for this conclusion are stated below:

1. One of the principal arguments made by the company to induce the purchase of its stock is that investors will secure

an interest in a company which will earn tremendous profits by reason of the fact that the medicines sold by it are new and wonderful, and that they were only discovered after years of study and research, made by the most skilled chemists and physicians, whom the company had employed, and after the expenditure by the company for such expenses of over $50,000 in cash. The representation that the formulas for these medicines were only discovered by the company after the expenditure of over $50,000 in cash I find is false and unwarranted. In a pamphlet used by the company for the promotion of the sale of its stock, and entitled, "Health, How Gained and How Retained," on the third page appears this statement:

"THE TRIUMPH OF PHYSIOLOGY AND CHEMISTRY.

"For nearly ten years our Chemists—aided by the best physicians in the U. S.—worked with these facts ever before them. Worked to aid nature by creating perfect Digestion and perfect Assimilation. By increasing the army of Leucocytes and giving them strength to destroy all disease germs, by supplying Nature power for perfect Elimination of Dead diseased matter. By supplying constructive material to make Red Blood Corpuscles from which Nature could draw material to replace every warnout and diseased cell, thus making *the body new all over.*

"*Cost us $50,000 cash.*

"It was a great undertaking, worthy of the age. It cost us $50,000.00 cash, but *we succeeded,* and to the world we give the greatest Chemical-Medical Preparation ever prepared by the skill of man. It's Nature's right arm of power. We named it *Nutriola,* and we emphatically state that *Nutriola and Nature are the only invincible conquerors of disease ever known.*"

Some of the circumstances and facts which satisfy me of the falsity of this representation are as follows:

Mr. Hanson was asked this question by the inspectors:

"Q. It is noted in your literature that you have expended something like $50,000, or a large sum of money for experimenting and perfecting the Nutriola remedies. A. The amount stated in our literature should be approximately $40,000, and it covers the entire formative and experimental period during which preparations were prepared in various forms. The company advertised for so-called incurable cases, supplying treatment free, where necessary employing physicians to give the remedies and watch the results. Among these physicians was Dr. L. W. Hammons, city physician of the City of Belfast, Maine; Dr. McCurdy, of Searsmont, Maine, now deceased; Dr. Hitchcock, of Rockland, Maine; Dr. Lace, of Boston; Professor E. L. Patch, of Stoneham, Massachusetts, was the chemist who prepared the Nutriola Ointment known as Skin Food, and under whose supervision every particle offered for sale is now made. Dr. Stockwell, Parke, Davis & Company's leading chemist, rendered valuable assistance. The amount paid the chemists I am unable to state, as I have no record or vouchers therefor, and the original books of the company were burned in the fire in 1895 or 1900, with all papers and vouchers. Q. Please name the chemists who now manufacture the remedies of the Nutriola Company. A. Parke, David & Company, Detroit; E. L. Patch Manufacturing Company, Stoneham, Massachusetts; Seabury & Johnson, New York."

Regarding these statements of Mr. Hanson, the inspectors report:

"The proposition that it cost $50,000 for the services of chemists and physicians in the making of this discovery is explained and modified by Mr. Hanson on page 3 of his statement.

"It might be mentioned that Professor Patch, of Stoneham, Mass., is presumed to be connected with the manufacturing chemists firm of E. L. Patch & Company, Stoneham, Mass. Dr. Stockwell is the chemist of Parke, Davis & Company, also manufacturing chemists. It is commonly known that large manufacturing chemical houses have always in their employ erudite and competent chemists who render their services and advice free to patrons of the house in the matter of suggesting desirable formulæ for proprietary medicines, which are subsequently to be manufactured at a profit to them."

The representation of the company is that as the result of the expenditure of this $50,000 it has discovered certain preparations which are new and not known to the medical world, and which possess wonderful curative properties. For report as to the therapeutic qualities of these medicines and to ascertain if there was anything new or wonderful about them, samples of the same were submitted to the department of agriculture. The formulæ for the medicines were later secured from the company and also submitted to that department for its consideration in connection with its analysis of the medicines. The report of the department of agriculture, dated Oct. 13, 1905, has been received, and I quote from it as follows:

"From a careful investigation of the formulæ submitted, the chemical analyses made and the advertising literature, I am led to the following conclusions.

"1st. There is nothing new or wonderful in the agents used in the preparation of the several remedies. All of them have been in use for many years, excepting 'Phytiline' 'Sicklenceen' and 'Ferrum Aceline' No reference in literature to either 'Phytiline' or 'Sicklenceen' could be found, and I believe they are either misspelled words or 'blinds.' 'Ferrum Aceline' may be used by this firm in the treatment of disease, but no medical authority recognizes it as a therapeutic agent.

"2nd. The proportions used of the various agents in the several mixtures are withheld, but even so, it may be safely stated that there is nothing particularly new in the combinations of the various ingredients, the forms of the combinations or methods of combination. They differ no more from other similar combinations than one physician's prescription differs from that of another, using the same or similar active constituents, or the procedure of one pharmacist in filling a prescription differs from that of another pharmacist.

"3rd. Remedies prepared according to the formulæ which are submitted by the Nutriola Company, as the ones used in the manufacture of its remedies, are well known and useful combinations employed in the treatment of diseases.

"4th. The Company makes numerous exaggerated and misleading statements relative to the efficiency of these remedies in various parts of its advertising literature, some of which can not possibly be construed as coming within the domain of privileged business methods. It is believed that fraud would be imputed by the court, to many of the assertions, if brought to an issue.

"There is certainly nothing in any one, or all of the mixtures combined, which would warrant the claim of this firm to be able to cure 'cancer, rupture, stricture, etc., without pain or knife.'

This report of the department of agriculture, of itself, is convincing evidence of the falsity of the representation that this company has expended over $50,000 in discovering these medicines. . . .

The failure of the company to offer any evidence whatever of the truth of this representation, despite the opportunities which have been given it to do so, indicates clearly that the company has no such proof to submit. Surely, if it be true that for years this company employed the most skilled chemists and the best physicians of the country to work on these formulas, and expended over $50,000 in cash for this purpose, full and satisfactory evidence of that fact would be available and would be promptly adduced. On the contrary, the company makes no attempt to show that this representation is true, and beyond the simple averment that the "statement as to the work of chemists, etc., is true," seeks to dismiss the matter with the mere statement that "the expenditure may not have been as great as indicated." But even though this fact itself satisfies me of the falsity of this representation, the report of the department of agriculture as to the character of these preparations indicates plainly that the representation is not true. The analyses of these medicines and the formulas therefor disclose that these medicines are commonly and well-known to the medical profession, and that there is nothing whatever about them that is new or unusual. In the light of these analyses, the falsity of this representation is apparent. The suggestion of the inspectors that these medicines were prepared for this company by the chemists of Parke, Davis & Company and E. L. Patch Mfg. Company, well-known manufacturing chemists, under the commonly known practice of these houses of furnishing such formulas free to persons proposing to commence a medicine business, in consideration that the supplies be purchased from said houses, is shown to be undoubtedly correct by the report of the department of agriculture as to the character of the medicines, and especially by the fact that Mr. Hanson is unable to name any other chemist who worked on the formulas other than the chemists of these two houses, which are now manufacturing these medicines. . . .

2. In connection with the representation above noted, the company pretends that its medicines are new, that they are of a character different from anything now known to the medical world, and that they possess superior and wonderful curative properties, and that therefore the medicines of the company will create a large demand, with the result that the stock of the company will earn large profits. The representation that these medicines are new and wonderful permeate the entire literature of the company. The representation that the formulas cost $50,000, is used for the purpose of creating such impression. The impression is also created by such statements as the following:

In the pamphlet styled "Nutriola Nature's Power The Fountain of Life," at page 10, references are made to the present system of medicine in a way to lead the reader to believe that this concern has discovered something new, differing from the present methods employed in the practice of medicine, and has discovered something new and different from the present medicines. On page 12 of this same booklet it is pretended that "Nutriola and Nature are the only invincible conquerors of disease."

On page 16 of this same pamphlet, after representing that only temporary relief can be afforded patients by the methods at present known in the practice of medicine, the literature pretends that the relief secured by using Nutriola is something entirely different from the temporary relief which is all that medicine up to the present time has been able to give and that by the use of Nutriola the system is made "new all over."

On page 18 of this same booklet, referring to a depleted condition of the nervous system, the representation is made that "the old young man will find in Nutriola the only restorer of life, vigor and health. . . . There has been no permanent health for this class until Nutriola was discovered. . . . Nutriola will do for this class when used in connection with our special treatment what nothing else on earth can do."

On page 20 of this same pamphlet, under the heading "Nature and Chemistry," the impression is clearly conveyed that in Nutriola Preparations, a discovery has been made of something new and wonderful, that possesses unusual and powerful curative properties. Especially is this true of the following statement made in that article: "It is no marvel when you understand it; it is simply the result of supplying Nature material that she could use. It costs thousands and thousands of dollars, years of experimentation, testing and treating of disease in whatever form, studying the action of certain combinations of chemical-medicinal properties before the perfect combination known as Nutriola could be ready to go forth in its mission to the world."

On pages 21 and 22 of this same pamphlet, the literature referring to the conditions of motherhood, the idea is clearly sought to be established that Nutriola is a discovery of something new and wonderful. Especially is this true of the statement that "Could we take the future mothers of the world understand that there is *now* no need of bearing sickly children, what a step would be made toward banishing sickness and suffering. How proudly would dawn the morning for future generations."

On page 26 of this same pamphlet the difference between Nutriola and the medicines now known to the medical world is stated in this emphatic language:

"Have you passed the candle era? Do you prefer the electric light or even a good gas-jet or, if no better, an oil lamp, to a tallow dip? Would not think of ignoring modern improvements and going back to the tallow candle, would you? Did you ever stop to think that when candles were the best light, doctors prescribed the same drugs and gave the sick practically the same treatment as to-day? The results were the same, too. Nutriola is as far in advance of all other preparations for the relief and cure of mankind as the electric light is in advance of the tallow candle. Forget it not. *Forget it not.* Some day it will be worth everything to you to remember it."

[We omit the remainder of the quotation to the same effect.]

That the effect of all these references, statements and processes is to create the impression in the mind of the reader that the medicines of this company are new and wonderful is positively shown by the fact that the inspector addressed inquiries to a number of investors in this company, wherein this question was asked:

"Please state whether statements in circular matter received by you to the general effect that thousands of dollars had been spent in experimenting to discover and perfect Nutriola remedies, that they were new and never known before, that they were specifics and cures for many stated diseases, and that for these reasons so large a demand for them would be made that the stock of the company would increase many fold in value, and pay large dividends at an early date, was or was not the inducing cause that led to your investing in stock."

The answers received are herewith. They are in the affirmative and show that they invested in this company by reason of their reliance on such impression obtained by them from the literature of the company. . . .

To determine whether there is anything new or wonderful about the medicines and preparations of this company, samples of the medicines in question, and formulas therefor, were obtained and submitted to the department of agriculture. The report of the department of agriculture, giving the results of its investigations, has been quoted above in connection with the representation that $50,000 was expended in the discovering of these formulas. This report shows that there is absolutely nothing about these medicines which in any way warrants the representation that they are new or different from the medicines now known to and commonly used by the medical profession.

The attempt of this company, therefore, to impress proposed purchasers of its stock with the idea that its preparations are new and wonderful is misleading, deceptive and fraudulent. While some of the literature in question is couched in the form of alleged expressions of opinion, but are simply made to prospective purchasers of stock, who are uninformed, and who rely upon the superior knowledge and information of the company as to the quality and character of the medicines, with the intent that such parties shall rely on such statements and be deceived thereby, and be thus influenced to purchase this stock, which they would not otherwise buy.

3. Throughout the literature of this company, used by it to promote the sale of its stock, alluring and unwarranted prospects of enormous profits are held forth, while at the same time the true condition of the company's business is concealed. If the true condition of the business were known, it would have a material effect on the glittering prospects and promises of large returns. In this way the company has induced purchases of its stock, which would not be made if the real facts and conditions were thoroughly understood and truthfully represented.

[Part of the remainder of the report included under this third heading is omitted, not being of medical interest. It quotes the extravagant promises of the company's literature, analyzes the actual financial condition and the possibilities of the business, based on the history of the company and its development thus far, and concludes as follows:]

This literature is sent broadcast over the country, and it is calculated to induce remittances, which would not otherwise be made, except for the very confident manner in which the prospects of great returns are set forth, and especially is this true of the class of people to which such matter appeals. The concealment of the true condition of the company, of the fact that its capital is seriously impaired, of the fact that, although it had been in existence for ten years, it had never earned a profit or paid a dividend, and of the fact that the company is at the present time being operated from the receipts of the sales of stock, and not from the conduct of the company's business—all of which facts have a material effect on the prospects of the company to earn the enormous returns represented—while at the same time promises and prospects of enormous returns are set forth in confident and emphatic language, and the purchaser of stock led to believe that he is offered an exceptional opportunity to become interested in a company that is absolutely safe as an investment, and yet assures tremendous profits, and that each dollar invested by him will earn not less than $220, is unquestionably misleading and deceptive, and manifestly shows that the purpose of the parties promoting this scheme is to mislead and deceive, and thereby effect sales of stock which could not be made if the true condition of the company were disclosed.

While counsel for the company have admitted that these representations are largely exaggerated, they have claimed that the company should not be held responsible therefor, for the reason that they are made as an expression of opinion. I find, however, that these statements are dishonest expressions of opinion, and made with intent to mislead and deceive. Such opinions pretend to be founded on facts which do not exist, and untruthful representations as to the character of the medicines proposed to be sold, and the business of the company; and, furthermore, the true financial condition of the company is concealed, although the facts concealed have a most material bearing on the prospects of the company to earn the returns promised.

4. A further ground on which the company undertakes to assure prospective investors of large returns from the business is pretended to arise from the fact that Mr. Hanson will operate the company, and owing to his exceptional ability in this line of business will make the business of the company extremely profitable. The pretenses carrying the idea that Mr. Hanson possesses unusual and exceptional ability in this line of work are found principally in the advertisements of the company and the pamphlet entitled, "A Guide to Full Pockets." The principal representations made regarding Mr. Hanson in this connection refer to his experience with a business called "Dana's Sarsaparilla." It appears that in that case a profitable sale of the business was effected after Mr. Hanson became charged with the conduct of that company's affairs, and that as the result of such sales the parties interested in the company made a large profit on their investments. The fact, however, that Mr. Hanson has since been unsuccessful in his undertakings and has lost most, if not all, of the money that he had out of Dana's Sarsaparilla business is concealed. This fact would have most material bearing or the representations carrying the idea that Mr. Hanson possesses unusual ability. The representations of this character regarding Mr. Hanson, and made by the company to influence sales of stock, are, therefore, deceptive, in so far as they attempt to show the exceptional ability of the man, because of the concealment of the remainder of his personal history, which greatly modifies it. As a matter of fact, since Hanson sold out Dana's Sarsaparilla he has not been successful, and has been obliged to pass through bankruptcy and be discharged of his debts. Furthermore, he has been operating, in a moderate way at least, the

Nutriola proposition for about eleven years, with the result not only that no profits have been made, but that the capital is impaired from $50,000 to $60,000, and the company is even in debt to him for back salary to a very considerable amount. These representations are, therefore, calculated to mislead and deceive.

Much of the matter formerly used by Hanson to promote the sale of stock and medicines of this company was of an obscene and improper character, and it appears that an indictment is at the present time pending against Hanson at Chicago for the mailing of such matter. It is understood, however, that this objectionable literature is not being used at the present time. This fact is not, however, definitely shown by the inspector's report.

The evidence and circumstances in this case satisfy me that the stock of this company is being sold through the mails by means of pretenses, representations and promises which are false and fraudulent. I therefore recommend that a fraud order be issued against the Nutriola Company at Chicago, Ill.

R. P. GOODWIN,
Assistant Attorney General for the Postoffice Department.

Accordingly a fraud order was issued by Postmaster-General Cortelyou on Nov. 24, 1905.

Attached to the report is the following letter from the Bureau of Chemistry of the Department of Agriculture concerning the analysis of the Nutriola products:

WASHINGTON, D. C., Aug. 10, 1905.

To the Honorable Postmaster General:—In reply to your favor of June 27, in which you requested that an analysis be made of the Nutriola Company's medicines submitted by your department and an expression of opinion given as to the value of the medicines, and also whether the advertising literature contains any false or misleading statements, I have the honor to advise you that the Bureau of Chemistry has made the necessary investigations and I herewith submit its findings.

The Nutriola Company's medicines consist of the following products: "Skin Food," "Liver and Kidney Treatment," "Vaginela," "Laxative Granules" and "Blood and Nerve."

BLOOD AND NERVE.

Blood and Nerve consists of three separate kinds of tablets, which for convenience will be designated in this letter by their colors, namely, Red, White and Yellow.

These remedies presented numerous analytical difficulties, and some of the following results are at best only approximated.

SKIN FOOD.

Skin Food is an ointment-like substance and contains:

	Per cent.
Petrolatum (vaselin) and other unctuous bodies soluble in ether	90.77
Inorganic matter (zinc compounds chiefly)	7.24
Volatile matter at 100 C.	2.00

No real valid complaint can be charged against this compound, except that the term "Skin Food" is rather questionable as to accuracy. It is also an exaggeration to state that this skin food will cure cases that have been given up as hopelessly incurable.

LIVER AND KIDNEY TREATMENT.

This medicine comes in the form of brown tablets and on analysis shows the following products:

	Per cent.
Ash	41.6
Sugar and starch	27.2
Oleoresin (probably buchu)	12.2
Moisture, carbon dioxid, nitrogen gases and undetermined organic bodies	18.9

The probable combination of the inorganic component constituents are as follows: Sodium phosphate, potassium nitrate, magnesium sulphate, calcium carbonate, iron sulphate and a small amount of siliceous matter.

This combination contains drugs (oleoresin of buch and potassium nitrate) that have a distinct action on the kidneys. Nothing having a selective action on the liver was detected, but this is not surprising, for there are a good many agents having such an action, yet can not be detected chemically.

I think this medicine will serve a good and useful purpose.

VAGINELA.

This compound consists of greenish-colored, highly aromatic tablets, and an analysis gives the following results:

	Per cent.
Starch	56.4
Inorganic compounds (consisting chiefly of borax and boric acid)	17.0

Salicylic and tannic acids amounts not determined. Aromatic bodies and essential oils amounts not determined.

The agents present in this medicine are recognized as jointly having astringent, antiseptic and soothing qualities. While the literature accompanying the package of medicine contains a few statements that are, in a measure, extravagant, yet no decided criticism could be offered.

LAXATIVE GRANULE.

This medicine comes in the form of red pills and an approximate analysis indicates that it is composed of well-recognized laxatives, such as cascara, jalap, an alkaloidal drug, and possibly rhubarb.

No particular criticism can be offered to this combination, except that it is probably an exaggeration to say that it is a "nourishing laxative," although this may be a possible figurative interpretation of the results obtained.

NUTRIOLA BLOOD AND NERVE—RED.

This is a red tablet and consists of the medicinal mixture known as "Blaud's mass," with such associated substances as are frequently used in the making of pill masses. There is no doubt but this is a valuable medicine.

NUTRIOLA BLOOD AND NERVE—WHITE.

This remedy consists of small, white, bitter tablets, and an approximate analysis shows it to contain strychnin and possibly damiana. This is a well-recognized combination of valuable medicinal agents and is, therefore, a medicine of good quality.

NUTRIOLA BLOOD AND NERVE—YELLOW.

This medicine comes in the form of yellowish tablets, which do not possess any taste characteristic of a commonly used medicine, excepting ginger, and ginger is the only product I have been able to definitely make out as being present. I am, therefore, unable to express any opinion as to the value of this medicine, except so far as it resides in the ginger. Ginger is recognized as having a stimulating effect when introduced into the alimentary canal.

I have also read over with care Exhibit C, entitled "A Guide to Full Pockets," and must confess that so far as the medicinal and pharmaceutical sides are concerned there does not seem to be any decidedly exaggerated statements. On page 8 will be found a statement which conveys the idea that Nutriola is not composed of drugs. This is certainly not correct. On page 9 are a number of questionable statements, namely, that Nutriola is a "tissue-tormer" and "nerve-builder" and the "very essence of life." The statement found on page 10 of "Full Pockets" near the bottom leads to the belief that Vaginela is absolutely different from other remedies of this character. This, however, is not correct, because the constituents found are frequently employed by practicing physicians for diseases similar to those for which Vaginela is recommended by the Nutriola Company.

I would call your attention, however, to several advertisements found in the packages containing the medicines themselves. . . . I have placed a number of lead-pencil marks opposite many unwarranted and exaggerated statements. Before forming a decided opinion on these statements it should be borne in mind that they are, in a measure, mitigated by an introductory clause, namely, "Temporary relief and permanent cure," near the bottom of page 2 of exhibit No. "M."

According to exhibit No. "N," near the middle of the page, this firm claims to be able to cure by the use of Nutriola and different forms of electricity "cancers, tumors, rupture, stricture, etc., without pain or knife."

It might be well also to make a remark relative to the impression made by the literature concerning the large returns for investments. It is well known that many proprietary remedies have netted the owners very handsome profits. It is also only fair to say, judging from the success of ordinary business ventures along this line, that this firm would find it difficult to pay a profit of $220 on every dollar invested.

This letter is signed by the acting secretary.

Marriages

Barton H. Potts, M.D., to Miss Florence L. Borie, both of Philadelphia, April 18.

William J. Abbott, M.D., to Miss Mary Crozier, both of Cleveland, Ohio, April 12.

Frank E. Hicklin, M.D., La Salle, Ill., to Miss Mary Fickle of Sandwich, Ill., April 11.

Harold Barclay, M.D., to Miss Hellen Fuller Potter, both of New York City, April 14.

James R. Bishop, M.D., Nanticoke, Md., to Miss Elizabeth Pyle, at Baltimore, April 14.

Samuel Claggett, M.D., Petersville, Md., to Miss Jeannette B. Chew, at Baltimore, April 18.

Dell E. Graham, M.D., Bradgate, Iowa, to Miss Manta Shellenberger of Humboldt, Iowa.

Albert Charles Clauser, M.D., to Miss Mary Hawkins Sims, both of Delphi, Ind., April 19.

Oliver B. Van Fassen, M.D., Humphreys Mo., to Miss Zenith Moyers of St. Louis, April 11.

Henry C. Wright, M.D., Nashville, Tenn., to Miss Julia Morrell of Los Angeles, Cal., April 10.

Gustaf Richard Egeland, M.D., to Miss Lydia Alvira Anderson, both of Ephraim, Wis., April 18.

St. George T. Grinnan, M.D., Richmond, Va., to Miss Susan Fitzhugh Dabney, at Charlottesville, Va., April 18.

Charles J. Marquette, M.D., Nova, Ohio, to Miss Evelyn Kelsey of Huntington, Ohio, in Cleveland, February 10.

Deaths

Milton Curtis Wedgewood, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1859; assistant surgeon of the Eleventh Maine Volunteer Infantry during the Civil War; president of the Maine Medical Association, and in 1897 president of the Maine Academy of Medicine and Science; president of the Adroseoggin County Medical Association; one of the organizers of the Central Maine General Hospital, Lewiston; a member of the International Health Association; a member of the executive council of Maine under two administrations, and once a member of the State Board of Health, died at his home in Lewiston, April 9, from brain disease, after a long illness, aged 73.

J. Coplin Stinson, M.D. University of Trinity College, Toronto, 1893, Fellow Trinity Medical College, 1893; member of the College of Physicians and Surgeons Toronto, 1893; first silver medallist Trinity Medical College; a member of the American Medical Association, Medical Society of the State of California; San Francisco County Medical Society and San Francisco Clinical Society; physician to the British Benevolent Association, San Francisco; surgeon to the Pacific Sanitarium; a member of the Board of Health of San Francisco, is reported to have been killed by falling bricks at the California Hotel, San Francisco, April 18.

George W. Beggs, M.D. Rush Medical College, Chicago, 1862; a pioneer physician of Sioux City, Iowa; surgeon of the One Hundred and Sixth Illinois Volunteer Infantry during the Civil War; a member of the local and state medical societies and of the Association of Military Surgeons of the United States; surgeon general of the Union Veteran Army of the United States in 1885; for many years local surgeon for the Illinois Central and Chicago, Milwaukee & St. Paul railroads, and president of the Sioux City College of Medicine for ten years, died at his home in Sioux City, April 10, from kidney disease, after an illness of two years, aged 69.

Charles Ferdinand Taggart, M.D. Medical Department of Washington University, St. Louis, 1884, of Los Angeles, a member of the American Medical Association; Medical Society of the State of California; Southern California Medical Society; Los Angeles County Medical Society; National Association of Railway Surgeons and Pacific Coast Association of Railway Surgeons; chief surgeon of the San Pedro, Los Angeles and Salt Lake Railroad, died in San Francisco, April 8, from a gunshot wound caused by his own revolver which fell from his pocket and was discharged.

Eugene Beauharnais Harrison, M.D. Jefferson Medical College, Philadelphia, 1856; a member of the American Medical Association, Ohio State Medical Society, Henry County Medical Society, and the Society of the Army of the Tennessee; major and surgeon of the Sixty-eighth Ohio Volunteer Infantry throughout the Civil War, died at his home in Napoleon, Ohio, April 15, nineteen days after a suprapubic prostatectomy for prostatic hypertrophy and vesical calculus, aged 74.

Nicholas D. Richardson, M.D. Vanderbilt University, Medical Department, Nashville, 1899; acting assistant surgeon, United States Public Health and Marine-Hospital Service; a member of the Association of Military Surgeons of the United States; quarantine inspector at San Francisco; formerly of Athens, Ala., died from tuberculosis at his home in San Francisco, April 9, after a long illness, aged 34.

G. Ray Hoff, M.D. Bellevue Hospital Medical College, New York City, 1893; some-time professor of materia medica in Denver University and assistant professor in Gross Medical College; a member of the state and county societies of New York, of the Denver and Denver County Medical Society, and the Colorado State Medical Society, died at his home in Utica, N. Y., April 14, after a prolonged illness, aged 38.

Elias De Spelder, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1882; a member of the American Medical Association, of the Michigan State Medical Society, and second vice-president of the Ottawa County Medical Society, died at his home in Zeeland, Mich., April 11, from meningitis, after an illness of one week, aged 49. The society attended the funeral in a body.

Edwin A. Kelly, M.D. Medical College of Ohio, Cincinnati, 1878; assistant superintendent of the Agnew State Hospital for the Insane, Agnews, Cal.; in 1882 assistant superintendent of the Columbus (Ohio) State Hospital, and later assistant superintendent of the Athens (Ohio) State Hospital, was crushed to death in the collapse of the building due to the earthquake, April 18, aged 55.

Matthew T. Gaffney, M.D. College of Physicians and Surgeons, Baltimore, 1897; for several years district physician of Newark, N. J.; a member of the visiting staff of St. Michael's Hospital, and surgeon for the North Jersey Street Railway Company, died at his home in Newark, April 16, from kidney disease, after an illness of two weeks, aged 36.

Robert C. Davis, M.D. New York University, New York City, 1880; for many years inspector in the New York health department; a member of the New York County Medical Society and of the New York Academy of Medicine, died April 13, in Roosevelt Hospital, New York City, from pneumonia, after an illness of five days, aged 47.

Richard D. Webb, M.D. Starling Medical College, Columbus, Ohio, 1865; a practitioner of Nortonville, Kan., for more than a quarter of a century; assistant surgeon of the Seventy-eighth Ohio Volunteer Infantry during the Civil War, died in a hospital at Topeka, April 6, two days after an operation for cholelithiasis, aged 67.

Louis Mackall, M.D. University of Maryland, School of Medicine, Baltimore, 1851; a member of the American Medical Association; for many years professor of physiology and clinical medicine at the University of Georgetown, Medical Department, Washington, D. C., died at his home in Washington, April 19, aged 75.

Joseph K. Milbourne, M.D. State University of Iowa, College of Medicine, Iowa City, 1881, of Clinton, Iowa, past president of the Iowa State Medical Society and president of the Clinton County Medical Society, died at Agatha Hospital, Clinton, April 13, from peritonitis, five days after an operation for appendicitis, aged 54.

William J. Rhymes, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1899; formerly of St. Martinville, La.; superintendent of the Maricopa County Hospital, Phoenix, Ariz., died at his home in that city, February 1, from pneumonia, after an illness of ten days, aged 33.

Theophilus R. Carter, M.D. College of Physicians and Surgeons in the City of New York, 1892, a member of the Westchester County Medical Society, died at his home in Mount Vernon, N. Y., from progressive muscular atrophy, after an illness of about two years, January 22, aged 42.

Emma D. Cook, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1892; a member of the Wayne County and Michigan state medical societies; state examiner for the Ladies of the Maccabees, died at her home in Detroit, April 14, from anemia, aged 58.

Hugh Alexander McEachren, M.D. Detroit College of Medicine, 1892, a member of the American Medical Association and a prominent specialist in diseases of the nose, throat and

lungs, died April 8, at his home in Detroit, from tuberculosis, after an illness of several years, aged 36.

Richard Jones Price, M.D. Medical College of Virginia, Richmond, 1898; acting assistant surgeon, United States Army, and on duty in the Philippine Islands; formerly of Wilmington, N. C., died in Asheville, N. C., April 4, from tuberculosis, after a prolonged illness, aged 35.

John Bruce MacCallum, M.D. Johns Hopkins University, Medical Department, Baltimore, 1900, assistant professor of physiology in the University of California, died at his home in Berkeley, Cal., from nephritis, after an illness of more than three years, aged 30.

Joseph W. Harris, M.D. Miami Medical College, Cincinnati, 1874, a veteran of the Civil War, and for eighteen years a resident of Los Angeles, Cal., died at his home in that city, April 12, from overwork, after an illness of two years, aged 65.

John Forshee Halsted, M.D. Eclectic Medical College of Philadelphia, 1857; member of the College of Physicians and Surgeons of Ontario, 1869, formerly of Berlin and Grand Valley, Ont., died at Winnipeg, Man., March 3, aged 82.

Robert Corbin Wintermute, M.D. Eclectic Medical Institute, Cincinnati, 1881, and professor of obstetrics, gynecology and pediatrics in his alma mater, died from cerebral hemorrhage, at his home in Norwood, Cincinnati, April 15, aged 44.

John H. Tanner, M.D. University of Buffalo, Medical Department, 1863, formerly a practitioner of Spencer, N. Y., died at his home in Harford, N. Y., March 12, from the effects of a self-inflicted gunshot wound of the head, aged 70.

Alexander J. Bowser, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1890, died at his home in New Baltimore, Pa., April 11, from heart disease, after an illness of several months, aged 43.

James W. Gardner, M.D. Pennsylvania Medical College, Philadelphia, 1867; one of the oldest and best-known practitioners of East Liverpool, Ohio, died suddenly at his home in that city, April 13, aged 79.

Stephen E. Wentworth, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1868, one of the oldest practitioners of Auburn, Maine, died suddenly in that city from heart disease, April 10, aged 69.

James J. Cole, M.D. Miami Medical College, Cincinnati, 1870; a practitioner of Indianapolis for nearly thirty years, died at his home in that city April 10, from valvular heart disease, after a long illness, aged 62.

Leonard Keehn, M.D. Medical Department of Washington University, St. Louis, 1899, of St. Louis, Mo., died in Los Angeles, Cal., from tubercular meningitis, April 9, after a prolonged illness, aged 36.

Cary K. Parker, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1895, formerly of Pollock, La., died in Bonita, La., April 10, after a prolonged illness, from tuberculosis, aged 34.

John P. Waste, M.D. Charity Hospital Medical College, Cleveland, 1865, a charter member of the Southern Minnesota Medical Association, died at his home in Plainview, Minn., April 17, aged 69.

Henry L. Stone, M.D. University of Maryland School of Medicine, Baltimore, 1868, a veteran of the Civil War, died at his home in Montgomery, Ala., January 12, after a long illness, aged 59.

Edward F. Perkins, M.D. Medical Department of the University of Missouri, St. Louis, 1855, state senator in 1878, died at his home in Linneus, Mo., April 4, after a prolonged illness, aged 72.

Edward R. Wallizer, M.D. Baltimore Medical College, 1884, of Des Moines, Iowa, a veteran of the Civil War, died in the Clarinda State Hospital, April 4, after an illness of two years, aged 60.

Alexander Fitzpatrick, M.D., a Confederate veteran, and for several terms representative from Nelson County in the Virginia legislature, died at his home in Rockfish, April 11, aged 79.

Charles V. Holsclaw, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1886, formerly of Lovilia, Iowa, died suddenly at his home in Merriman, Neb., recently.

W. C. Tinsley, M.D. Georgia University, Medical Department, Augusta, 1857, of Flint, Ga., died suddenly at Americus, Ga., April 12, from cerebral hemorrhage, aged 72.

Joseph G. Weaver, M.D. Howard University, Medical Department, Washington, 1899, died at his home in Newark, N. J., after a protracted illness, March 28, aged 41.

Charles A. Delander, M.D. Iowa College of Physicians and Surgeons, Des Moines, 1902, died at his home in Des Moines, April 12, from rheumatic endocarditis, aged 36.

Paul Pritchard, M.D. Medical College of the State of South Carolina, Charleston, 1841, a Confederate veteran, died at his home in Pritchardville, S. C., April 4, aged 86.

H. I. Liesch, M.D. Western Reserve University, Medical Department, Cleveland, Ohio, 1881, died suddenly from heart disease, in his room in Nodaway, Mo., April 10.

Robert Pearson, M.D. University of the City of New York, Medical Department, 1860, a veteran of the Civil War, died at his home in Morganton, N. C., January 26.

Anna C. Rees, M.D. Woman's Medical College of the New York Infirmary, New York City, 1898, died at her home in Union Hill, N. J., Oct. 25, 1905, aged 29.

J. A. Mullen, M.D. Jefferson Medical College, Philadelphia, 1893, died suddenly in Huntington, W. Va., from heart disease, January 23, aged about 45.

Frank S. Turner, M.D. University Medical College of Kansas City, Mo., 1894, died at his home in Monroe City, Mo., from peritonitis, March 12, aged 37.

Frederick A. Smart, M.D. Albany (N. Y.) Medical College, 1899, died at his home in Cobleskill, N. Y., April 14, from cerebral hemorrhage, aged 35.

George R. Weston, M.D. National Medical University of Illinois, Chicago, 1891, died at his home in San Antonio, Texas, January 30, aged 51.

John Skivington, M.D. Medical College of Ohio, Medical Department, Cincinnati, 1857, died at his home in Morganza, Pa., January 18, aged 76.

John S. Neville, M.D. (Examination, Ohio), died at his home in Roundhead, Ohio, March 2, after a short illness, from senile debility, aged 75.

D. P. Stradley, M.D. (Examination, Colorado), formerly of Longmont, Colo., died in Albuquerque, N. M., from tuberculosis, January 4.

J. E. Coyle, M.D. University of Tennessee, Medical Department, Nashville, 1892, is reported to have died recently in Wewaka, I. T.

William Osborne, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1882, died at his home in Chicago, April 19.

Michael A. Glennan, M.D. Rush Medical College, Chicago, 1878, died at his home in Ludlow, Ill., from kidney disease, April 11.

Ira C. Sawyer, M.D. Dartmouth Medical School, Hanover, N. H., 1864, died at his home in Springvale, Maine, April 13, aged 66.

Samuel Sprecher, M.D. Illinois Medical College, Chicago, 1901, died recently and was buried in Springfield, Ohio, January 14.

George Smith Gould, M.D. Rush Medical College, Chicago, 1896, died suddenly in Cleveland, February 10.

Daniel L. Dakin, M.D. Rush Medical College, Chicago, 1870, died suddenly at his home in Detroit, April 2.

W. T. Campbell, M.D. Marion-Sims-Beaumont College of Medicine, died recently in St. Louis, aged 80.

Book Notice

PRACTICAL SANITARY SCIENCE. A Handbook for the Public Health Laboratory. By D. Sommerville, B.A., M.D. Cloth. Pp. 310. Price, $3.00. New York: William Wood & Co.

This book is described in its subtitle as "a handbook for the public health laboratory." As such it does not seem adapted to fill any long-felt want of American workers. Considerable space is devoted to elementary physical and chemical data. In the chapter on air analysis, for example, we are told that there are three thermometric scales in use and what the respective freezing points and boiling points are. It has been thought necessary to take up space with pictures of a hot air oven (p. 12) and a chemical balance (p. 15). In general the methods seem somewhat perfunctorily described; this is particularly true on the bacteriologic side. Loose statements are noticed here and there. On p. 150, in the section on pathogenic organisms in milk, it is asserted that "unless the disease (tuberculosis) affects the udder, no bacilli are found in the milk."

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

QUININ TREATMENT OF PNEUMONIA.

Baltimore, April 17, 1906.

To the Editor:—Since reading Dr. Galbraith's article on this subject, I have had occasion to use this treatment in half a dozen cases, and it gives charming results when Dr. Galbraith's rules regarding administration are carried out. The average duration of the disease is about three days. Under the old form of treatment I had treated just previously about the same number of cases with the result that it was from three to six weeks before the patients could get out of bed. Now I would rather have a case of pneumonia with my quinin and iron than a case of malarial fever, for I know that I have a specific. Norman H. D. Cox, M.D.

CONTRACT PRACTICE.

Alexandria, La., April 9, 1906.

To the Editor:—At a recent meeting, the Rapides Parish (La.) Medical Society adopted the following resolutions:

We, the members of the Rapides Parish Medical Society in special session convened, after due deliberation, have reached the conclusion that a fee of less than $5 is not commensurate with the services rendered in making an examination for life insurance companies. Realizing the important relation existing between the medical examiner and the life insurance companies, we believe that a fee of not less than $5 for any medical examination should be charged. Therefore be it

Resolved, That we herewith pledge ourselves not to make an examination for a fee less than $5 in future. Be it further

Resolved, That a fee of not less than $3 be charged for fraternal and benevolent orders. It is further

Resolved, That it shall be deemed a breach of professional dignity on the part of any physician to make an examination for fees less than above mentioned.

We memorialize the Louisiana State Medical Society to take cognizance of this matter, and urge all constituent societies to indorse this action.

C. M. G. Stafford, M.D., Secretary. J. A. White, M.D., President.

Orange, N. J., April 11, 1906.

To the Editor:—At the last annual meeting of the Essex County (N. J.) Medical Society, held April 3, 1906, a resolution was passed condemning lodge or contract practice, and making any member engaging in such practice subject to expulsion from the society.

At the last monthly meeting of the Orange Practitioners' Society of Orange, N. J., a committee was appointed to secure the signatures of all the physicians in the Oranges to an agreement not to engage in lodge or contract practice. At present some 3,000 people in the Oranges are receiving medical treatment for less than nine (9) cents a month.. Edgar C. Seibert.

THE AUTOMOBILE FOR THE PHYSICIAN'S USE.

Dr. James E. Taylor, Ovid, Mich., writes: "I enjoyed very much the various opinions and experiences of medical men in the use of the automobile. I am convinced that they are not yet practical for use in this locality. I am considering the purchase of an automobile to use in my practice, and would request, if practical, that The Journal gather and publish as soon as can be done the experiences of medical men in the use of this machine in practice. I believe many physicians are interested in this."

Drs. A. M. and C. R. Clark, Youngstown, Ohio, say: "We agree that tires are the greatest source of trouble, but we have been afraid to try solid tires yet. This experience meeting of yours is one, and should open the eyes of some manufacturers."

Dr. R. H. Sherwood, Bowen, Ill., writes: "I have enjoyed the articles and think that they will be of great benefit to some of us who are thinking of investing."

Dr. A. J. Horson, Hampton, Iowa, says: "I have read with much interest the articles on automobiles. I have been using an automobile in my practice for the last three years, and must say I have not met with as good luck as most of these doctors report. I have had two machines, and plenty of trouble with each. I may have been unfortunate in selecting my car. Thank you for your favor in helping us out on this hard problem."

Dr. D. M. Reynolds, Clayton, Ind., writes: "I read with much interest the several letters from physicians in regard to use of the automobile. I think such timely discussion of business topics will make The Journal more interesting and valuable."

Dr. Oliver C. Smith, Hartford, Conn., reports: "Five years ago I purchased an electric vehicle, weighing 2,000 pounds, with a speed on smooth, level roads, of twelve miles per hour. During the past five years, the negative and positive plates have each been replaced at a cost of $280. During the third year, the tire expense became excessive, and I replaced the inflated tires with hard, rubber tires. With this exception there has been no renewal or change of parts. The cost for electricity, with daily use of vehicle, averages from $10 to $12 per month. The most serious bill of expense, aside from tires, is the minor repairs to pinions, gears, bushings, fingers and controller. My carriage has been continually kept at a garage, which furnishes day and night service. It is my opinion that a modern electric vehicle is the most satisfactory equipment for a physician practicing in a city. It can not supplant the horse and carriage through heavy roads, it can not compete with the gasoline car in country use or in long runs, but is ideal for short trips over smooth, macadamized or asphalt pavements."

TOY PISTOLS AND OTHER SIMILAR DEVICES.

Claremont, N. H., April 14, 1906.

To the Editor:—I thank you for the information given regarding toy pistols, etc. [The Journal A. M. A., April 14, p. 1132]. Inasmuch as this question is rather indefinite and the authorities will want to know more definitely what devices are safe and what are dangerous, could you not give me a little more information as to some of the devices usually considered dangerous, and some of the explosives which should be avoided? It is generally assumed that the canes which explode dynamite or powder, and the earthenware or iron balls covered with an explosive coating, which is exploded by knocking the balls together when held in the hands, and various similar devices, are all dangerous and should be avoided. The different forms of powder are, I believe, some safe and some dangerous, and I would be pleased to have any suggestions in this line which you can make. Thomas W. Fry.

Answer.—It may be stated in a general way that any explosive with power enough to lacerate the skin is dangerous as to tetanus and infection, and that any explosive so prepared that it leaves ignited paper or other materials about is dangerous to property. The idea that tetanus results from any particular sort of powder or other explosive is incorrect; it is the wound, and not the nature of its cause that is important. The danger of the Fourth (as regards loss of life) will disappear if the three chief offenders are removed: these are the blank cartridge, the cannon cracker, and the toy cannon. The exploding canes mentioned for the most part use blank cartridges, and are dangerous. We doubt if the cracking balls mentioned cause much trouble.

State Boards of Registration

COMING EXAMINATIONS.

Tennessee State Board of Medical Examiners, Memphis, Nashville and Knoxville, May 2. Secretary, T. J. Happel, Trenton.

Illinois State Board of Health, Metropolitan Block, East St. Louis, May 2-4. Secretary, J. A. Egan, Springfield.

Louisiana State Board of Medical Examiners, New Orleans, May 3-4. Secretary, F. A. Larue, New Orleans.

Boston Board of Registration in Medicine, State House, Boston, May 8-9. Secretary, E. B. Harvey, Boston.

Oregon State Board of Medical Examiners, Portland, May 10-12. Secretary, Byron E. Miller, Portland.

Kentucky State Board of Health, Galt House, Louisville, begins May 15. Secretary, J. N. McCormack, Bowling Green.

Indiana Board of Medical Registration and Examination, Indianapolis, May 22-24. Secretary, W. T. Gott, Indianapolis.

New York State Boards of Medical Examiners, Albany, May 22-25. Secretary, Charles F. Wheelock, Albany.

Illinois State Board of Health, Coliseum Annex, Chicago, May 23-25. Secretary, J. A. Egan, Springfield.

Nebraska State Board of Health, State House, Lincoln, May 29-30. Secretary, George H. Brash, Beatrice.

Approve Reciprocity.—The County Medical Society of Barbour, Randolph and Tucker counties, W. Va., at its last meeting adopted the following resolution:

Resolved: That we heartily approve of the work being done by the American Confederation of Reciprocating, Examining and Licensing Medical Boards. Especially do we approve of that part of the work known as "Qualification No. 2," the object of which is to give reciprocity to the older practitioners.

Indian Territory April Report.—Dr. J. B. Smith, secretary of the Central District Medical Examining Board, reports the written examination held at South McAlester, April 2-3, 1906. The number of subjects examined in was 12; total number of questions asked, 130; percentage required to pass, 75. The total number of candidates examined was 12, of whom 10 were undergraduates; 6 passed and 6 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED.		
College of P. and S., Indiana	(1906)	78.5
Ft. Worth University	(1906)	83
Undergraduates	75, 76.2, 77, 83	
FAILED.		
Undergraduates	61.5, 62, 65, 68, 70, 73	

Iowa March Report. Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, March 21-22, 1906. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 11, of whom 10 passed and 1 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
American Med. Miss. Coll.	(1899) 81	86
College of P. and S., Baltimore	(1903)	87
College of P. and S., Chicago	(1899) 75	75
Hahnemann Med. Coll., Chicago	(1887)	78
Hering Med. Coll., Chicago	(1904)	75
Northwestern University	(1900)	85
Queen's University, Ontario	(1905)	92
Rush Med. Coll.	(1903)	89
FAILED.		
Meharry Med. Coll., Nashville	(1902)	73

Maine March Report.—Dr. William J. Maybury, secretary of the Maine Board of Registration of Medicine, reports the oral and written examination held at Portland, March 13, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 15, of whom 13 passed and 2 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Harvard University	(1901) 80.4, 93.5	
College of P. and S., Boston	(1904)	84.6
Woman's Med. Coll., Pennsylvania	(1905)	85.9
Tufts Coll. Med. School	(1905) 85, 85.3,	86.7
Bellevue Hosp. Med. Coll.	(1905)	86.3
Baltimore Med. Coll.	(1905)	75.2
Medico-Chirurgical Coll., Pennsylvania	(1903)	84.5
Baltimore University	(1901)	81.3
College of P. and S., New York	(1890)	84
University of Michigan	(1889)	84.3
FAILED.		
College of P. and S., Boston	(1905)	57.2
Harvard University	(1904)	74.4

Montana April Report.—Dr. W. C. Riddell, secretary of the Board of Medical Examiners of Montana, reports the written examination held at Helena, April 3-4, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 27, of whom 14 passed and 13 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Michigan	(1904)	84.8
College of P. and S., Baltimore	(1904)	75.6
University of Pennsylvania	(1894)	75.4
St. Louis University	(1905)	75.9
College of P. and S., Chicago	(1904)	90.2
Rush Med. Coll.	(1900) 79.8;	(1904) 76.5
Johns Hopkins Medical School	(1901)	75.1
College of P. and S., New York	(1893)	80.3
Maryland Med. Coll.	(1904)	78
George Washington University	(1905)	79.8
Medical College of Ohio	(1904)	83
American Med. Miss. Coll.	(1905)	78.4
Illinois Med. Coll.	(1898)	75.9
FAILED.		
Alexander University, Helsingstors, Finland	(1896)*	
Wooster University	(1891)	54.9
Beaumont Hosp. Med. Coll	(1901)	65.4
College of P. and S., Chicago	(1902)	70.1
Missouri Med. Coll.,	(1884)	66.3
Medical College of Ohio	(1899)	56.9
Barnes Med. Coll	(1898)	62.1
Creighton Med. Coll.	(1900)	55.1
Laval University, Quebec	(1903)	40.1
Jefferson Med. Coll.	(1897)	69.8
University of the City of New York	(1893)	55.3
University of Vermont	(1895)	55.9
Marion Sims College of Medicine	(1895)	54.2

*Did not complete examination on account of sickness.

North Dakota April Report. Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, April 3-5, 1906. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 17, of whom 15 passed and 2 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent
Sioux City Coll. of Med	(1904)	76
University of Illinois	(1904)	81
Queen's University, Ontario	(1896)	88
Hamline University	(1900) 78, (1905)	88
Saginaw Valley Medical College	(1901)	80
University of Minnesota	(1903)	81, 90
University of Toronto	(1905)	78
Laval University, Quebec		*81
Detroit Med. Coll.	(1905)	75
Christiania University, Norway	(1902)	76
Hahnemann Med. Coll., Chicago	(1894)	81
Washington Univ., St. Louis	(1904)	75
College of P. and S., Chicago	(1905)	**82
FAILED.		
Hamline University	(1901)	
Hering Med. Coll., Chicago	(1902)	

*Year of graduation not given.
**Licensed by reciprocity with Illinois.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending April 21, 1906:

Perley, Harry O., deputy surgeon general, granted leave of absence for two months on relief from duty at West Point, N. Y.

Lynch, Charles, surgeon, detailed member of the General Staff Corps.

Ruffner, E. L., asst.-surgeon, granted thirty days' leave about June 1, with permission to apply for an extension of two months.

Hanner, John W., asst.-surgeon, leave of absence extended ten days.

Tukey, William H., contract surgeon, returned to Boise Barracks, Idaho, from leave of absence.

Enders, William J., contract surgeon, returned to Fort Morgan, Ala., from leave of absence.

Brown, Wilmont E., contract surgeon, left Boise Barracks, Idaho, for duty at Fort Walla Walla, Wash.

Koyle, Fred T., contract surgeon, left Fort Bliss, Texas, on leave of absence for ten days.

Kuhn, Charles F., contract surgeon, returned from Fort William H. Seward, Alaska, to Fort Lawton, Wash., his proper station.

Long, Charles J., dental surgeon, arrived at Fort Missoula, Mont., for duty, from Fort William Henry Harrison, Mont.

Long, Stephen M., contract surgeon, ordered to Philippine service, and sailed on the *Sheridan* from San Francisco, April 16.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 21, 1906:

Langhorne, C. D., surgeon, ordered to Washington, D. C., for duty in attendance on course of instruction at the Naval Medical School.

Woods, E. L., asst.-surgeon, ordered to the Naval Academy.

Nelson, H. T., Jr., asst.-surgeon, detached from the Naval Academy and resignation accepted to take effect April 14, 1906.

Pease, T. N., asst.-surgeon, detached from the *Columbia* and ordered home to wait orders.

Brooks, F. H., asst.-surgeon, ordered to the *Columbia*.

Schaller, W. F., asst.-surgeon, ordered to the Naval Hospital, Mare Island, California.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending April 18, 1906:

Gutteras, G. M., surgeon, granted leave of absence for one day, April 15, 1906.

Young, G. B., P. A. surgeon, directed to proceed to Saginaw and Bay City, Mich., for special temporary duty, on completion of which to rejoin station.

Young, G. B., P. A. surgeon, designated to represent the service at the Council on Medical Education of the American Medical Association, Chicago, Ill., May 12, 1906.

Kinz, W. W., P. A. surgeon, five days leave of absence revoked, and directed to rejoin his station in Washington, D. C.

Amesse, J. W., P. A. surgeon, relieved from special temporary duty at New Orleans, La., and directed to rejoin his station at Ellis Island, N. Y.

Rucker, W. C., asst.-surgeon, relieved from special temporary duty at New Orleans, and directed to proceed to Vineyard Haven, Mass., and assume temporary command of the Service.

Ward, W. K., asst.-surgeon, granted leave of absence for five days, from April 4, on account of sickness.

Ebersole, R. E., asst.-surgeon, granted leave of absence for four days, from April 11, under the provisions of Paragraph 191 of the Regulations.

Smith, F. C., asst.-surgeon, relieved from special temporary duty at New Orleans, La., and directed to rejoin his station at Detroit, Mich.

Smith, F. C., asst. surgeon, granted fourteen days' leave of absence on route from New Orleans to Detroit.

Jackson, J. M., acting asst.-surgeon, granted leave of absence for five days, from April 17.

Kentley, H. W., acting asst surgeon, granted leave of absence for three days, from April 16, 1906, under the provisions of Paragraph 191 of the Regulations.

Gibson, F. L., pharmacist, relieved from duty at San Francisco, Cal., and directed to proceed to Honolulu, T. H., reporting to Dr. W. R. Brinckerhoff, director of the Leprosy Investigation Station, for duty at Molokai, T. H.

Bierman, C. H., pharmacist relieved from duty at Tampa Bay Quarantine Station, and directed to proceed to Portland, Me., reporting to the medical officer in command for duty and assignment to quarters.

Keen, W. H., pharmacist, directed to proceed to Tampa Bay Quarantine Station for duty and assignment to quarters.

APPOINTMENT.

Walter H. Keen was reinstated as Pharmacist of the third class on April 11, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague ve been reported to the Surgeon-General, Public Health and rine-Hospital Service, during the week ended April 20, 1906:

SMALLPOX—UNITED STATES.

California: San Francisco: March 31-April 7, 41 cases, 1 death.
District of Columbia: Washington, April 7-14, 1 case.
Louisiana: Shreveport, April 7-14, 1 case.
Missouri: St. Louis, April 7-14, 6 cases; West Plains, March 8, ase.
Montana: Beaverhead County, March 1-31, 2 cases; Park County, ase.
New Jersey: Rutherford, April 7, 1 case.
New York: New York, April 7-14, 5 cases.
North Carolina: Greensboro, April 7-14, 2 cases.
Pennsylvania: Pittsburg, March 31-April 7, 2 cases.
Texas: Houston, April 7-14, 1 case.
Vermont: Richford, April 12, 2 cases.
Wisconsin: Appleton, April 7-14, 5 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, Feb. 18-March 18, 2 cases, 3 deaths.
China: Canton, March 3, present; Hongkong, Feb. 24-March 3, cases, 5 deaths.
France: Paris, March 24-31, 6 cases, 1 death.
Germany: Bremen, March 25-April 1, 2 cases.
Great Britain: Bristol, March 25-31, 2 cases; Glasgow, March April 6, 1 case.
Greece: Athens, March 15-22, 2 deaths.
India: Bombay, March 13-20, 18 deaths; Calcutta, March 3-10, 2 deaths; Karachi, March 11-18, 33 cases, 17 deaths; Madras, rch 10-16, 39 deaths; Rangoon, March 3-10, 101 deaths.
Italy: General, March 15-22, 35 cases.
Mexico: Tuxpam, March 27-April 3, 1 death.
Russia: Odessa, March 25-31, 10 cases, 2 deaths; St. Petersg, March 10-24, 12 cases, 2 deaths.
Spain: Barcelona, March 21-31, 6 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Feb. 18-March 18, 10 cases, 6 deaths.
Honduras: Choloma, April 6, 6 cases.
Nicaragua: Managua: March 10-17, 1 death.

PLAGUE—UNITED STATES

Delaware: Reedy Island Quarantine, April 6-11, 2 cases 1 death n Steamship *Burrisfield*, from Bombay).

PLAGUE—INSULAR.

Hawaii: Honolulu, April 14-15, 2 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Feb. 18-March 18, 10 cases, 6 deaths.
China: Hong Kong, Feb. 24-March 3, 8 cases, 7 deaths.
Egypt: General, March 24-29, 7 cases, 5 deaths.
India: General: March 3-10, 2,623 deaths; Bombay, March 13-20, 2 cases, 572 deaths; Calcutta, March 3-10, 83 deaths; Karachi, arch 11-19, 52 cases, 44 deaths; Rangoon, March 3-10, 48 deaths.

CHOLERA.

India: Bombay, March 13-20, 2 deaths; Calcutta, March 3-10, 44 aths.

Society Proceedings

COMING MEETINGS.

American Medical Association, Boston, June 5-8.

Nebraska State Medical Association, Lincoln, May 1-3.
New Mexico Medical Association, Albuquerque, May 2.
American Therapeutic Society, New York City, May 3-5.
Oklahoma Medical Association, Oklahoma City, May 8.
Indian Territory Medical Association, Oklahoma City, May 8.
Utah State Medical Association, Salt Lake City, May 8-9.
Nevada State Medical Society, Reno, May 8-9.
Louisiana State Medical Society, New Orleans, May 8-10.
Arkansas Medical Society, Hot Springs, May 8-10.
Montana State Medical Association, Butte, May 9-10.
Kansas Medical Society, Topeka, May 9-11.
Ohio State Medical Association, Caoton, Ohio, May 9-11.
American Climatological Assn., Atlantic City, N. J., May 12-14.
American Assn. of Physicians, Washington, D. C., May 15-16.
Missouri State Medical Association, Jefferson City, May 15-17.
Iowa State Medical Society, Des Moines, May 16-17.
North Dakota State Medical Association, Fargo, May 16-17.
New Hampshire Medical Society, Concord, May 17-18.
Amer. Assn. of Path. and Bacteriologists, Baltimore, May 18-19.
American Gynecological Society, Hot Springs, Va., May 22.
Illinois State Medical Society, Springfield, May 15-17. (Note hange of time back to date originally planned.)
South Dakota State Medical Association, Watertown, May 22-24.
Connecticut State Medical Society, New Haven, May 23-24.
Indiana State Medical Association, Winona Lake, May 23-25.
Michigan State Medical Society, Jackson, May 23-25.

ST. LOUIS MEDICAL SOCIETY.

Regular Meeting, held April 21, 1906.

This meeting was largely attended, the subject of the evening for discussion being "Criminal Abortion, Its Medical, Religious, Moral, and Legal Aspects." Members of the clergy, bar nd bench, and some laymen were in attendance, and took part n the discussion.

The St. Louis Campaign Against Abortion.

Before the regular essayists read their papers, the report of the committee on public health and legislation, Dr. C. M. Nicholson, chairman, rendered its report, showing what work has been done in securing enforcement of the law, and what is further proposed in this direction.

In a preliminary way the St. Louis Medical Society had employed an attorney to prosecute violators of the city ordinance which forbids the placing of indecent or obscene advertisements in the public press. A case against Dr. Nathaniel King, one of these advertisers, was made a test case. Dr. King advertised to treat the private diseases of men. He admitted the publication of his advertisements, but denied the constitutionality of the law forbidding same. He was adjudged guilty in the police court and fined. The case was appealed to the court of criminal correction, where Judge Hiram Moore sustained the previous conviction. The case was then appealed to the supreme court of Missouri, where it is now pending.

The attorney was then authorized to proceed against the newspapers publishing the objectionable advertisements. Informations were prepared against all the papers of St. Louis. As here again the constitutionality of the ordinance was brought into question, one paper was selected for prosecution as a test case. Unfortunately, the information was prepared against the least conspicuous of the St. Louis papers, the St. Louis *World*—this through no fault of the attorneys, however, of the society. This paper was fined, and like the case of Dr. King, the case was appealed to the supreme court.

These prosecutions have already borne fruit. The advertisements of these charlatans have been "censored" and made less indecent. The space usually devoted to these advertisements in the public press has been gradually reduced until now it is 50 per cent. less in amount than was formerly the case.

The committee on public health was then authorized to raise funds to carry on this work. About $500 has already been subscribed by members of the society.

March 24, 1906, a resolution was adopted directing the attorney to proceed against all illegal practitioners in the city. April 12, at the meeting in St. Louis of the State Board of Health of Missouri the licenses of two physicians and three midwives were revoked. One of the midwives, Anna Myers, had already been convicted in the state court for criminal abortion. Another, the Newland woman, had been convicted in the federal court for violation of the postal laws. Another midwife, Mary Murphy, had been served with charges by the state board to appear before it and show cause why her license should not be revoked. On request of her attorney her case was continued for trial until the next meeting of the board in Kansas City.

It will be the policy of this committee to secure revocation of license of illegal practitioners rather than convictions in the criminal courts, because the way is easier and evidence can be presented in a broader way than is allowed in the courts of record. In addition, nine midwives have been arrested on informations charging them with advertising to practice medicine. One has already plead guilty and has been fined.

The attorney is now preparing informations against all the incorporated medical companies doing business in the city, where the incorporators live out of town and hire other men to do their work for them. These will be in the nature of "ouster" proceedings. There are about 175 of such companies doing business in the state of Missouri. These informations will be filed next week.

Negotiations have already been started with the postal authorities to punish those using the mails in their indecent and illegal undertaking. The postmaster general has assured the committee of his hearty co-operation. The attorney of the society will also prepare a brief to be submitted to the attorney general relative to the practice of midwifery in general. The attorney is now considering the drafting of a law designed to be far-reaching and to cover all the charlatanry which is not punishable by the laws already on the books.

Medical Aspects of Criminal Abortion.

After the reading of this report, the subject proper of the scientific program was then approached.

Dr. John M. Grant read the first paper, with the above title. In his experience, over 35 per cent. of pregnant women tried to abort. Their excuses are many. One is that there is no life in the fetus, to their minds, until movement is felt; therefore it is no crime. Poverty, drunkenness of the father and ill-health are other excuses. He called attention to the drugs and instruments promiscuously advertised to make women "regular," which are simply thinly-disguised advertisements of abortifacients.

He had treated over 250 cases of criminal abortion, only ten of which were in young, unmarried women. Statistics prove that the people who are in the best shape to have large families try every means to avoid it.

There are two classes of abortionists: (1), the midwives and illegal practitioners; (2), certain members of the medical profession who are generally considered men of repute. The difficulty of detection of the crime lies in the steady refusal of these women to tell who has committed the abortion.

As remedies to stop the tide of this race suicide, Dr. Grant proposed a united effort of the medical profession, the clergy and the legislators. Women should be educated to realize that life exists in the fetus from the time of conception. They should be taught the danger to life of the performance of this operation. The newspapers should not be allowed to print the advertisements alluded to above. There should be conferences of the profession and the clergy.

Religious and Moral Aspects of Criminal Abortion.

Rev. James Sullivan, S. J., of St. Louis University, then read a paper urging that, logically, the regular physician who, with consultation, decides to perform a "therapeutic" abortion is as guilty in the eyes of the law and of God as the man or woman who performs a so-called "criminal" abortion for mere filthy lucre. He denied that the physician has the right to decide that the mother's life is more important to save than the unborn child's. He defended the doctrine of the Catholic church which does not legitimize any form of abortion. To the question that in a case where birth is impossible, must we stand by and lose the life of both mother and child, his answer was that we may not do evil that good may follow. He said that science can not decree the death of a human being in the womb nor out of it.

Criminal Abortion from a Legal Standpoint.

Mr. Fickheisen, assistant circuit attorney of the city of St. Louis, discussed this subject. Two good points in his address were: (1) The law should be changed in regard to the matter of "privileged" communications so that a physician may be allowed to testify what he has learned in the treatment of a case of criminal abortion so that the guilty man or woman who has performed the abortion may be reached; (2) a statute should be enacted in Missouri making the performance of abortion a felony and not simply a misdemeanor, as is the case now. Criminal abortion is at present only a felony when death of the victim follows, making it manslaughter. A statute making all abortions felonies should be put through by the legislature.

DISCUSSION.

In the general discussion that followed several clergymen said that they believed the remedy lay entirely with the medical profession, i. e., that the doctors should brand all whom they know practice abortion and ostracise them in every way.

JUDGE O'NEIL RYAN of the circuit court said that the doctrine of the Catholic church was as indisputable from its legality as it was from a theological standpoint.

NEW YORK ACADEMY OF MEDICINE.

Regular Meeting of the Section on Surgery, held April 6, 1906.

DR. SAMUEL LLOYD in the Chair.

Congenital Dislocation of Patella.

DR. CHARLES GOODMAN showed a boy, 13 years old, whose right patella was freely movable, and when the limb was extended the finger could be inserted beneath the inner margin of the bone. When the limb was flexed the patella overrode the external condyle, and by voluntary contraction of the quadriceps the patella could be dislocated outward completely.

Omental Hernia, with Suppuration; Operation.

DR. FORBES R. MCCREERY presented a patient, 25 years old, who was kicked in the lower abdomen by a horse. Four or five months after a lump appeared in the right inguinal region which worked down into the scrotum. At operation this mass was found to be surrounded by old cicatricial tissue, and while attempting to separate it openings were made into a cavity filled with grumous fluid. The entire mass of omentum appeared to be riddled with small abscesses. The pus had no odor and contained no tubercle bacilli. The pathologist reported that the condition was due to interference with nutrition. There was some thickening of the vessels and small foci of calcification in dead tissue.

Perineal Lithotomy for Large Vesical Calculus.

DR. C. C. SICHEL reported the case of a negro child, $2\frac{1}{2}$ years old, who had an infected foreskin following circumcision. Later, much pus was found in the urine and the child suffered greatly at urination. Pus continued to increase in amount and bladder drainage was instituted. No stone was found. The child improved and left the hospital, but returned later for the cure of an umbilical hernia. At operation a greatly distended bladder was found with a large calculus in its neck freely removable. After operating on the hernia, he closed the abdominal wound and then enlarged the perineal opening and delivered a calculus, of oval shape, measuring $3\frac{1}{2}$ inches by $2\frac{3}{4}$ inches. Calculus of this size was better removed by the suprapubic incision; but in this case the perineum had previously been opened and he also avoided any danger of infecting the hernial wound; therefore, the perineal lithotomy was performed.

Heteroplastic Ovarian Grafting; Pregnancy; Delivery of Living Child.

DR. ROBERT T. MORRIS said that the patient was 21 years of age, began menstruating at 15, and stopped at 19. Previous to the cessation of menstruation the function had been of average character. She was married at the age of 18 and had become pregnant soon after, miscarrying at the third month. During the two years previous to her admission to the hospital she had suffered the common symptoms of menopause. These symptoms had steadily increased and were most marked at the time when the monthly flow should have appeared. A diagnosis of cirrhotic oöphoritis was made, and the patient was asked to remain in the hospital until opportunity was offered to obtain ovarian grafts to replace her own ovaries which were to be removed.

Shortly afterward there was occasion to operate on a patient, who was 33 years old, the mother of three children, for uterine prolapse, the ovaries being normal, except for the congestion common to uterine prolapse. Dr. Morris removed some ovarian tissue in the form of a wedge-shaped ribbon. The grafts were placed in physiologic saline solution at a temperature of 100 F. The ovaries were removed from the first patient with Tuffier's angiotribe, because the ligation methods are apt to be incomplete in securing absolute removal of all ovarian tissue. When the broad blades of the angiotribe close on the pedicle of the ovary, it is crowded away from its seat and rises above the blades, thereby avoiding the possibility of leaving any ovarian tissue behind. He did not allow even a particle of scraping from a detached ovary to fall back into the peritoneal cavity, because a single detached ovum might live long enough to invalidate the experiment. A slit was made through the peritoneum of the broad ligament on either side, parallel with the oviduct. Into each slit was placed a segment of ovary about one-half inch long and one-fourth-inch wide. A single catgut suture was placed so as to hold each graft in place. The grafts were so placed that the cut surface of the ovary lay in contact with the cut surface of the broad ligament, in order that the nutrition of the graft might be maintained through lymph circulation, pending the formation of new capillaries. The uncut surface of the ovary was allowed to project into the free peritoneal cavity, to facilitate free escape of ova. The uterus and oviducts were apparently normal.

About a month after leaving the hospital, the patient was reported as feeling well, except for hot and cold flashes. On

June 18, 1902, four months after the grafting she had menstruated, the menstruation lasting for five days. She did not menstruate again until November 16 of the same year, when she flowed for one day. The following month she flowed for four days. After that menstruation became regular. In March, 1906, the patient was delivered of a daughter weighing 7½ pounds.

Dr. Morris said that in his experiments on animals he has noted a varying degree of tolerance of one animal for the tissue from another. One animal will absorb ovaries of another animal very rapidly, while another may carry the ovaries of a third for several months. He has planned experiments along the line of preparing animals for tolerance of tissues of another animal. He carried on one line experiments suggested by the known principles of hemolysis. A series of rabbits were made immune to each other's serum, and their ovaries were then exchanged. These ovaries absorbed more readily than in animals not immune to each other's serum. Morris has done homoplastic and heteroplastic ovarian grafting in women in 14 cases, and in one case of fibro-nodular oviduct he made a homoplastic graft of the fimbricated extremity of an oviduct. The fimbricated end was fastened to the cornu of the uterus after excision of the nodular area, which included nearly all of the tube. So far as he knew there has been but one case of conception among his grafted patients, and the patient miscarried at the end of the third month. His efforts turned to homoplastic grafting for the purpose of avoiding the precipitate menopause, retaining the influence of the internal secretion of the ovary, and the normal sexual attitude of the patient, in selected cases where for any reason both ovaries have to be removed. There seems to be a fair probability also that pregnancy may sometimes occur.

DISCUSSION.

Dr. C. G. Cumston, Boston, said that Limon in a recent article claims that microscopically two stages followed ovarian grafting. During the first stage the ovary is nourished by the interstitial fluids of the surrounding tissues. These fluids do not reach the central portion of the gland, hence the cortex alone retains its vitality. The medullary zone degenerates and disappears. At the end of three months when their nutrition is again normal, the ovaries again give evidence of functional activity, and take on the appearance characteristic of their physiologic state. In view of these facts a properly performed heterotransplantation of an ovary may result in fecundation and pregnancy.

Dr. E. B. Cragin said that three tests should be applied to Dr. Morris' case: 1. More light might have been thrown on the condition of the ovaries at the time of the removal in regard to the presence of any developing Graafian follicles. 2. Menstruation might be absent for a number of years and yet the woman not attain to the menopause. Such ovaries might have recent corpora lutea. 3. It might be possible that a little of the ovarian tissue remained in the stump in spite of the use of the angiotribe. He thought, however, that Dr. Morris' case would stand the tests and that it is a distinct contribution to science.

Dr. Henry C. Coe believes the case to be one of suspension of ovarian function, rather than one of premature menopause. He spoke of amenorrhea occurring in young women who became unusually obese. With a reduction in their weight and certain treatment the menstrual function returns, although he could not recall an instance of pregnancy following this return of ovarian function. In conservative work on the ovaries he has often noted that where only a small portion of an ovary had been left, there is a decided tendency to atrophy or cystic degeneration, and that menstruation is often irregular or even ceases.

Dr. Herman J. Boldt said that the fact that there were no evidences of functionating ovarian tissue in the sections made by no means proved that there was no functionating ovarian tissue present. Knowing the case and seeing the operation performed, he did not think it likely that any ovarian tissue was left behind. It was most probable and positive that the subsequent menstruation was established and caused by the ungrafted ovarian tissue.

Dr. Robert H. M. Dawbarn said, in connection with Dr. Morris' proposed experiment of injecting the blood of one rabbit into another with the idea of establishing tolerance, that Surgeon Arnold of the United States Navy, published a communication from Metchnikoff's laboratory in which it was found that a small amount of blood from the male animal injected beneath the abdomen of the female animal rendered her sterile, so far as that particular male animal is concerned. This has been tried on dogs and other animals and was found to be true in every instance. Although it has not been tried on human beings, it might open up a new field both for beneficial and dangerous work.

Operative Treatment of Fractures; Description of a New Method.

Dr. Charles A. Elsberg presented patients to show the success which has attended the treatment of fractures by absorbable aluminum cylinders. These cylinders should fit tightly in the medullary cavity, filling it completely. They should be hollow and should have many more perforations to allow the circulation of fluids.

Dr. Robert H. M. Dawbarn has tried the metal magnesium in the form of staples, but found it less absorbable than aluminum.

Dr. A. A. Berg questioned the value of any mechanical contrivance in cases of non-union in bone. The cause should be sought for and treated before good results can be obtained by these methods.

Fractures of the Tarsus.

Dr. Leonard W. Ely presented six patients with fractures of the tarsus and reported eleven cases of fracture of the calcaneum and three of the astragalus. The treatment was by strapping, heat and cold, massage, and sometimes a Whitman brace.

Self-Retaining Trocar and Canula for the Aseptic Evacuation of Distended Viscera.

Dr. Howard Lilienthal described this instrument. The crucial test of its value was shown in a case of chronic intestinal obstruction with acute symptoms. Two punctures were made and nearly a gallon of fluid feces was evacuated without soiling the peritoneum.

TENNESSEE STATE MEDICAL ASSOCIATION.

Seventy-third Annual Meeting, held at Memphis, April 10-12, 1906.

Under the Presidency of Dr. Cooper Holtzclaw, Chattanooga.

(*Continued from page 1216.*)

Cholecystectomy.

Dr. Battle Malone, Memphis, said that practically all surgeons agree that excision of the gall bladder is clearly indicated (1) in primary carcinoma of the gall bladder; (2) in gangrene, phlegmon or empyema of the gall bladder; (3) where the viscus is badly lacerated, as from gunshot wounds, etc.; (4) in impaction of stone in the cystic duct, which can not be displaced; (5) where the gall bladder is greatly thickened and contracted. The operation can be done in the average case just as quickly and in many cases more quickly and with as little danger to the patient as cholecystostomy. After drainage of the gall bladder, there are necessarily adhesions which must be a source of more or less discomfort to the patient. In view of the present accepted theory of the etiology of gallstones, it would seem that the adhesions by constant tugging on the gall bladder tend to cause a recurrence of cholecystitis and the reformation of stones. As illustrative of this, he reported two cases that came under his observation in which cholecystectomy was performed. While he would not advocate the removal of the gall bladder as a routine measure, he believes that if the operation is done more frequently, there will be less unpleasant postoperative symptoms and fewer patients will be subjected to a secondary operation. He feels less anxiety for the future of a patient whose gall bladder has been removed than when it has been drained.

DISCUSSION.

DR. JOHN L. ALLEN, Brownsville, endorsed the position taken by the essayist with regard to removal of the gall bladder. In connection with drainage of the gall bladder, if a stone is impacted in the cystic duct, drainage would give more trouble than the removal of the gall bladder.

DR. J. A. CRISLER, Memphis, quoted Dr. Murphy as saying that the ideal operation should be drainage of the gall bladder, leaving the gall bladder itself in its proper place; that it acts as a drainage tube. He thinks the removal of the gall bladder without drainage is almost a useless operation, unless the operation is done for gangrene or for gunshot wound or for some traumatic lesion.

DR. M. C. MCGANNON, Nashville, said that he has come to the conclusion that cholecystectomy is being done less and less. He does not think it is essential to remove every gall bladder that is found to be diseased. A better method of dealing with this subject is to study pathology as it is found.

DR. J. A. GAINES, Nashville, emphasized the fact that empyema of the gall bladder, unless the organ is markedly contracted, does not ordinarily demand cholecystectomy, but drainage. However, cholecystectomy is often indicated in gangrenous or traumatic conditions.

DR. LUCIUS E. BURCH, Nashville, said that in a case of gangrene or gunshot wound of the gall bladder, the gall bladder should be removed. On the other hand, if there are stones in the gall bladder, without any involvement of the cystic duct or of the common duct, drainage should be instituted.

Coprostasis.

DR. T. J. HAPPEL, Trenton, reported the case of a married woman, who gave a history of indigestion, with suffering in defecation, accentuated at each menstrual period. The patient's condition was such that it was necessary to resort to laparotomy. The author emphasized the following points: 1. The necessity of a careful examination by rectum and vagina of all cases presenting evidence of long-continued disturbance of the bowel not relieved by medicinal measures. 2. When this is refused, to dismiss the patient so as to assume no further responsibility. 3. If the patient remains in one's care, insist on laparotomy being done promptly, not allowing the patient to get *in extremis* before an operation is permitted. 4. In this case the gut was found so full that it could not be moved without tearing it. 5. The rapid improvement in the condition of the patient after operation. 6. The passage of feces from the rectum after the formation of an artificial anus. 7. The apparent discharge of feces from the bladder on two occasions, and then the cessation of this condition, with the complete stoppage of all leaks into the bladder. 8. Recovery of the patient from what seemed to be, when the abdomen was opened, a hopeless condition.

DISCUSSION.

DR. JOHN L. ALLEN, Brownsville, reported two similar cases, although their condition was not so marked or distressing. It was difficult, however, to move the bowels of these patients, even with enemas. The condition was due to an hypertrophy of Houston's valves, and he succeeded in curing both patients by clipping the rectal valves. Since then he has resorted to this procedure in many cases of obstinate constipation, with successful results. He is inclined to the belief that fully 50 per cent. of the cases of constipation are due to a thickening of these valves.

Nephrolithotomy, with Subsequent Nephrectomy.

DR. W. D. SUMPTER, Nashville, said the early recognition of renal calculi is important to prevent atrophy, hydronephrosis, infection, pyonephrosis, perinephritic abscess, fistula, anuria, and a timely operation before the patient is in a weakened state is desirable; yet the difficulty is clearly shown in Doran's report that in twenty-four kidneys and stones found, only 11 had had symptoms of calculi. Aseptic concretions may remain a long time, with no evidence of their presence. The author's patient had no definite pain when the four calculi were in the pelvis of the kidney, until the gravid uterus of six and a half months had pressed on it, and an abscess resulted. The quiescent state of the kidney, with sixteen stones remaining after nephrolithotomy, was corroborated by the citation of similar statistics. Although pain is of great diagnostic value, it is often absent or deceptive. At no time was blood detected in the urine. Frequent urination was absent until two weeks before nephrectomy, but never necessitating emptying the bladder during the night.

In nephrectomy for suppurating kidney, drainage is of great importance. Whatever the renal lesion, whatever the incision chosen, careful, conservative methods, especially avoiding the causation of shock, which is the greatest factor in the fatal termination of kidney surgery, will be productive of results that are satisfactory in the hands of the painstaking surgeon.

The Day's Work.

DR. COOPER HOLTZCLAW, Chattanooga, selected this subject for his presidential address. He said that the day's work in the life of a busy practitioner of medicine brings forth many things for consideration. It brings many thoughts, good, bad and indifferent, mostly bad and indifferent. It brings him nearer to actual life than it does most men, and if Pope is correct in saying that "The proper study of mankind is man," certainly the physician's day's work gives greater opportunity to observe both sides of life, the outside as well as the inside. In order that we may be better fitted to more correctly and accurately observe the wonderful phases and phenomena of life and death, it is proper that physicians should be better educated and prepared for this. A college education and a four-year medical course are absolute prerequisites to the practitioner, but to be most successful he must possess the heart of a lion, the brain of an Apollo, the eye of an eagle, and the gentle touch of a lady's hand.

Extrauterine Pregnancy.

DR. RICHARD BARR, Nashville, reported a case of double uterus, with extrauterine pregnancy. The patient was a negress, aged 17 years. The specimen exhibited showed a distinct double uterus, with two cavities without connection. Each cavity is connected with the corresponding Fallopian tube, and each must have opened separately into the vagina, although careful search of the vagina failed to show the opening of the right organ. The blood cyst of the right tube was taken to be an extrauterine pregnancy, with intratubal hemorrhage, and death of the ovum. The unusual features about the case are the double uterus and extrauterine pregnancy; the fact that the pregnancy had occurred by a route almost impossible of demonstration after removal of the uterus; while on the other side the way was wide open, so to speak. The pregnant tube was twisted around, swinging forward, so that it pointed to the left and rode on the anterior wall of the uterus, while its ovary lay in Douglas' cul-de-sac under the uterus, and was so uninvolved as to be without adhesions to any structures. The shutting-off of Douglas' pouch by adhesions left the pocket which contained the right ovary perfectly normal. The cecum and appendix were mobile; the latter organ was located in a vertical position just behind the median line of the abdomen.

Traumatic Lesions of the Brain and Skull.

DR. JERE L. CROOK, Jackson, limited his remarks to fractures of the vault of the skull. The symptoms of these injuries vary materially. All suspected cases are to be operated and inspected. The only occasion where doubt can exist is in fracture of the inner table alone, and here, if there are any localizing symptoms or evidence of intracranial injury, the use of the trephine is justified and demanded. If the case be one of depressed fracture, a medium-sized trephine should be used and the depressed portion elevated, thus restoring the normal convexity of the skull. If the fracture is a comminuted one, the particles should be entirely removed and the edges of the fracture smoothed with the rongeur forceps. The author reported four cases of traumatic lesions of the skull and brain, all of which demonstrated the necessity for prompt exploratory operations in all instances of cranial injury when a positive diagnosis can not be made from the original wound. He said the truest conservatism is that which gives the patient the best chance for a rapid and perfect recovery.

Osteosarcoma of the Lower Jaw.

Dr. Duncan Eve, Nashville, removed this tumor of the jaw, which was enormous in size, being 10½ inches in its vertical diameter and 9 inches in its transverse, from a negress. The surface of the tumor was perfectly smooth, and the mass was hard and incompressible over its entire extent. The skin over the tumor was intact, and there was no enlargement of the superficial veins or infiltration, except on the cheek of the affected side.

Local and Regional Anesthesia in Rectal Surgery.

Dr. A. B. Cooke, Nashville, pointed out some of the advantages of local anesthesia in rectal surgery. It is simple, safe and effective. It eliminates the dangers and discomforts of general anesthesia. Pain at the time of operation is usually absent, and when present is so slight as to be easily borne. Postoperative pain is less by far than after the old methods. The time required for the operation is greatly reduced. Confinement to bed is rendered a matter of expedience rather than necessity. The period of detention from business is diminished fully one-half. Under this method the hospital becomes a convenience and luxury rather than a dreaded essential. It is a thoroughly reliable means of affording relief in many cases which otherwise would be unsuitable for operation. It robs these operations of their terrors, and makes it possible to reclaim this work from the hands of the "no-knife advertisers."

Doctor, Druggist and Proprietary Medicines.

Dr. J. L. Andrews, Memphis, said that the greatest danger in "patent medicines" is in their indiscriminate use. As conditions are now, exactly the same thing is true of proprietary medicines. He introduced a resolution, which was adopted unanimously, to the effect that the society looks with favor on the establishment of a drug store for physicians' prescriptions and the sale of staple drugs and sickroom accessories; no counter prescribing; no patents; no side lines, cigars or soda water.

The druggist derives only a small profit from the sale of "patent medicines." Recently an elaborate system was put in operation by which any druggist, who varies in the slightest particular from a fixed price, can be detected, and in the future he can buy no more of the system's goods. In the face of these restrictions the druggists ought to decline to sell "patent medicines." Let the department stores have the "patent medicine" business. According to a recent statement of a "patent medicine" maker, women buy and use nearly all the "patent medicines" that are sold. In the department stores they can buy "Rupena" and Lydia Pinkham's Pills at bargain day prices to their heart's content.

There can be no question that physicians are now prescribing proprietary medicines to an extent that is reprehensible. Give the druggist a chance to elevate and dignify his entirely worthy profession by efforts at scientific and elegant pharmacy. The medical student ought to be taught everything possible without drugs. Dignify extemporaneous prescription writing. Teach more medical chemistry. The physician ought to be able to tell at a glance whether or not his prescription has been properly compounded. The druggist is overworked and underpaid, and he is in favor of any legitimate measure which will alleviate these conditions. Dr. Andrews has a firm conviction that the druggist's best hope of professional elevation and advancement lies with physicians, and it is the plain duty of every physician to exert himself to bring about this end.

Surgical Treatment of Uterine Fibroids.

Dr. J. W. Barksdale, Memphis, claimed that operations on fibroids have a mortality of approximately 5 per cent., which is not very much in excess of the average percentage of cases in which the abdominal cavity is invaded for all causes; yet Dr. T. B. Eastman, Indianapolis, in 117 cases operated on, found 43 that presented complications that might have terminated fatally. The author endorsed the position taken by some of the foremost workers in the field of gynecology who lay down the broad rule that all fibromyomata should be removed as soon as diagnosed.

Appendicostomy.

Dr. G. C. Trawick, Nasnville, said that the purpose of the operation is to utilize the appendix as a means of irrigation and the introduction of medicaments through its lumen into the large intestine. That this procedure is justifiable in cases of chronic colitis and sigmoiditis after internal medication and high irrigations have proved ineffectual, the author demonstrated. The most usual disease for which this operation is performed is amebic colitis; but it has also been done for syphilitic ulcerations of the colon, multiple papilloma, chronic diarrhea with bloody stools, and mucous colitis. The author's experience with this operation has been very favorable. Out of twenty-four reports of this operation there have been 20 cures, with one death, and one result unknown, and one death from pulmonary tuberculosis.

Treatment of Amebic Dysentery.

Dr. John L. Jelks, Memphis, disinfects the entire colon by flushing through a tube of his own design with an acid formalin solution, fifteen to thirty minims of formalin, and a teaspoonful of boracic acid to each quart of warm water, which fluid passes out through the drainage tube. He then introduces through a small tube with a piston syringe one ounce of olive oil and a dram of bismuth subnitrate. This latter mixture relieves the painful effects of the formalin solution, and furnishes a protective coating to be inflamed viscus. Later, when the patient is placed in the genupectoral position, the proctoscope or sigmoidoscope is introduced and all ulcers are cauterized with silver nitrate, thirty to sixty grains to the ounce. The entire inflamed area is then sprayed with a mild alkaline solution, dried and insufflated with boracic acid.

Other Papers Read.

The following papers were also read:

"The Significance of Disturbed Reflexes," by Dr. Michael Campbell, Bearden; "Hemorrhage in and Around Nerve Tissue," by Dr. Hazel Padgett, Nashville; "Injuries of the Eyeball, with Report of Cases," by Dr. J. W. Price, Memphis; "Pterygium, Its Relation to the Refraction of the Eye," by Dr. George H. Savage, Memphis; "The Treponema Pallidum of Syphilis," by Dr. Wm. Litterer, Nashville; "Vesical Fistulas in Women," by Dr. W. A. Bryan, Nashville; "Recto-Vaginal Plastic Surgery," by Dr. M. C. McGannon, Nashville; "Notes on Cases of Gastroenterostomy for Chronic Digestive Disorders," by Dr. W. D. Haggard, Nashville; "What Are the Safest Criteria for the Estimation of Renal Lesions?" by Dr. R. Wallace, Chattanooga.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Uremia.

In considering the treatment of uremia, A. R. Edwards, in the *Therapeutic Gazette*, states that no systematic outline of treatment can be given, as the actual causes of uremia are imperfectly known. On the basis that it is an autointoxication, associated with circulatory changes or increased intracranial pressure, he considers the treatment from the following different standpoints:

First.—Prevention. All irritating foods, excessive eating, intemperance, overwork, and tendencies to dyspepsia are considered in this class.

Second.—Rest and Exercise. The kidneys should be relieved by rest in the horizontal position, as the erect position not infrequently causes an increased albuminuria. The rest should be absolute as long as the heart is weak, the urine scanty or the edema considerable. Rest in bed lessens the amount of waste products to be eliminated by the kidneys, and also protects the skin and dilates the cutaneous vessels, and in this way increases its function. The vascular tension in the renal circuit is also by this means very much lessened. He speaks in this connection of treating cases of parenchymatous nephritis with rest in bed for a year, with absolute recovery. Fatigue

and exposure to damp and cold must be avoided, and relative rest and warm clothing are necessary in cases of moderate severity. He states in this connection also that practitioners do not sufficiently insist on psychical as well as physical rest. In men who are undergoing severe mental strain the nephritis markedly decreases and sometimes entirely disappears when this nervous tension has been avoided.

Third.—Springs and Climate. Only those individuals without edema and without serious heart involvement should be sent to medicinal springs. A change of climate, however, to one that is more equable and warm is advised.

Fourth.—Diet. The diet must be non-irritative, it must not tax the kidney in its elimination, the circulation must not be burdened, and at the same time the nutrition must be maintained. Disease of the glomeruli alone may be compensated by vicarious excretion of water through the lungs, skin and intestines, but the disease of the tubules whose function is the elimination of end products of the albuminoid metabolism can not so well be compensated by other functions. Consequently there is a marked necessity for the limitation of albuminous foods, and their place is taken by fats and carbohydrates. The albuminous substances are restricted only to spare the irritation of the excreting renal cells. No absolute rule can be laid down for all cases, consequently the amount of albumin intake must correspond to the condition of the individual case. He mentions the fact that too often the severity of a nephritis is measured by the amount of albumin present in the urine, which is a mistake. He recommends fats in the form of butter, olive oil and cod-liver oil, cream, etc., as very important articles of diet. Anemia and disturbed nutrition are perhaps the most distinguishing features of the parenchymatous form of nephritis as contrasted with the interstitial type. Consequently the individual patient must be considered and not the type of the disease. He speaks of a strictly milk diet as being too bulky, over four quarts being necessary to maintain nutrition; consequently it may cause marked gastrointestinal disturbance; it lacks iron, and the four quarts contain an excess of proteids; it contains too much water, thereby overloading the blood and straining the heart. The presence of phosphates and chlorids also tends to overtax the kidneys. He, therefore, regards the purely milk diet as one that is much abused. He recommends from one to one and a half quarts of milk, with a pint of cream, fats and carbohydrates, as a diet that will meet the needs of metabolism. In order to prevent the elimination of phosphates by the kidneys, he recommends that from 5 to 10 grains of calcium carbonate be given internally in order to precipitate the phosphates in the intestine.

Regarding the meat diet, the average amount recommended by him, as previously recommended by von Noorden, is 100 grams daily. He does not distinguish between the red and white meats, as the purin bodies in each are about the same. Some meat is better than too much vegetable diet, as the latter is liable to overload the stomach and bowels, and in that way to bring about intestinal disturbances. All substances containing nitrogen should be restricted. This applies not alone to meat, but to leguminous vegetable and to some extent to milk. He advises that not more than two eggs be allowed a day. He mentions the fact that raw eggs increase and in some cases induce albuminuria. The chlorids are especially to be avoided in the parenchymatous form of nephritis when edema is present. Irritants, such as cheese, relishes, horse radish, onion, rhubarb, asparagus, spices, sauces, broths, beef tea and alcoholics should be absolutely avoided. Tea and coffee should be taken only with the greatest moderation, since they aggravate or tend to produce nephritis.

Fifth. Water. An excessive amount of water overtaxes the heart and renal system. Water can only be excreted by the kidneys when the blood pressure is increased, and many weak hearts, according to the history of cases, are produced by prolonged and excessive water drinking. The water in most of these cases should be limited to about 1,500 c.c. daily.

Sixth.—Symptomatic Therapeutic Measures. Diuretics, as a rule, should be avoided in the treatment of nephritis. In some cases diuretics are indicated with increasing edema, scanty urine and imminent uremia. In such instances he recommends cream of tartar and potassium citrate as alone being safe. They are supposed to abstract water from the tissues and to convert urea and uric acid into more readily excreted substances. Basham's mixture as a tonic and diuretic may be given in doses ranging from 1 to 2 drams (4-8) each.

Seventh.—Hydrops. Edema in so many cases threatens suffocation by pulmonary or laryngeal disturbances, increases the danger of secondary infection, such as erysipelas, and embarrasses the circulation by pressure on the afferent capillaries, and, therefore, demands treatment. It also interferes with digestion and increases the dangers of uremia to a marked degree. Edwards speaks of the value of cathartics as good eliminants of fluids as well as solids, at the same time drastic purgatives must be given great care. Sweating is not so much in vogue as in former times. While the reciprocal functions of the skin and kidneys are of great value, profuse sweating eliminate fluids rather than solids, and, quoting Leube, he holds that sweats concentrate the blood and, therefore, rather predispose to uremia. The symptoms under such circumstances may show at least great aggravation, and in some cases a fatal issue may result, rather than relief of the condition. He therefore recommends the old-fashioned full warm bath, together with the hot air or alcoholic sweat. With this method he recommends the application of the icebag to the head to prevent brain congestion, commencing with the water at the body temperature and raising it five or six degrees. After the patient has been in the bath for from twenty to thirty minutes he may be removed and wrapped without drying in the blankets. Edwards speaks of pilocarpin as an unsafe preparation. It tends to produce profuse salivation, vomiting, diarrhea, syncope and sometimes pulmonary edema. He regards incisions as superior to all other measures for the relief of the edema by mechanical means, as it extracts the fluid from the tissues with the urea and other solids. He recommends the employment of deep incisions over the lower extremities whenever the hydrops is extensive. In this way quarts of fluid may seep out during the first twenty-four hours, and one is well justified in thus incising the legs, regardless of the fact that there is always danger of an occasional infection. Sweats and drugs can never produce the same result, and the incision is less dangerous than punctures or the Southey capillary tubes.

TREATMENT OF THE CIRCULATION.

The treatment of the circulation consists in watching the heart and administering proper stimulation, and the avoidance of those things which tend unnecessarily to aggravate the heart's action. Whenever cardiac overaction is present, as is especially observed early in uremia, the high tension may be corrected by vasodilators. The iodids are recommended when no urgency is present. When extreme tension and uremia are at all likely to exist he recommends the tincture of veratrum viride in from 5 to 10 minim (.30-.65) doses every half hour for three or four doses; or large doses of nitroglycerin grs. 1 50 to 1 20 (.0012-.003). Bleeding may relieve the intracranial blood pressure, and in this way remove some of the uremic symptoms for a time. Vomiting and diarrhea may demand gastric lavage and colonic flushings, but it should be kept in mind that they are often vicarious as well as cerebral and should not be checked too quickly. Convulsions demand the administration of morphin hypodermically or chloral in 15-grain (1.00) doses every hour for not more than four doses. These preparations, however, should be used with great caution. As a rule, bromids act too slowly.

Treatment of Acute Nephritis.

Prof. A. Robin, in *Med. Press*, recommends, in the treatment of acute nephritis or edema of the kidney, that blood letting be resorted to in the acute stage. Milk and infusions, he states, only tend to stimulate an organ which can not work. Instead of stimulating the function of a diseased gland, the smallest possible amount of work should be given to it. The patient should be permitted to drink only as much pure water as will relieve his thirst.

Wet cupping or leeches are recommended by Robin, applied over the region of the kidneys. Purgatives are indicated and if these do not act sufficiently the following mixture is recommended:

℞ Jaborandi fol. ..... ℥i 4
Aquæ bullientis ..... ℥vi 180
M. Ft. infusum. Sig.: One-third the amount at a dose, and the same size dose repeated every half-hour.

This will produce some salivation and profuse sweating.

Molliere, in the same periodical, recommends an ointment containing pilocarpin, applied over the surface of the body, as follows:

℞ Pilocarpinæ hydrochlor. ..... ℥i 4
Lanolini ..... ℥iv 120
M. Ft. unguentum. Sig.: Apply locally to the abdomen and lumbar region.

To stimulate the liver, Robin recommends a few drops of ether three or four times a day, given in a capsule. Cold enemas are of value to stimulate the intestines. To correct the dyspnea an inhalation of the nitrite of amyl, a pearl broken on a handkerchief and inhaled, is advised.

Treatment of Gout.

The following combinations are recommended by *Clin. Therapeutics* in the treatment of gout:

℞ Potassii iodidi ..... ℥ii 8
Potassii bicarb. ..... ℥vi 24
Vini colchici ..... ℥ii 8
Aquæ camphoræ ..... ℥xii 360
M. Ft. mistura. Sig.: One tablespoonful three times a day, after meals, in a wineglassful of water. Or:

℞ Tinct. seminis colchici
Tinct. aconiti rad.
Tinct. guaiaci
Elix. simplicis, āā ..... ℥ss 15
M. Sig.: One-half a teaspoonful in water after meals.

The following combination is recommended, administered in the form of pills:

℞ Ext. colchici acetici ..... gr. xv 1
Ext. colocynth. comp. (B. P.)
Pulv. ipecac. comp., āā ..... gr. xviii 1|20
M. Ft. pil. No. xii. Sig.: One pill night and morning. Or:

℞ Ext. colchici acetici ..... gr. vi |40
Ext. rhei
Ext. aloes, soc., āā ..... gr. v |30
Ext. belladonnæ ..... gr. i |06
M. Ft. pil. No. vi. Sig.: One pill twice a week at bedtime.

As a liniment in acute gout the following combination is recommended:

℞ Morphinæ hydrochlor ..... gr. x |6
Linimenti belladonnæ ..... ℥iii 90
M. Ft. linamentum. Sig.: A teaspoonful mixed with a tablespoonful of hot water and applied on lint under oil silk every four hours. Or:

℞ Atropinæ ..... gr. iii |20
Morphinæ hydrochlor. ..... gr. xv 1
Acidi oleici ..... ℥i 30
M. Ft. linimentum. Sig.: To be painted over the painful joint and the joint wrapped in cotton wool.

Medicolegal

Liability of Imbecile's Estate for Medical Services.

The Court of Appeals of Kentucky holds, in D. M. Smith's Committee vs. Forsythe, that, as to a physician's claim, so much of it as was a reasonable charge against the imbecile for necessary medical services to himself and family should have been adjudged against this committee, to be levied of assets not exempt from execution. It says that for necessaries furnished to a lunatic and his family a recovery of their value will be allowed, even though his condition was known by the other party. A lunatic is liable for necessaries, not on his express contract, but on the one implied by law.

Validity of Physician's Claim Allowed in Part.

The Court of Appeals of Kentucky says, in Center's Administrator vs. Breathitt County, where the fiscal court allowed $200 on a physician's claim for $650 for treating twenty-four cases of smallpox under employment of the county board of health, that it was insisted that the physicians acting as the county board of health had not been properly appointed, or at least that no record of their appointment was produced. But the court considers it enough that the proof showed that they were at least de facto (acting) officers, were acting as a board of health, and were recognized as such by the state board. Lastly, it was urged that the physician received the $200 allowed him by the fiscal court, and, as it was allowed in full of the claim, he, when accepting it, necessarily took it on the terms on which it was allowed, and that he could not for that reason sue the county for a greater allowance. But the court says that there was no evidence that he accepted the $200, or that it was paid to him. The only evidence was that the account in the Circuit Court was credited with the sum of $200 allowed by the fiscal court. The credit may have been given on the idea that this much of the claim was no longer in controversy. In order to raise this question the defendant must show that the $200 was paid to the plaintiff under the order of the fiscal court.

Privilege Where Third Person Present at First Visit.

The Court of Appeal, First District, California, says that it was claimed in the case of Murphy vs. Board of Police Pension Fund Commissioners, that error was committed in sustaining the defendant's objection to a question asked of a physician for the purpose of showing statements or information given by a policeman at the time he attended him after he had been fatally injured. It seemed to be conceded that the object of the question was to obtain information acquired by the physician in attending the policeman, which was necessary to enable him to prescribe or act for the patient. The California Code of Civil Procedure expressly provides that a physician can not be examined in such cases, and the court has so held. It was insisted, however, that this information and statements were given in the presence and hearing of the patient's wife, the plaintiff here, and hence that they were not privileged because made in the presence of a third person. But, the court says, the question was not confined to what was said at the first visit of the physician and in the presence of the plaintiff and during that visit. The physician made in all about twenty visits. No one was present at any of the visits after the first one except the physician and the patient. The question asked included all of the time during which the patient was under the care of the physician, and hence the question did not come within the exception claimed by the plaintiff.

Individual County Officers Can Not Employ Physician.

The Supreme Court of Wisconsin says that in the case of Hittner vs. Outagamie County, an action brought by a physician to recover $317 for professional services and medicine furnished to an alleged poor person, the plaintiff charged that he was employed by three members of the county board and the district attorney of the county to furnish this aid and care. It was not alleged that these officers were given authority by the county board to employ the plaintiff or any other person in providing county aid to poor persons. There is nothing in the provisions of the statues under which poor persons are to be relieved at the expense of the county, indicating that individual members of the county board or the district attorney have any authority or power to act for the county, unless express authority be granted them by the action of the county board. As held in the case of Patrick vs. Town of Baldwin, 109 Wis. 342: "The statute creates a liability to relieve destitute persons, but not a liability to individuals who may voluntarily perform that service. It empowers appropriate agents of municipalities to make their liability effective by necessary contracts to that end, and imposes on such agents the duty to exercise such power. . . . Performance of that duty by the person designated by law is absolutely essential to create a binding obligation on the municipality to compensate one for relieving a poor person legally entitled to relief at its expense." It appearing that the county officers whom the plaintiff alleged employed him to furnish the relief at the county expense had no authority to make such a contract, the complaint must be held to state no cause of action.

Making Autopsy in Order to Procure Burial Permit.

The Court of Appeals of Kentucky says, in the case of Meyers vs. Clarke and others, which was brought by a mother

to recover damages for an alleged unauthorized autopsy on the body of her daughter, who had died suddenly at a charity hospital to which she had been sent the day before by the city, that the mother and stepfather were notified of the death. The stepfather employed an undertaker to go to the hospital and take charge of the body and remove it to the girl's home and prepare it for burial. The undertaker, or one of his assistants, went to the hospital, and was told that the body was in the morgue, and after conference with the interne at the hospital, went to the home of the girl and notified the stepfather that the body was in bad condition and that a speedy burial was necessary, and suggested that the physicians at the hospital had to make an autopsy to ascertain the cause of death in order to procure a burial permit from the board of health. Before he could report to the physician in charge of the hospital what the stepfather had said, two physicians took it for granted that there were no objections, because of the silence of the undertaker's assistant, and proceeded to hold an autopsy, which disclosed that the death was from perforation of the bowels, caused by typhoid fever. The jury were instructed that they should find for the plaintiff, unless they believed from the evidence that the physicians in making the autopsy did so for the sole purpose in good faith of ascertaining the cause of death in order that they, or one of them, might be able to correctly give a certificate stating the cause of death for the purpose of obtaining a permit for the burial of the body. They should also find for the plaintiff, unless they believed from the evidence that the autopsy was properly and decently performed with due regard to the sex of the deceased, and without making any unnecessary incisions into, or mutilations of, the body. If they found against the two physicians, they should also find against the undertaker, provided they further believed from the evidence that the undertaker, after having custody of the body, consented that an autopsy might be made, and voluntarily gave to either of the physicians, or both of them, permission to make the autopsy. But, if they believed, from the evidence, that the physicians in making the autopsy made it decently, with due regard to the sex of the deceased, making no unnecessary incisions into or mutilation of the body, and that the autopsy was made in good faith for the purpose of ascertaining the cause of death in order that such a certificate might be given as would procure a permit for the burial of the body, the jury should find for the defendants. The court holds that these were proper instructions, and affirms a judgment for the defendants. It says that there was nothing in the record to show that the undertaker or the physicians purposely mutilated or disfigured the body, but that their sole purpose was to comply with the rule of the board of health, so as to enable the undertaker or physicians in authority to procure a burial certificate, which was required by the board of health under the charter and ordinances of the city. The court sees no reason in law or otherwise why the city authorities or the board of health should not make the requirements as above set out.

Current Medical Literature

AMERICAN.

The articles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 11

1 Bacteriological Clinic on Gustave Flaubert. G. M. Gould, Philadelphia.
2 *Saline Beverages in Typhoid Fever and Their Effects on Heat Dissipation. J. B. Todd, Syracuse, N. Y.
3 Diagnosis of Surgical Diseases of the Kidney. A. A. Berg, New York.
4 *Turbinectomy. E. H. Griffin, New York.

2. **Saline Beverages in Typhoid Fever and Their Effects on Heat Dissipation.**—Todd declares that if a proper amount of fluids and alkaline salts is given in the earliest stage of the disease they will prove of advantage. If they are withheld, however, the efforts of the protective forces of the body are hampered. The germicidal powers of the blood are preserved by saline beverages. If water is not given in abundance, heat dissipation is lessened. Todd administers a saline beverage, consisting of eight ounces of water, ten grains of sodium chlorid, five grains of potassium bicarbonate and a teaspoonful of lemon juice, which produces a mild effervescence. There is about two-thirds of a grain of free citric acid in each dose.

4. **Turbinectomy.**—Griffin does not believe in complete turbinectomy. He declares that only so much of the bone should be removed as is necessary to restore the normal canal and to give back to Nature the proper function of the nose. The great objection to the complete operation is that it makes the passage too large and removes something which belongs there and which has a function to perform. Partial turbinectomy restores the normal anatomy.

New York Medical Journal.

April 11

5 Intraperitoneal Shortening of the Round Ligaments. J. M. Baldy, Philadelphia.
6 Relation of the Visiting and House Staff to the Care of Hospital Patients. W. G. Thompson, New York.
7 The Convalescent Branch Hospital and Its Relation to Hospital Reform. S. S. Goldwater, New York.
8 Need for Accuracy and Uniformity in the Reports of Hospitals. F. A. Cleveland, New York.
9 *Technics of the Radical Tympanomastoid Operation when Complicated by the Anterior Position of the Sigmoid Sinus. W. S. Bryant, New York.
10 The Physician's Duty to His Patient. W. Lindley, Los Angeles.
11 Aims and Limitations of Intranasal Surgery in the Treatment of Chronic Non-suppurative Affections of the Middle Ear. T. J. Harris, New York.
12 *Influence of Certain Antipyretics on Nitrogen Metabolism. H. Morgenbesser, New York.
13 Two Cases of Postpartum Eclampsia Due to Diabetes. S. J. Essenson, New York.

9. **Radical Tympano-Mastoid Operation.**—Bryant reports several cases to show that the idea which is more or less prevalent in the profession that the radical operation is seriously complicated when the sigmoid sinus approaches the external auditory meatus is unwarranted. The author describes his method of operating fully.

12. **Influence of Antipyretics on Nitrogen Metabolism.** The results obtained by Morgenbesser differ in many respects from those reported by other investigators. For sodium salicylate he did not get as high an increase in the total nitrogen, only 9 16 per cent., while he obtained no increase in uric acid; in fact, a slight diminution. In the case of quinin he obtained a total nitrogen decrease of 13 to 19 per cent., urea decreased 22 to 28 per cent., uric acid decreased 40 to 50 per cent., purin bases decreased 40 to 50 per cent. In the case of acetanilid he obtained: Total nitrogen increased 14 to 21 per cent., urea increased 19 to 35 per cent., uric acid increased 12 to 44 per cent. The metabolism decreased after ceasing the administration of acetanilid.

Boston Medical and Surgical Journal.

April 12

14 Methods and Aims of the Physician. E. O. Otis, Boston.
15 *Traumatic Defects of the Skull, Their Relation to Epilepsy: A Clinical and Experimental Study of Their Repair. D. P. Allen, H. L. Sanford and D. H. Dolby, Cleveland, Ohio.
16 Defensive Properties of the Organism. S. C. Dickerson, New Bedford, Mass.

15. **Traumatic Defects of the Skull.** The authors urge that all traumatisms to the skull resulting in bone defects should be repaired as soon as possible, not awaiting the possible development of epilepsy, and should epilepsy follow trauma, thus making the removal of bone necessary for its relief, the defect caused by operation should be repaired at once. The method proposed by Allen for covering defects of the skull is as follows: The scalp is removed from over the defect in the skull and the connective tissue covering the brain is carefully dissected away. In certain cases in which the injury to the brain tissue has occurred as the result of traumatism, it may be necessary to trim away a portion of the brain with the scissors, since the connective tissue may be firmly connected with the brain tissue itself. The borders of the opening are carefully examined to see if any portion of the bone projects downward, and if so it is removed by means of Rongeur forceps. All hemorrhage should be controlled before the bone flap is inserted.

The scalp is removed from an added area of the skull of equal size with the opening, care being taken that the peri-

steum covering the skull is left intact and that the portion f skull laid bare is as thick as possible. Thus the posterior arietal region is preferable to the temporal region. On the rea thus laid bare a circular or elliptical incision is made. locking out a portion of periosteum equaling in form and size ie defect which is to be covered. A sharp, narrow chisel is hen employed to split from the outer surface of the skull ie portion of bone adherent to the overlying periosteum. By lacing the graft thus obtained between two gauze sponges noistened in warm normal salt solution and laying it on the able it may be flattened out by a few slight blows of the nallet. The plate of bone thus prepared is laid on the open- ig in the skull, the bone being next to the brain. The wound s then closed by drawing over it the scalp and suturing it oosely in place. A cigarette drain made up of gauze and sur- ounded by gutta percha protective tissue is inserted through ie incision at the dependent point, so that any excess of lood may be drained away into the dressing. The dressings re changed ordinarily on the second day in order to remove ie cigarette drain, after which a second bandage is applied. his bandage remains in place for perhaps six or eight days nger, or until the wound has entirely healed. By this method ven patients have thus far been operated on.

Lancet-Clinic, Cincinnati, Ohio.

April 14.

17 *What Is the Present Status of Electricity as a Therapeutic Agent in Gynecologic Practice? C. D. Palmer, Cincinnati.
18 Alkaloids in Therapeutics. W. F. Waugh, Chicago.
19 Problems Concerning the Use of Alcohol. T. D. Crothers, Hartford, Conn.
20 *Ether Anesthesia by the Drop Method. F. N. Shipp, Columbus.

17. See abstract in THE JOURNAL, June 17, 1905, p. 1958.

20. **Ether Anesthesia by Drop Method.**—During the past ourteen months Shipp has administered ether 337 times by the pen-drop method. The average time of inducing anesthesia as 6 minutes and 10 seconds. The time varied from 40 seconds o 12 minutes. Initial vomiting did not occur in a single case. n 65 per cent. of the cases there was no struggling or chok- ng, in the remaining 35 per cent. excitement and choking was f a mild degree. No patient needed stimulation, the cause of hich could have been attributed directly to the anesthetic. o operation was delayed, even for a moment, on account of ie condition of the patient. Forty-eight per cent. of the pa- ients had no nausea or vomiting following the administra- ion; 40 per cent. were slightly nauseated, vomiting once or wice, but were comparatively free from all sickness within wo or three hours. A fraction of over 11 per cent. were quite l, being nauseated from 12 to 24 hours. In less than 1 per ent. severe vomiting followed, lasting from 3 to 6 days. There as no postoperative pneumonia in any case. Nephritis oc- urred in the case of three patients; one was a woman suffer- ng from melancholia, which developed during pregnancy; the econd was a patient suffering from appendicitis of ten weeks' tanding; the third was a woman with a large uterine fibro- yoma. In all three patients the physical condition was an xtremely poor one.

St. Louis Medical Review.

April 7.

21 Lycanthropy. (To be continued). J. Knott, Dublin, Ireland.

The American Journal of the Medical Sciences, Philadelphia.

April.

22 Recent Advances in the Physiology of the Digestive Organs Bearing on Medicine and Surgery. W. B. Cannon, Boston.
23 Hepatoptosis or Floating Kidney. J. F. Binnie, Kansas City.
24 *Case of Hodgkin's Disease with Relapsing Fever. S. Ruffin, Washington, D. C.
25 *Bacteriologic Findings in Fifteen Cases of Epidemic Cerebrospinal Meningitis. G. C. Robinson, Philadelphia.
26 Primary Thrombosis of the Lateral Sinus Without Involvement of the Middle Ear. F. M. Cunningham, Macon, Ga.
27 Lymphatic Drainage of the Pharyngeal Tonsil. G. B. Wood, Philadelphia.
28 *Belladonna Poisoning Due to Belladonna Plasters. C. M. Doland, Philadelphia.
29 Bacteriologic Study of the Certified Milk of Philadelphia. A. H. Stewart, Philadelphia.
30 *Osteoarthritis. P. W. Nathan, New York.
31 Lumbar Puncture. S. J. Kopetzky, New York.
32 *Non-parasitic Cysts (Congenital) of the Liver, with a Study of Aberrant Bile Ducts. E. Moschcowitz, New York.

24. **Hodgkin's Disease.**—The easiest and surest method of diagnosis, according in Ruffin, lies in the removal and histologic study of a diseased gland. It may be impossible to make a conclusive diagnosis during life in any other way. Glandular tuberculosis may be excluded by the tuberculin test. Some cases of Hodgkin's disease are characterized by a typically relapsing fever.

25. **Bacteriologic Findings in Epidemic Cerebrospinal Meningitis.**—In a study of fifteen cases of epidemic cerebrospinal meningitis made by Robinson, the organism isolated from the spinal fluid, circulating blood, pus from the conjunctiva and from the central nervous system at autopsy agrees in all respects to the *Diplococcus intracellularis meningitidis* of Weichselbaum. It was isolated in pure culture from the spinal fluid of the 14 cases in which lumbar puncture was performed and is to be considered the causal agent in all the cases. This organism was obtained from the circulating blood of two of the four investigated cases, but in one only did it grow on the various culture media. Robinson thinks that the organism is probably only an occasional invader of the circulating blood, although it may be present in the blood for many days during the course of the disease and does not occur only as an agonal invader of the blood. The *Diplococcus intracellularis meningitidis* may occur in the pus of purulent conjunctivitis, a complication not infrequently seen in meningitis. It was isolated from one of two cases which showed this complication. Secondary lung infections with pyogenic organisms are frequent, and a terminal bronchopneumonia was found in 5 of the 6 cases that came to autopsy, all of which showed the presence of pyogenic cocci.

28. **Poisoning from Belladonna Plasters.**—Doland reports three cases in which belladonna poisoning followed the application of belladonna plasters. The symptoms were typical. In the case of two of the patients the symptoms appeared after a few days. The third patient showed evidences of poisoning two hours after a small belladonna plaster had been placed on the chest.

30. **Osteoarthritis.**—Nathan discusses the etiology and pathology of certain forms of joint disease and presents a scheme for the classification of joint diseases generally which divides them into two groups, the first according to their generic pathology and the second according to the primary location of the disease in the bones or the synovia. The classification based on the generic pathology divides these affections into (1) the inflammatory or infectious and (2) the trophic. Each division is subdivided further into (a) the synovia and (b) the osseous forms. Included under the inflammatory type are tuberculous, syphilitic, gonorrheal and typhoid arthritis, the group name being infectious arthritis. These are the synovial forms of arthritis. The group name for the osseous forms is infectious osteoarthritis. The subdivisions are the same as for the synovial forms. The group name for the synovial forms of the trophic type is trophic arthritis, which includes the metabolic or autotoxic arthritis, senile, arteriosclerotic and toxemic arthritis. The trophic osteoarthrites include the same forms, but are characteristic of the osseous type of trophic arthritis. The classification according to the location of the disease is made on the same basis and includes the same forms and type.

32. **Non-Parasitic Cysts of Liver.**—Moschcowitz studied 87 cases of non-parasitic cysts of the liver recorded in the literature. He found that they are associated with congenital anomalies in other parts of the body, especially with cysts of the kidney. Such cysts of the liver are always associated with congenital anomalies of the liver, consisting in aberrant bile ducts, which may be extrahepatic or intrahepatic. These aberrant ducts are embryonal "rests," formed in the course of development of the liver, and have thus far been found only in cystic livers or in livers associated with cystic kidney. Non-parasitic cysts of the liver have their origin in these aberrant ducts and may assume two forms; one arising from inflammatory hyperplasia of the ducts, the other by retention of fluid in these ducts, as the result of congenital obstruction.

American Journal of Obstetrics, New York.

April.

33 *Present Status of Pelvimetry. H. Ehrenfest, St. Louis.
34 *Embolism Following Abdominal Section. W. Krusen, Philadelphia.

35 *Some Operative Aids in Abdominal Work. E. A. Balloch, Washington, D. C.
36 *Aseptic Removal of an Infected Fibroid Uterus. H. A. Kelly, Baltimore.
37 *New Form of Blood Cell. F. A. Stahl, Chicago.
38 What Information Can We Obtain from Symptomatology in Gynecologic Cases? G. T. Harrison, New York.
39 What Information May We Obtain from Symptomatology in Gynecologic Cases, with Special Reference to Backache. D. Bissell, New York.
40 *Congenital Absence of Lower Third of the Vagina. H. N. Vineberg, New York.
41 Absence of the Uterus Associated with Bilateral Ovarian Hernia and Vicarious Hemorrhage. R. T. Gillmore, Chicago.
42 *Cancer of the Breast. I. S. Stone, Washington, D. C.
43 Typhoid Fever in Pregnancy. J. T. Kelley, Washington, D. C.
44 Associated Nervous Conditions in Gynecology, with Especial Reference to the Climacterium and Allied States. (Concluded). S. W. Bandler, New York.

33. **Status of Pelvimetry.**—Ehrenfest believes that this useful method of examination would find a wider application, both at the hands of the general practitioner and the specialist obstetrician, if the actual value of mensuration of certain pelvic diameters were more appropriately appreciated and if writers would be more careful not to create erroneous and exaggerated ideas concerning the utility and accuracy of the various methods of pelvimetry.

34.—See abstract in THE JOURNAL, Jan. 13, 1906, p. 151.

35. **Operative Aids in Abdominal Work.** Experience has taught Balloch the necessity of a very thorough preliminary examination of all patients, the desirability of simplicity in technic, the value of rapidity in operating and the benefits accruing from attention to little things. For sterilizing the hands he has found Harrington's solution, composed of bichlorid of mercury, alcohol and hydrochloric acid, very effective. He has also used eserin, according to Craig's method, with good results. He sounds a note of warning as to the indiscriminate use of salt solution. He believes that it does as much harm when improperly used as it does good in appropriate cases. In cases where meteorism is a prominent feature he employs an enema, consisting of equal parts of milk and molasses, as recommended by the younger Senn.

36. **Aseptic Removal of Infected Fibroid Uterus.** In order to avoid contamination of the abdomen during the removal of an infected fibroid uterus, Kelly adopted the following plan: He first tied off both broad ligaments down to the cervix and the uterine vessels; then, in order to hold the cervical stump well up in the pelvis, he passed a strong catgut ligature through the tied-off ovarian vessels, under the uterine vessels and out through the round ligaments on each side. When this ligature was tied it served to control the uterine vessels and at the same time to keep the cervix high up in the pelvis after amputation. An additional ligature was applied separately to the uterine vessels. Then, lifting the uterus, which was thus freed down to its cervical portion, strongly upward, he began to amputate through the cervix, first on one side and then on the other, as well as in front and behind. In this way the attachment of the fibroid uterus above was gradually narrowed down to the cervical canal and some of the surrounding tissues until it formed a pedicle about 2 cm. in diameter and perhaps 1 cm. in length. He then grasped the cervical canal thus isolated, but not opened with an artery forceps, and proceeded to amputate just below the forceps with a Paquelin cautery. The uterus was thus removed with its cavity closed in a perfectly aseptic manner. Catgut sutures, which had been applied to the right and left angles of the divided cervix before the amputation, were then tied at once, and with several more sutures the stump was completely and promptly closed. The patient made a rapid and prompt recovery.

37. **New Form of Blood Cell.** The cell described by Stahl is a crescent shaped, nucleated red-blood corpuscle, which he found in a 6 weeks old ovum. In the Bauchstiel area of the chorion in the amniotic cavity, there is a trabeculated tissue of arachnoid delicacy. In these meshes Stahl found this new cell and many multinucleated corpuscles, to which he has applied the term "mulberry form of nucleated red blood corpuscles." In a supplemental paper he expects to show that the three popular theories for the origin of the non nucleated red blood corpuscles are incorrect.

40. **Congenital Absence of Lower Third of Vagina.**—In this case Vineberg found a shallow blind sac occupying the vaginal introitus. The defect was remedied partly by the vulvar and partly by the abdominal route. The operation is described in full.

42. **Cancer of the Breast.**—By bringing the flap which covers the pectoral muscle forward and upward to the intraclavicular horizontal line where the incision is first made, Stone covers the space left by the removal of the breast. The manner of procedure is as follows: A horizontal incision is made, extending from the insertion of the pectoralis major nearly parallel to the clavicle and about two and one-half inches from it to a point below the first and second third of the clavicle. The length of this line is usually about five inches. A circular incision is now made around the breast, which usually has its center at the nipple and a diameter of from four to five inches. If the induration in the gland is at the periphery of the breast the outline must include that portion, and of course, as far beyond as possible, always including the nipple. The downward incision is completed by extending it until it meets the circular outline around the breast. The skin is dissected from the pectoral muscle and the muscle is removed as indicated above, taking the muscle and gland away together.

The second incision mentioned may commence about two inches inward from the insertion of the large pectoral and is made nearly over the vertical incision of the outer portion. After the mass of muscle and gland has been removed, the vessels are tied and the flaps adjusted. There is no necessity for much exposure of the raw surfaces. Drainage is best secured by a combination of rubber tube and gauze wick. In every case there will be need of some liberation of the skin from points where there is excessive traction. The auxiliary flap is brought upward and forward and secured to the infraclavicular flap, and the upper or pectoral flap is brought downward to cover the space by taking away the breast. The result is a line much like the letter "S." Its advantages are mainly to furnish additional skin covering, to permit greater ease in dissection of the axilla and to leave no scar tissue under the arm.

American Journal of Surgery, New York.

April.

45 Urinary Examinations for Uric Acid, with Especial Reference to the Detection of Uric Acid Calculi in the Kidney and Bladder. L. Heitzmann, New York.
46 Value of Blood Examination in Obstetrics and Gynecology. I. S. Wile, New York.
47 *Gallstones in the Cystic Duct—with Description of a Means of Dislodging them in Certain Cases. L. H. Dunning, Indianapolis.
48 *Common Duct Obstruction. J. W. Long, Greensboro, N. C.
49 Plaster of Paris, and How to Use It. (Continued). M. W. Ware, New York.
50 Comparative Study of the Various Methods of Terminating Pregnancy and Labor. S. Marx, New York.
51 *New Method of Intestinal Anastomosis, by Means of the Cautery. R. H. Powell, Grafton, W. Va.
52 Case of Appendicitis with Early Rupture of the Appendix. W. H. Axtell, Bellingham, Wash.

47 and 48.—See abstracts in THE JOURNAL, Jan. 6, 1906, pp. 64-65.

51. **New Method of Intestinal Anastomosis.** Powell has devised a new operation for lateral enteroenterostomy which is equally applicable for the performance of lateral anastomosis of any of the abdominal hollow viscera where immediate anastomosis is not imperative. Up to the point of incising the intestine the operation is the same as that usually performed by suture, but instead of incising the intestine a thermocautery or electrocautery, heated to a dull red, is drawn along the intestine for one and one-half or two inches until the entire thickness of the intestinal wall is devitalized but not perforated. The same procedure is followed out on the opposite portion of intestine, so that when encircled by the suture in completing the operation the two cauterized areas will be in direct apposition. Immediate anastomosis is not secured, but in the course of two or four days, after firm adhesions are formed, the slough separates and the communication is complete. The peritoneal cavity is walled off effectually. The operation so far has been confined to dogs, but has proved successful

Journal of Cutaneous Diseases, New York.
April.

53 *Egg-Shell Nail. J. N. Hyde, Chicago.
54 Two Cases of Multiple Tumors of the Skin in Negroes, Associated with Itching. J. F. Schamberg and R. Hirschler, Philadelphia.
55 Meralgia Paresthetica. J. C. White, Boston.
56 Case of Recurrent Bullous Eruption of the Face, Probably Pemphigus Hystericus. F. J. Shepherd, Montreal.
57 *Pityriasis Rosea. D. W. Montgomery, Berkeley, Cal.

53. **Eggshell Nail.**—Under this title Hyde describes a condition of a nail in which the color is similar to that of the inner face of an eggshell, an exceedingly delicate combination of white and purple. This condition is seen usually accompanying acne and favus, of which several cases are cited. The patients were all women, all young, all below the standard of sound health, none having any distinct affection of the circulatory system—all, however, exhibiting marked interference with stability of vascular equilibrium, and each suffered from hyperidrosis of the hands and feet. The group represented two social classes—individuals delicately nurtured, not engaged in self-supporting toil, and those employed in more or less exacting labor. To a variable degree in each the nails of both the fingers and toes were involved in the change. None of these patients applied for relief of the nail lesion, but for the skin eruptions mentioned above.

57. **Pityriasis Rosea.**—Montgomery treats these cases according to Jamieson's method. The patient is soaked daily for half an hour in a bath, to which two or three teaspoonfuls of Condy's fluid have been added. A salicylate ointment (from three to five parts of salicylate acid in 100 parts of vaselin) is applied freely to the skin.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.
April.

58 Initial Examination of the Recruit for the United States Army. H. Hamilton, Harrisburg.
59 *Physical Examination of Recruits for the Illinois National Guard. C. Adams.
60 *Medical and Surgical Observations during a Three Year's Tour of Duty in the Philippines. (To be concluded). J. M. Banister, Ft. Riley, Kansas.
61 Detection of Simulated Defects of Vision. W. B. Banister, Jefferson Barracks, Mo.
62 Ear Affections and Military Service. E. Amberg, Detroit, Mich.

59. **Examination of Recruits.**—Adams outlines the method of introduction of the physical examination of recruits for the Illinois National Guard. He says that the results of this physical examination were apparent at the outbreak of the Spanish-American War when, on the mobilization of the Illinois National Guard at Springfield, a larger proportion of recruits was accepted from the First Infantry, I. N. G., than from any other regiment of state troops. The details of the method employed are set forth fully. During the past thirty months 716 men underwent physical examination for enlistment in the First Infantry; of this number 88.4 per cent. were found physically fit for service.

60. **Observations in the Philippines.**—Banister discusses dysentery, sprue, pulmonary tuberculosis, malarial diseases, typhoid, bubonic plague and smallpox. He says that diseases of the respiratory organs, except tuberculosis, are of infrequent occurrence, while scarlet fever, diphtheria and yellow fever are unknown in the Philippines. The prevalence of intestinal parasites in the native population is something remarkable.

American Journal of Urology, New York.
April.

63 *Rupture of the Bladder. E. Loumeau, Bordeaux, France
64 *Conservative Surgical Treatment for Certain Cases of Enlarged Prostate. F. Cabot, New York.
65 Injuries to the Vena Cava During Nephrectomy. I. Sagols, Montpellier, France.

63. **Rupture of the Bladder.** Loumeau reports three cases. The first case shows that lithotrity, in inexperienced hands, may result in a laceration of the bladder and, on account of non-repair of the accidental lesion, may be followed by a fatal peritoneal infection. The second case is an example of spontaneous perforation of the bladder, the result of a vesical cancer. The third case is an example of a mixed rupture of the bladder, spontaneous in appearance but in reality produced by a trauma dating back thirty years. A hypogastric traumatism received at that time resulted in a contusion of the bladder with a prevesical hematoma followed by adhesions between the bladder and the abdominal wall. These adhesions, under the influence of violent and repeated movements, finally broke away from the walls of the bladder at their point of implantation on the organ, from which resulted a tear in the bladder wall.

64. **Conservative Surgery of Enlarged Prostate.**—The plan advocated by Cabot is first to do a cystotomy, preferably by the perineal route, this to be followed in a week or ten days, the patient's condition warranting it, by a perineal or suprapubic prostatectomy. The method is said to be applicable in the case of men suffering from the effects of an enlarged prostate and whose vital organs have been so damaged that even moderate surgical shock is quickly followed by death. Cabot favors the perineal route and while operating uses continuous hot irrigation through the penile urethra. The irrigation tends to lessen hemorrhage and so decreases the shock.

California State Journal of Medicine, San Francisco.
April.

66 Motor Complications of Herpes Zoster. A. W. Hewlett, San Francisco.
67 *Educational Treatment of the Neurasthenic and Hysterical Condition. J. T. Fisher, Los Angeles.
68 Demonstrations of Dilatations of the Descending Thoracic Aorta. C. M. Cooper.
69 *Epididymotomy in the Treatment of Blenorrhagic Epididymitis. L. Bazet, San Francisco.
70 Pathology and Treatment of Tetanus. T. C. McCleave, Berkeley, Cal.
71 Requisite Laboratory Equipment for the General Practitioner. R. L. Wilbur.
72 Gastroenteric Autointoxication: Its Recognition and Significance and Its Relation to Arterial Hypertension. (To be continued). W. A. Briggs, Sacramento.

67. **Educational Treatment of Neurasthenia.**—Fisher urges that the patient be given a full explanation of his condition and the meaning and significance of the different symptoms. The apprehension and fixed ideas must be counteracted by suggestion, and all faulty habits must be corrected. If necessary, individual symptoms should be relieved or dissipated by some mechanical device—electricity or a bitter pill—all given with direct suggestion. A systematic method of life should be insisted on. For every hour of the day some act or task should be prescribed to keep the mind of the patient busy. This acts as a strong moral and physical corrective.

69. **Epididymotomy in Blenorrhagic Epididymitis.**—Bazet has operated on 65 patients. He found the gonococcus in one-third of the cases. He has not had any atrophy, hernia, necrosis of the testicle, nor any mortality. In his opinion epididymotomy affords the greatest and quickest relief in the treatment of blenorrhagic epididymitis. He performed his first operation in 1897 with the following technic: He chose the ligamentum serotalis for the incision, seizing firmly the swollen indurated nodule of the globus minor of the epididymis in the left hand. An incision one inch long is made downward into the cavity of the epididymis. At first the swollen nodules were punctured and the walls of the cavity were stitched to the incised skin; later Bazet adopted the plan of performing an epididymotomy, that is, he opened the cavity of the epididymis, exposed the nodules, relieved the tension, punctured the nodules, if pus were present, and stitched the walls of the epididymis to the skin. The wound is packed with gauze impregnated with one to ten parts respectively of ichthyol and glycerin, and the gland is well supported. The patient is able to be up in from four to seven days. The wound heals in a week. The danger of sterility is lessened by this method.

Wisconsin Medical Journal, Milwaukee.
March.

73 *Delayed Chloroform Poisoning. J. D. Madison, Milwaukee
74 Colles' Fracture. A. J. Pullen, N. Fond Du Lac.
75 Coli-Pyelitis. A. L. Kastner, Milwaukee.
76 Otitis Media and Its Treatment. N. M. Black, Milwaukee
77 Adiposis Dolorosa. F. O. B. Wingate, Milwaukee.

73. **Delayed Chloroform Poisoning.**—Two cases of toxemia following the administration of chloroform are reported by Madison. The first patient was operated on for appendicitis, the appendix being partly gangrenous. The duration of the anesthesia was about one hour and thirty minutes. The patient died eight days after the operation with symptoms of intense toxemia. During the first three or four days the wound did well, and the condition of the abdomen seemed entirely

satisfactory. With the onset of the symptoms of intoxication the wound did not do so well, and toward the last the discharge became considerable and rather foul. There was no evidence of general peritonitis. Forty-eight hours after the operation both temperature and pulse were normal, then they became subnormal and remained so until the last twenty-four hours, when the temperature rose to 100.6. In the case of the second patient an appendiceal abscess was evacuated, the anesthesia lasting about forty-five minutes. The patient did well until about forty hours after the operation, when she suddenly became delirious. The temperature rose to 100. There was no evidence of a brain lesion. After a few hours the patient grew quiet, but soon passed into a comatose condition, in which she died about fifty-eight hours after the operation. While in the comatose condition it was noticed that the breath had a sweetish odor.

The third patient died in coma seventy-four hours after operation. The operation in this case was a clean and satisfactory one, the appendix being somewhat inflamed but quite markedly distended by a serous fluid. The patient recovered readily from the anesthetic and seemed to be in an entirely satisfactory condition. The temperature was 98.6. The following morning pain was complained of in the upper part of the abdomen; the pulse was rapid; the temperature was 102.5. The patient was quite restless and vomited at intervals, the vomitus being brownish and at times quite dark. There was intense jaundice. In these three cases the immediate effects of the anesthetic were usually recovered from entirely and there followed a period during which the patients were comfortable and appeared to be doing well. The symptoms of toxemia appeared suddenly in each case, death resulting invariably.

Louisville Monthly Journal of Medicine and Surgery.
April.

78 Complicated Gallstone Cases and Their Treatment. A. M. Cartledge, Louisville.
79 Co-operative Clinical Research, an Important Factor in Combating Tuberculosis. F. C. Wilson, Louisville.
80 *Amputation in Diabetic Gangrene. W. O. Roberts, Louisville.
81 *Strapping of Sprained Ankle. V. P. Gibney, New York, G. A. Hendon, I. Abell, and L. Bloch, Louisville, Ky.
82 Porro-Cesarian Operation. I. Abell, Louisville.
83 *Injury to Eye Followed by Death Seven Weeks Later. J. M. Ray, Louisville.

80. Amputation in Diabetic Gangrene.—Roberts' patient, a man, aged 55, had been perfectly healthy up to the age of 20, at which time he suffered from erysipelas of both hands and forearms, from which he did not recover completely for about three months. Six years ago he again had what he supposed was erysipelas, beginning on the plantar surface of the left foot. In a short time the whole foot was involved and an amputation was performed through the middle third of the leg. Six months ago a sore appeared on the big toe of the other foot, which was followed in about six weeks by a sore on the little toe. This toe became gangrenous and the gangrene extended to all the toes and the foot nearly to the ankle joint. On examination it was found that the urine was excessive in amount and contained one-half of 1 per cent. of albumin, a large quantity of sugar and many hyaline and granular casts. The leg was amputated through the middle third of the thigh. The wound healed without suppuration, the patient leaving the hospital in eight weeks.

81. Treatment of Sprained Ankle.—The participants in this symposium favor the so-called Gibney dressing of adhesive plaster applied in interlacing crosses around the foot and ankle, beginning about one inch above the junction of the great toe and tarsus, and extending to about two inches above the malleoli.

83. Fatal Injury to Eye.—Ray reports the case of a boy who was hit in the eye, the trauma producing a large jagged triangular wound of the cornea. The lens was protruding through the rupture. The eye was enucleated. A peculiar mental condition existed which steadily became worse. A second operation disclosed a perforation in the orbital plate. The lateral wall of the orbit and the external angular process were removed. In spite of every effort that was made to save the life of the patient, he died seven weeks after the injury with symptoms of brain abscess.

Ophthalmic Record, Chicago.
March.

84 Care of the Eyes of School Children. S. S. Bishop, Harrisburg, Pa.
85 Effects of Prolonged Lactation on the Eye. H. Moulton, Ft. Smith, Ark.
86 Cavernous Angioma of the Eyelid. S. D. Risley, Philadelphia.

Annals of Otology, Rhinology and Laryngology, St. Louis.
December.

87 Etiology and Treatment of Mycosis Occurring in the Upper Respiratory Tract. J. Sendziak, Warsaw.
88 Mastoid Operations in Aural Service of Boston City Hospital, October, 1903, to May, 1904. G. A. Leland, Boston.
89 Obstruction of the Eustachian Tube a Factor in Postoperative Mastoid Fistula and in Chronic Suppuration of the Middle Ear. T. Hubbard, Toledo.
90 Carcinoma of the Larynx. S. E. Solly, Colorado Springs.
91 An Unusual Case of Laryngeal Syphilis Requiring Tracheotomy. C. F. Theisen, Albany.
92 Infective Thrombosis of the Sigmoid and Lateral Sinuses After Acute Mastoiditis, Death from Meningitis. A. Knapp, New York.
93 Meningitis; Its Symptomatology, Diagnosis and Treatment. S. MacCuen Smith, Philadelphia.
94 Symptomatology, Diagnosis and Treatment of Encephalitis and Brain Abscess. F. L. Jack, Boston.
95 Symptomatology, Diagnosis and Treatment of Sigmoid Sinus Thrombosis. J. F. McKernon, New York.
96 Pathologic Findings of Intracranial Complications of Middle-Ear Diseases. T. J. Harris, New York.
97 Personal Attention an Essential Feature in the Treatment of Chronic Aural Discharges. F. C. Hotz, Chicago.
98 Tumors of the Ear. A. P. Voislawsky, New York.
99 An Interesting Anomaly of the Facial Canal. A. J. Prentiss, Iowa City.
100 New Method of Tympanic Massage by Means of Metallic Mercury. J. C. Beck, Chicago.

Philippine Journal of Science, Manila.
February.

101 Keeping Qualities and the Causes of Rancidity in Coconut Oil. H. S. Walker, Manila.
102 Principal Insects Injurious to the Coconut Palm. C. S. Banks, Manila.
103 Beriberi in the Japanese Army During the Late War. The Kakke Coccus of Okata-Kobobo. M. Herzog, Manila.
104 Vaccination Against Plague. R. P. Strong, Manila.
105 Philippine Wood Oils. A. M. Clover, Manila.
106 Orbitoides from the Binangonan Limestone. W. D. Smith, Manila.

Journal of the Medical Society of New Jersey, Newark.
March.

107 Infantile Eczema. H. J. F. Wallhauser, Newark.
108 Diet in Typhoid Fever. D. E. English, Millburn.
109 Review of the Eighth Decennial Revision of the United States Pharmacopeia. H. A. Pulsford, South Orange.
110 Practical Anesthesia. J. A. Maclay, Paterson.
111 Clinical Study in Blood Pressure at the Lincoln Hospital. L. F. Bishop, New York.

The Texas Medical News, Austin.
March.

112 Shall We Dispense? W. O. Wilkes, Waco.
113 Urethral Calculus in a Boy Twenty-one Months Old. K. H. Aynesworth, Waco.
114 Hemorrhoids. C. E. Belcher, Munson, Pa.
115 The Heart Murmurs. G. W. Baskett, Van Alstyne

Western Medical Review, Lincoln, Neb.
March.

116 Treatment of the Individual Case in Appendicitis. C. C. Allison, Omaha.
117 Too Much Medicine. J. E. Sutherland, Grand Island.
118 Obstruction of the Bowels. R. D. Mason, Omaha.
119 Diagnosis of Bright's Disease. L. B. Pillsbury, Lincoln

Annals of Gynecology and Pediatry, Boston, Mass.
March.

120 Gynecologic Surgery in the Manhattan State Hospital. L. Broun, New York.
121 Illustrative Cases of Uterine Fibroids. J. V. Young, New York.

Denver Medical Times.
March.

122 Treatment of Insomnia. S. D. Hopkins, Denver.
123 Id. J. E. Courtney, Denver.
124 Treatment of Insomnia of Nervous Origin. C. A. Moleen, Denver.
125 Treatment of Insomnia. E. M. Brandt, Denver.
126 Id. E. Delehanty, Denver.

The Laryngoscope, St. Louis.
March.

127 Operation for Straightening the Nasal Septum. G. Sluder, St. Louis.
128 Does Denker's Radical Operation on the Antrum of Highmore Represent Progress in Surgery of the Sinuses? H. Stolte, Milwaukee.
129 Some Evils of Mouth Breathing. C. P. Pinchart, Columbus.
130 Indications for the Submucous Resection of the Nasal Septum. B. Levy, Denver.
131 Case of Rhinolith. T. Faith, Chicago.
132 New Instrument for Excision of the Tonsils. J. G. Roberts, Oskaloosa, Iowa.
133 Instruments for Submucous Resection of Septum. W. W. Carter, New York

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical ctures, single case reports and trials of new drugs and artificial ods are omitted unless of exceptional general interest.

British Medical Journal.

March 31.

1 Tabes Dorsalis. D. Ferrier.
2 *The Cystoscope. D. Newman.
3 *Prognosis in Posterior Basal Meningitis. O. Hildesheim.
4 Case of Posterior Basal Meningitis, with Few Cerebral Symptoms. J. G. G. Corkhill.
5 Folie A. Deux (?). C. Mercier.

2. **The Cystoscope.**—Newman discusses the cystoscopic appearances in some diseases of the bladder and kidneys, and describes a method of illustrating diseases of the bladder and the appearances in renal disease by the opaque projector. He summarizes his findings as follows:

1. When one orifice is altered and the other normal, the renal lesion is on the side of the abnormal ureter, and the character of the deformity of the orifice may indicate the nature of the renal lesion.
2. Active congestion and swelling of the mucous membrane in the neighborhood of the orifice and along the line of the ureter, also swelling and pouting of the lips, denote acute irritation of the pelvis or parenchyma of the corresponding kidney.
3. A dilated orifice, the lips being sharp and clearly defined, the mucous membrane between the lips acutely congested, while the color of that of the bladder is little changed, denotes recent and acute inflammation or mechanical irritation in the corresponding pelvis.
4. A dilated orifice, the lips being thickened and only slightly rounded, the mucous membrane between the lips of a dark-red color, while the mucous membrane of the bladder is deeply injected and pigmented, especially along the line of the ureter, denotes descending ureteritis with dilatation.
5. An elongated or dilated mouth with hyperemia of the lips indicates acute inflammation of the parenchyma or recent distension of the renal pelvis.
6. A punched-out orifice, marked thickening of the lips, induration and congestion of the surrounding mucous membrane, indicate dilated ureter with ascending ureteritis, the infective process extending along the surface by continuity.
7. A pinhead opening one well-defined ridge of deeply-pigmented mucous membrane denotes induration of the walls of the ureter from ureteritis, the infective material being conveyed from the primary focus in the kidney or bladder, principally through the lymphatic channels.
8. Pinhead contraction of the mouth without other vesical changes denotes spasm induced by the presence of a rough calculus impacted in an irritable ureter.
9. Inflammation of the mouth and thickening of the lips, with inflammatory changes limited to the mucous membrane immediately surrounding the ureter orifice, denotes mechanical irritation of old standing.
10. Simple dilatation of the mouth, without much thickening of the lips and with congestion limited to the orifice and neighboring parts, suggests mechanical irritation of recent origin.

3. **Prognosis in Posterior Basal Meningitis.**—Hildesheim claims that it is almost impossible to give any prognosis early in the disease. Although the prognosis is better the older the child, nevertheless one-third of his patients who recovered either completely or partially were under six months of age at the time of the onset of the disease. In not a few cases the prognosis depends largely on careful and unremitting attention to the artificial feeding of the child, and every effort should be made to avoid setting up a catarrh of the naso-pharynx and respiratory system.

The Lancet, London.

December 31.

6 Tabes Dorsalis. D. Ferrier.
7 Distribution and Recovery of Peripheral Nerves Studied from Instances of Division in Man. J. Sherren.
8 *Perforated Ulcer of the Duodenum. S. M. Smith.
9 *Cases of Erythema Scarlatiniform Sent Into Hospital as Scarlet Fever. J. Beard and T. W. N. Barlow.
10 Fatal Hemorrhage in Operations on the Chest Wall for Empyema. T. Oliver.
11 Case of Fracture of the Surgical Neck of the Humerus. F. C. Wallis.
12 Case of Primary Sarcoma of the Lung. H. W. Webber.

8. **Perforated Ulcer of Duodenum.**—Smith reports 14 cases. In 9 of these there was a history of preceding digestive disturbance, but in only 3 were the previous symptoms suggestive of duodenal ulceration. Melena did not occur in any case, and hematemesis occurred in only one case. In most instances the perforation took place while the patient was at work—in 2 cases while lifting a heavy weight. The characteristic sudden severe pain in the abdomen was the initial symptom of perforation in every instance. The pulse rate at the time of examination in 10 cases was from 100 to 144, in 7 of these over 120. Smith regards the following as important localizing symptoms: 1. The history may suggest duodenal ulcer; 2. the localization of the original pain of perforation to the right hypochondrium; 3, symptoms referred to the right side of the abdomen and most marked in the appendix region, but with a definite history of onset in the right hypochondrium.

In 2 cases the ulcer was excised; in 4 cases it was sutured; omental grafts were made use of in 3 cases. In 7 cases general and profuse irrigation of the peritoneal cavity with hot normal saline solution was employed. Of these 7 patients, 5 recovered. In 4 cases the peritoneal cavity was mopped out with moist swabs. Of these 4 patients all died. In none of the cases was drainage dispensed with; in 4 it was suprapubic and epigastric; in 5 it was suprapubic, epigastric and right lumbar; in 2 it was epigastric only. Of the first set, 2 patients recovered, but one of these had to be drained in the right lumbar region after a few days. Of the second set 3 patients recovered. Of the last set none recovered.

9. **Erythema Scarlatiniform and Scarlet Fever.**—Beard and Barlow direct attention to three important points in the differential diagnosis of these two affections: 1. The very early onset of desquamation; 2. the desquamation taking place while the erythema is in the florid stage, and, 3, the erythematous base observed after desquamation and which remains for some time, with its peculiar glistening and greasy appearance.

Journal of Tropical Medicine, London.

March 15.

13 A Hemogregarine of Mammals and Some Notes on Trypanosomiasis in the Anglo-Egyptian Sudan. A. Balfour.

Indian Medical Gazette, Calcutta.

March.

14 Malarial Fevers Among Europeans in Calcutta, and Their Differentiation from the Seven-day Influenza-like Fever. L. Rogers.
15 Rupture of the Spleen. D. G. Crawford.

Journal of the Royal Army Medical Corps, London.

March.

16 Medical Organization of the Japanese Army. W. G. Macpherson.
17 Hygiene and Preventive Medicine During 1905. R. H. Firth.
18 Bubonic Plague in Cape Colony. (Continued). J. A. Mitchell.
19 *Operative Treatment of Fractures, Introducing Some Original Methods of Bone-union by Simple Mechanical Means. R. G. Anderson.
20 Occupation for Soldiers in Hospital. E. C. Freeman.

19. **New Method of Bone Union.**—The methods described by Anderson involve the use of simple contrivances and obviate the necessity for drilling bone and using wire. The contrivances employed are called by him the medullary spike and the bone fracture clamp. They depend for their effect in the one case on the support of the medullary cancellous tissue alone, and, on the other, on the sole support of the compact bone. The medullary spike consists of a double-pointed steel spike, divided by a raised flange into two unequal lengths, each from a quarter to two inches long, and varying according to the necessity of the case, alterations being made, if necessary, during the operation by means of a file or cutters. The fracture clamp is a simple instrument, consisting of two toothed jaws, each formed by the junction of small parallel steel rods, armed at their extremities with sharp spikes, and joined centrally by a free pivot, so allowing their close adaptation to any inequality of surface or variation of position which may be considered advisable. The jaws grasp the bone on either side of the fracture and are placed, one superficially, the other deeply. They are joined by a tension-screw of fine steel, which pierces the pivots and passes directly through the line of fracture, to the obliquity of which it accommodates itself accurately. The tension wire, some three or four inches long, is finely threaded and provided with a minute nut, which can be screwed down, thus clamping the jaws firmly home to any required position, after which any surplus is filed off and discarded. The medullary spike, used by itself, is admirably suited to most cases of transverse or moderately oblique fracture in shafts with a small central cavity. These include all the long bones with the exception of the femur, humerus and tibia, and also in all packed cancellous extremities and in one of parallel bones in which the sound bone acts as a natural splint to its broken companion. The fracture clamps are suited to almost any break, if not too oblique or spiral in direction, and if, in such oblique cases, no more transverse position can be utilized. The method of application of both spike and clamp are described in detail.

Bulletin de l'Académie de Médecine, Paris.

22 (Year LXX, Nos. 8-9.) Two Poisonous Alkaloids in Urine of Lepers.—Découverte de 2 alkaloïdes vénéneux retirés des urines des lépreux. Lara and A. Gautier.
23. *Sur le sérum anti-dysentérique. L. Vaillard and C. Dopter.
24 *Sur la sérothérapie de la fièvre typhoïde. Brunon.
25 (No. 10.) *Sérothérapie de la fièvre typhoïde. Josias.
26 *Absorption de l'acide carbonique contenu dans l'air confiné. N. Gréhant.
27 (No. 11.) *La genèse des eaux thermales. A. Gautier.
28 *Anatomie pathologique du rhumatisme tuberculeux. Tuberculose inflammatoire et ses localisations ostéo-articulaires. A. Poncet and R. Leriche.
29. *Sur une nouvelle fonction glandulaire des cellules fixes du tissu conjonctif: la fonction rhagiocrine (new function of connective tissue cells). J. Renaut.
30 (No. 12.) Dusts and Tuberculosis. Inquiry in Regard to Morbidity and Mortality Among 257 Carpenters and Men Employed in Packing-rooms and in Making Inlaid Floors. — Poussières et tuberculose. L. Landouzy.
31 Prophylaxie des maladies contagieuses dans les stations balnéaires. De Ranse.

23. **Serum Treatment of Dysentery.**—Vaillard and Dopter for years have been making a special study of dysentery and its treatment with a prepared serum. Shiga and Kruse used cultures alone to immunize the animals in making their serum, ignorant of the existence of a soluble dysenteric toxin. Vaillard and Dopter immunize their horses by inoculation on alternate weeks with progressive doses of living bacilli and of the soluble toxin. The toxin is obtained by filtering through porcelain a culture in Martin bouillon kept for twenty days at a temperature of 37 C. The injections are made under the skin at first and later in the veins. The serum of the horses acquires immunizing properties against the bacillus of dysentery and against its toxin. Ninety-six patients with dysentery have been treated with this serum. The number includes 50 with from 15 to 20 stools in twenty-four hours; 18 with from 30 to 80; 24 with from 80 to 150, and 4 with from 150 to 288 stools. All recovered except one patient in the last group. The serum has an almost immediate influence on the local and general symptoms of the dysentery, and recovery is complete in two or three days in the mild and in four or six days in the severest cases. Relapses were observed only twice, and in these instances they occurred the tenth day or third week after the last injection of serum, when its effect was exhausted. Some of the patients had been treated for weeks with calomel, lavage of the intestines, etc., without appreciable effect. The condition changed as soon as the serum was injected and the patients were cured in two or three days. The minimal dose is 20 c.c., injected under the skin, repeated once or twice in the severer cases. Its harmlessness has been amply established.

24 25. **Serum Treatment of Typhoid Fever.**—Brunon reports the results of the use of antityphoid serum in 100 children from 3 to 16 years old. The typhoid mortality in his service with other methods of treatment was 17 per cent., but under serotherapy it dropped to 3 per cent. In the fatal cases the serotherapy had not been applied until the fifteenth, sixteenth and thirty-eighth days respectively. It has an unmistakable action on the disease, modifying and attenuating it as a whole, shortening its duration, reducing the chances for complications, and the mortality.

Josias speaks from an experience with 182 cases of typhoid fever in children and the mortality was about the same as Brunon's, 3.8 per cent. He is convinced that the outlook for a typhoid patient is very much better when the serum is injected as an adjuvant to the usual measures. He confirms its absolute harmlessness.

26. **Technic for Absorbing the Carbon Dioxid in Confined Air.** Gréhant's previous communication on this subject of regenerating vitiated air was mentioned in these columns on page 990. He shut up a dog in a cylinder and in four hours found that the air in the cylinder contained 127 times as much carbon dioxid as pure air, and in eight hours 185 times as much as pure air, or 5.5 per cent. The next day he repeated the experiment, but connected the cylinder with his apparatus for absorbing the carbon dioxid. At the end of two hours the air in the cylinder contained 6 times as much carbon dioxid as pure air; at the end of six hours, 5.6 times, and at the end of eight hours only 5.3 times as much. The proportion of oxygen in the air in the cylinder at the end of eight hours was 13.4 and 14 per cent in these experiments. He thinks that the results obtained warrant the assertion that with his absorbing apparatus and a little extra supply of oxygen, it will be possible for human beings to breathe and to live even in absolutely confined air.

27. **Genesis of Thermal Waters.** Gautier describes his conception of the dehydration of the rocks under the influence of the heat in the center of the earth and of chemical affinities, and the escape to the surface of the water thus formed by volcanic action.

28. **Inflammatory Tuberculosis and Its Localization in Bones and Joints.**—Poncet and Leriche have continued their study of tuberculous rheumatism, mentioned on page 139 of the last volume of THE JOURNAL. The pathologic anatomy of the process, they say, has demonstrated that tuberculous rheumatism is after all merely the osteo-articular form of inflammatory tuberculosis. It has three ways of developing: the inflammatory phase may pass into a condition in which the bone becomes rarefied, or a condition of hyperostosis or of softening of the bone (partial or diffuse osteomalacia). The different types of the joint affections of growing children and of the joint deformities of adolescence are frequently of tuberculous origin. Many vague inflammatory lesions of the bones and joints probably have had tuberculosis as the primary agent. This throws a new light on the large group of surgical affections of the bones and joints in the young approaching or just passing puberty, explained by some writers as tardy rickets, by others as the result of overburdening or overwork. This theory of dystrophy or mechanical strain or overwork, has been advanced for genu valgum, painful flat foot, coxa vara, scoliosis, etc., in short, for all the bone and joint deformations of youth. The conception of an inflammatory tuberculosis readily explains them. The condition called tardy rickets is the result of the inflammatory process, passing through the phases of osteomalacia and then of condensing osteitis. The first phase explains the part played by mechanical causes, the overburdening of a softened bone. The second phase explains the definite fixation of the lesions, their final healing leaving deformity, spontaneously incurable. Any infection may realize this anatomo-clinical syndrome, Poncet remarks, but the tubercle bacillus is alone responsible in the large majority of cases. This inflammatory tuberculosis is generally encountered in the "minimal tuberculous," individuals with latent tuberculosis, often almost impossible to detect, but an early diagnosis is frequently of great importance.

29. **New Glandular Function of the Connective Tissue Cells.** Renaut found nearly two years ago that the fixed cells of the connective tissue are endowed with a secretory activity which seems to confer glandular functions on them. Like the cells of the true glands, such as the parotid and pancreas, they elaborate in the heart of their cytoplasm a large number of granules possessing all the histologic and cytologic characters of the "pro-ferments." The granule grows to maturity in the center of a vacuole. The cell does not throw off these granules as such, but acts like a true ferment-producing gland, and redissolves its segregated granules before excreting the substance. He calls this the "rhagiocrinic function," coining the term from the Greek words for granule and select. Such a connective-tissue cell should henceforth be regarded as a true interstitial glandular cell. The cells in question are spherical, are able to migrate, and are the phagocytes *par excellence* of the connective tissue. Their "rhagiocrinic function" is in evidence in early life, and subsides when the organism has reached maturity. It is not lost, but remains latent until aroused by some irritation or other stimulus. The connective tissue thus forms an enormous gland whose elements can be aroused to glandular activity at any time. These elements pass through the stages of the round, migrating "rhagiocrine," then the fixed "rhagiocrine," then the branching, and then the anastomotic "rhagiocrine," growing more and more quiescent with age. The material secreted by the "rhagiocrines" has certainly some relation to the growth of the connective tissue, as the secretion lasts until the organism has reached maturity and is then suspended. A large number of these connective tissue "rhagiocrines" still persist free in the fluids of the serous cavities, even in the adult. They migrate by their own ame

oid movements, and are not dependent on the circulation. hey retain their extremely active phagocytic properties long fter they have settled down into quiescent fixed cells, incor- orating blood corpuscles and foreign bodies with like avidity. he task now before us, he declares, is to learn the means of imulating and controlling this "rhagiocrinic function." It ay prove of far-reaching importance.

Semaine Médicale, Paris.

32 (XXV, Nos. 12-13.) *La lymphangite pulmonaire cancéreuse généralisée. L. Bard.

32. **Generalized Cancerous Lymphangitis of the Lungs.**—In ie 2 cases described by Bard the condition was a surprise hen discovered postmortem. In retrospectively reviewing the ases, however, he noted certain points which might suggest ie diagnosis when encountered again. The anatomy of the arts allows the isolated and almost simultaneous generaliza- on of the process throughout the lymphatic system in the ings in a way impossible in other organs. Two of the few ases of the condition on record were reported as cases of ppurative lymphangitis, the mistake not being discovered ntil afterward (Raynaud and Troisier). Rapidly progressive, itense dyspnea, without explanatory auscultation findings, in patient presenting evidence suspicious of a cancerous or cerative lesion in the stomach, should always suggest the ossibility of the condition under discussion. In some cases a oncomitant bronchitis masked the specific symptoms. The ondition seems to occur mostly in the early stages of cancer. he rapid diffusion is characteristic of cancer in the young. ll the cases on record were in comparatively young persons, etween the ages of 20 and 35, all males. Bard long ago ointed out that in young subjects cancer seems to have a eculiarly rapid growth with unforeseen complications. It is ossible, he adds in conclusion, that the cases described as galloping cancer" of the lungs or "galloping consumption," ay have included some in which the trouble was this gen- alized lymphangitis secondary to an unsuspected cancer else- here.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

33 (XXXII, No. 9, March 1.) *Health of Prussian Army.—Der Gesundheitsstand der preussischen Armee in hygienischer Beleuchtung. Werner.

34 Mode of Dissemination of Pulmonary Tuberculosis.—Ueber die Verbreitungswege der Lungen-tuberculose vom klinischen Standpunkt. A. Fraenkel.

35 Sources of Error in Examining Hearing.—Ueber Fehlerquellen bei der Tonuntersuchung Schwerhöriger, nebst einigen physiologisch-akustischen Bemerkungen. A. Lucae.

36 Ueber eine scheinbar pathogene Wirkung der Spirochæte dentium. Miller.

37 (No. 10.) *Ueber naturgemässe Therapie. Goldscheider.

38 Geisseln bei Hühner- und Recurrens-Spirochäten (flagella). Zettnow.

39 *Mercury-Water Lamp for Treatment of Skin and Mucous Membrane.—Quecksilberwasserlampen zur Behandlung von Haut und Schleimhaut. Kromayer (Berlin).

40 Kollision von Zwillingen bei der Geburt (twin births). K. Frankenstein.

41 Ein neuer Nasensauger (nasal aspiration). C. Leuwer.

42 Untersuchungen über die Wirkung aggressiver Flüssigkeiten des Streptococcus pyogenes (action of aggressive fluids). E. Weil.

43 Fall von essentieller Nierenblutung (hemorrhage from kidney). G. v. Illyes.

44 Verhaltungsmassregeln bei akuter Gonorrhœ (conduct in acute gonorrhea). Schadel.

45 Prussian Contagious Disease Law.—Das preussische Seuchengesetz vom 28. August, 1905. M. Kirchner.

33. **Hygiene in Prussian Army.**—Werner describes the progress of hygiene in the army and the reduction of morbidity. omparing the year 1873 with that of 1902, the statistics show iat nearly 2,500,000 days of treatment of the sick were ved, and 2,462 lives. In 1873 an average of 31.9 out of every 000 men were sick, while in 1902 the average was only 25.3. he morbidity of typhoid in 1902-3 was .85 in each 1,000 ldiers; in France it was 4.3; in Austria, 1.9, and in Italy, 4.1. he mortality from typhoid during the same period was .09 in russia, Saxony and Wurttemberg; .59 in France; .25 in Aus- ia, and .78 in Italy. The average of venereal diseases during is period was 19.4 in Prussia, Saxony and Wurttemberg; 29.3 France; 57.5 in Austria; 91.5 in Italy, and 122.7 in England. he venereal diseases have diminished in the Prussian army 49 per cent. since 1873, and syphilis by 59 per cent.

37. **Therapy According to Nature.**—In Germany there is an ganization of charlatans who call themselves "Nature heal- ers" and claim to cure by "natural methods," without drugs, and who are rabid in their denunciations of regular medicine. Goldscheider's article shows that all their "natural methods" are part and parcel of regular medicine, and have been for ages, and that drugs also come under the head of "natural" measures under certain circumstances. The lessons learned from experience apply only to the conditions under which the experience was gained. Attempts to generalize these lessons under other conditions are liable to prove disastrous. He summarizes the aims of a truly "natural therapy," "according to Nature," as: 1, Imitation or direct support of the natural healing processes, as in serum and antitoxin treatment and vaccination; 2, indirect support of the natural healing process, as by mechanical measures to relieve ascites, digitalis for a weak heart, sedatives and other symptomatic measures; 3, any measure which directly promotes the natural curative reaction of the healing process is therapy according to Nature. Administration of a drug, digitalis or morphin, for instance, at the proper moment may aid Nature as effectually as any mechanical, gymnastic, hydriatic or dietetic measures. The latter do not exhaust the Nature-supporting measures. It is a mistake to suppose that treatment "according to Nature" must necessarily mean without drugs. Medicines are "Nature"; some of them are actually already component parts of our bodies, as phosphorus, iron, calcium and even iodin. Our food consists of substances that are, some of them, foreign to our bodies. Other ways in which the natural healing processes can be promoted are by general treatment and by guidance and regulation of the natural healing process. The latter may occur with excessive intensity, overshooting the mark, or it may require the removal of disturbing or dangerous by-effects. Fever probably is one of those reactions which overshoot the mark. Therapy has to maintain the interests of the organism as a whole against the one-sided tendency of the natural healing process, or substitute the latter in case of its absence. The natural curative process may die down from lack of response to stimuli, in which case therapy interferes to arouse the reaction anew and to start up the natural healing process again, as by massage, electricity, stretching of nerves, passive congestion, etc. The sixth branch of "therapy according to Nature" is by training parts and organs to vicarious function, as, for instance, by compensatory exercise treatment of ataxia, by transplantation of tendons for paralyses and muscular defects, by gastroenterostomy in case of stenosis of the pylorus, etc. All these measures come under the head of "therapy according to Nature," or "natural methods."

39. **Mercury Lamp for Treatment of Skin and Mucons Membranes.**—Kromayer gives an illustrated description of a mercury and water lamp for phototherapy for which he claims many advantages. Among them is the fact that the therapeutic effect is obtained in one-half the time required for the iron lamp and in from one-third to one-fifth of the time of the Finsen lamp. The area that can be treated is much larger, generally 7 by 7 cm. at a time. The lamp can be arranged so as to throw the light on mucosæ of nose, throat, rectum, uterus, bladder, etc. Its application is convenient for physician, patient and attendant, while the expense is much less than that of the ordinary lamps, as only 4 ampères are required. He has used it with good results in a number of cutaneous affections, including eczema, acne, lupus, obstinate syphilitic lesions and in gonorrhea.

Muenchener medizinische Wochenschrift.

46 (LIII, No. 6.) Sero-Activität und Phagocytose. M. Gruber and K. Futaki.

47 Ueber Pyelonephritis in der Gravidität. E. Ruppanner.

48 *Passive Congestion in Treatment of Acute Suppurative Processes.—Behandlung akut eitriger Prozesse mit Stauungs-Hyperämie. F. Colley, Id. Herhold.

49 Zur Technik des Bierschen Verfahrens mit Stauungs-Hyperämie. J. Mindes (Drobobycz).

50 Zur Pathogenese der congenitalen Stuhlverstopfung (Hirsch sprungsche Krankheit.) A. Bittorff.

51 Roentgen-Strahlen und Radium bei Epitheliom. E. Schiff.

52 Operativ gehelltes Nebennierenkystom (suprarenal cystoma). Schilling.

53 Zur Kenntnis der intrauterinen Totenstarre (cadaveric rigidity). G. Sommer.

54 Transformation of Lengthwise Direction in Extension Dressings.—Umsetzung der Längsrichtung bei Extensionsverbänden im queren zug. A. Hoggmann (Carlsruhe).

55 Powdered Peat for the Uncleanly Bedridden to Lie On Lagerung von unreinen Kranken auf Torfmull. D. Zippel.

56 (No. 7.) *The Toxin Causing Eclampsia.—Das Gift der Eklampsie und die Konsequenzen für die Behandlung. Zweifel. Id. G. Lockemann.
57 *Pure Milk Supply.—Ueber die Gewinnung einwandfreier Milch. W. Hempel.
58 Sterilized Milk and Infant Mortality.—Statistische Erhebungen. Manteufel (Halle).
59 Munich Milk Supply.—Die Kuhmilch. Zaubzer.
60 *Eine klinische Fettprobe für die Fäces (test for fat in feces). A. F. Hecht (Vienna).
61 Weitere Mitteilungen über die Spirochæte pallida (Treponema Schaudinn). K. Herxheimer and M. Opificius.
62 Instrumenttisch mit elektrischem Anschluss-Apparat für Hals-Nasen- und Ohrenärzte (otorhinologic stand). Helbing.
63 Emotions and Heart Disturbances.—Beziehungen von seelischen Empfindungen zu Herzstörungen. F. Veiel.
64 Measures to Arrest Diphtheria.—Bekampfung der Diphtherie. B. Fischer. (Concluded).
65 Kriegschirurgische Erfahrungen im Russisch-Jap. Kriege 1904-1905. W. v. Oettingen.

48. **Passive Congestion in Treatment of Acute Suppurative Processes.**—Colley has become a staunch adherent of Bier's method of artificial hyperemia, with which he now has had extensive experience. In order to demonstrate the bactericidal action of the procedure, he made a bouillon suspension of pus from an empyema on the elbow, and to one-half the amount he added some edema fluid. He then injected the fluid into mice and found that the animals injected with the bouillon to which the edema fluid had been added did not become so sick as those injected with the untreated bouillon, and none died. He applied passive congestion to the sound arm, and added some of the edematous fluid thus derived to the bouillon, but was unable to detect any influence on the virulence of the bouillon afterward. These and other experiments have convinced him that the limb separated by the constriction from the rest of the body is the seat of biologic processes of a special kind. The edema fluid in the constricted limb contains antibodies which exert a destructive action on microorganisms and aid in the struggle against the invading affection. It is a familiar fact that similar antibodies are found in the serum of blisters formed by application of tincture of iodin. Colley has also noticed that the inguinal glands on both sides and the axillary on the sound side are liable to swell during the period of constriction. The swollen lymph glands are slightly tender, but conditions return to normal when the constriction is removed. The results of passive congestion are good in all acute suppurations, but really remarkable effects are obtained in puerperal mastitis and in inguinal buboes. In one case of encapsulated appendiceal abscess the patient presented indications of a severe septic affection. Under the diagnosis of septic thrombosis of the portal vein operation was deferred, and he was treated by application of a large Bier aspirating cup between the costal arch and the iliac crest, the vacuum was induced with a syringe. The symptoms subsided and the patient promptly recovered. A few months later the appendix was removed and the man has been healthy since. Colley has also applied the aspirating cup in cases of perimetritic exudates and gonorrheal salpingitis. The cup or jar used is a large one, and the pelvis is always raised. The procedure is not applicable to very stout persons. He has had no opportunity to try this technic in actinomycosis, but anticipates that it will prove effectual. The necrotic plug in an advanced furuncle usually comes out the second or third day of aspiration, but incipient furuncles are aborted in a single sitting. His experience with 9 diabetics was not encouraging; the application of the aspirating cup caused a circle of gangrene, which has deterred him from its use in severe cases. Treatment of eczema with the aspirating jar is a promising field, judging from his experience to date. He has found that the action of the passive congestion was enhanced by warm baths (37 C.-98 F.), except in cases of cutaneous affections. The stimulation to the circulation aids in transporting away the last traces of the passive congestion. The physician who hesitates to try the new method in the clinic can test it on himself first. Its future is as assured, Colley thinks, as that of chloroform, diphtheria antitoxin or herniotomy for incarcerated hernia. It seems to be destined to work as great a transformation in the treatment of acute inflammations as Lister's method of treating wounds.

Herhold describes his experience with 35 cases, summarizing his conclusions in the statement that passive congestion may give extremely fine results, especially in case of felons and furuncles. On the other hand, it is not a general panacea, and it may fail. In case of severe phlegmon, it must be applied with caution and with conscientious supervision of the case. The little apparatus described and illustrated by Mindes is a contrivance by which the constricting band can be tightened or loosened with a key.

56. **Toxin Causing Eclampsia.**—Zweifel's later researches have confirmed his previous conclusions as to the importance of zinc paralactate in the urine of eclamptics as the expression of deficient oxidation. His previous communication on the subject was mentioned on page 545. The main indications are, theoretically, to supply oxygen, but inhalation of oxygen has not proved so effectual as anticipated. He has begun to inject it subcutaneously, and although he has not yet observed much benefit its harmlessness has been established. He has lately been pumping air into the mammary glands, like the veterinarians. He has also tried to make the shallow respiration of the unconscious eclamptic deeper by faradization of the phrenic nerves.

Lockemann describes the technic for examining the urine and organs for zinc paralactate, and also reports the findings in 4 eclamptics. The blood in the umbilical cord contained ten times more of the lactate than the maternal blood in one case. The crystals that formed indicated the presence of some other organic acid besides the paralactate.

57. **Pure Milk Supply.**—Hempel describes the conditions in a model dairy near Dresden, in which milk is obtained under such aseptic conditions that it can be sent to Bremen without ice during the summer, and has been found sweet and pure after crossing the ocean in an ice-box. He gives illustrations of a contrivance which ensures the even mixing of the milk in a pail while avoiding drawing the milk at the surface and that at the very bottom of the pail, where germs congregate most. If the milk is to be sent a great distance during hot weather, it is frozen in a freezer. Quite fresh milk does not suffer from freezing, but milk that is a little old curdles as it melts.

60. **Clinical Test for Fat in Feces.**—Hecht describes a modification of Gerber's acido-butyro-metric method for testing milk, adapted for examination of the feces.

Virchow's Archiv, Berlin.

Last indexed, page 997.

66 (CLXXXIII, No. 1.) Participation of Nerve Trunks in Vasomotor Innervation.—Beteiligung der Nervenstämme der bluteren Extremität an der vasomotorischen Innervation der distalen Gebiete derselben, und Veränderung der vasomotorischen elemente nach Beschädigung des N. Ischiadicus. M. Lapinsky (Kiev).
67 Ovarian Pregnancy.—Eierstocks-Schwangerschaft. H. W. Freund and R. Thomé. One case.
68 Early Forms of Tuberculosis of Seminal Vesicles.—Frühformen der Samenblasentub. M. Simmonds.
69 Fall von Leber-Venen- und Pfortader-Thrombosis (of vena of liver). Umbreit.
70 Zur Kenntnis der Myelom-Zellen. E. Menne.
71 Primäres Sarkom des Magens (of stomach). A. Fuchs.
72 Primarer melanotischer Gehirn-Tumor (of brain). D. S. Minelli.
73 Zur Kasuistik primärer Multiplizität maligner Tumoren. A. Schmincke. One case.
74 Befunde am chromaffinen System bei Hitzschlag (heat stroke). J. Wiesel.
75 (No. 2.) Zur Kenntnis der Antifermente. H. Beltzke and C. Neuberg.
76 Untersuchungen über die elektrische Leitfähigkeit der Ascitesflussigkeit bei experimentell erzeugter Niereninsuffizienz (electric conductibility of ascitic fluid in insufficiency of kidneys). K. Sasaki.
77 Bedeutung der pathologischen Glykogen-Ablagerungen. O. Lubarsch.
78 *Ueber Pankreas-Cirrhose (bei Diabetes). G. Herxheimer.

78. **Cirrhosis of the Pancreas in Diabetes.**—Herxheimer's communication fills 113 pages and is accompanied by several colored plates. He has had opportunity to examine the pancreas in 36 cases of diabetes, and his conclusions are rather against the "islands of Langerhans theory." He is inclined to accept changes in the parenchyma of the pancreas as the cause of diabetes. Recent research by Karakascheff and Reitmann has converted them also to this opinion. In 5 cases described in detail, the alterations in the parenchyma of the pancreas were very pronounced. They were accompanied also by the efforts at regeneration characteristic of cirrhosis of the pan-

creas. This indicates that not only anatomically, but also physiologically, the essential injury inducing the diabetes must be sought in the parenchyma rather than elsewhere in the pancreas.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed, page 921.

79 (LVIII, Nos. 5-6.) *Determination of True Size of Heart with Roentgen Rays.—Bestimmung der sogen. wahren Herzgrösse mittels Roentgenstrahlen. W. Guttmann.

80 *Die Transplantation nicht bösartige Geschwülste (of non-malignant tumors). R. Neumann (von Leyden's clinic, Berlin).

81 Zur Mechanismus der Aorten-Klappen (valves). E. Mai.

82 *Eine klinische Methode zur Bestimmung des Eiweisses im Blute (determination of albumin in blood). Deycke and Ibrahim (Constantinople).

83 *Zur Entfettungstherapie (treatment of obesity). Rheinboldt (Kissingen).

84 Profuse Hematurien und kolikartige Schmerzen bei Nephritis. S. Askanazy. See editorial on page 1114.

85 Ueber die Erzeugung von Antikörpern durch Injektion artfremder Leberzellen (production of antibodies by injection of alien liver cells). L. Michaelis and P. Fleischmann.

86 *Sphygmo-Kardioskop. L. Forstetter (Bialystock, Russia).

87 *Mercurial Inunctions and Their Influence on the Urinary Organs.—Quecksilbersehmierkuren und ihre Einwirkung auf die Harnorgane. C. Klieneberger (Königsberg).

88 *Microscopic Stagnation of Stomach Contents as Sign of Cancer in Lesser Curvature.—Mageninhaltsstauung mikroskopischer Art. V. Ziegler (Carlsruhe).

89 Ueber das Vorkommen eines Antipepsins im Magensaft (in gastric juice). L. Blum and E. Fuld.

90 *Influence of Pancreatic Juice and Bile on Digestion in the Intestines.—Der Einfluss des Pankreassaftes und der Galle auf die Darmverdauung. T. Brugsch (Altona).

91 Schlussbemerkungen zur Mechanik der Expektoration. E. Reichmann (Berlin).

92 Consequences of Saline Infusion After Nephrectomy.—Folgen subkutaner Kochsalzzufuhr nach Nephrektomie. Brandenstein and Chajes.

79. **Determination of Size of Heart by Roentgen Examination.**—Guttmann recapitulates the sources of error in Roentgen examination of the heart. It can never give the actual largest diameter of the heart with precision, as it shows only the largest diameter presented at right angles to the direction of the rays. Examination from the front, from the side and from above has each its advantages and its drawbacks. Orthodiagraphy is so unreliable that it is the rarest exception when two views taken of the same person under the same conditions exactly coincide. In conclusion, he remarks that it is really of comparatively little importance to determine the true size of the heart. At the most, the increase in the size of the heart determined in a given individual, if the possibility of blunders can be excluded, will allow certain conclusions in regard to diagnosis and prognosis. In every case, however, greater stress should be laid on the changes in the shape of the heart as a whole and of its various parts, and on functional tests.

80. **Transplantation of Non-Malignant Tumors.**—Neumann reviews the history of transplantation of living tissue. The transplanted elements display only a limited growth as a rule. Even the new growth of fetal tissue elements is checked. Scraps of fetal cartilage on a foreign soil follow their organforming tendency, but cease to grow when they have attained maturity. In some instances on record the transplanted tissue caused the production of dermoid cysts, but they remained encapsulated. Transplantation on a foreign soil has an undistakable inhibiting effect on the proliferation of the transplanted tissue. The inhibiting effect is greater the higher the vital qualities of the soil. Transplantation on an atrophic soil allows more prolific growth. The success in transplanting cancerous tumors on mice was obtained only on animals of the same species. Even the slightest racial difference was enough to prevent the proliferation of the transplanted elements. It has proved impossible to transplant the Jensen mouse tumors from Copenhagen mice on mice in the Berlin Cancer Research Institute, although they belong to the same species. Lanz has been most successful with transplantation of nonmalignant tumors. On the whole, Neumann concludes, transplanted non-malignant tissue is capable of a certain moderate growth, but sooner or later it retrogresses as a rule. In not a single instance has it been found possible to cause the development of an affection with malignant characteristics from transplantation of non-malignant tissue.

82. **Determination of Albumin in Blood.**—Deycke and Ibrahim have modified the Denigès cyano-argentimetric method of determining the albumin in the urine and applied it to the blood. The results have been so constant and the method permits of such precision that they recommend it in high terms after several years' experience and hundreds of tests on 56 patients. The principle of the test is that the albuminoids in the fluid are found and precipitated by a given amount of a potassium-mercury-iodid solution in the presence of acetic acid. They are precipitated in the form of mercury albuminate. In the filtrate, free from albumin, the loss of mercury from the formation of the mercury albuminate is determined in the albumin-free filtrate by the Denigès silver-cyanid method. It was found that the proportion of albumin in the blood was the same as the proportion of hemoglobin. This allows the exact amount of hemoglobin in the blood to be expressed in absolute figures instead of merely in percentages. The details of the simple technic are given in full, with summaries of the 56 cases tested.

83. **Thyroid Treatment of Obesity.**—Rheinboldt describes experiments with dogs showing the remarkable efficacy of thyroid extracts in reducing weight. The by-effects of thyroid treatment have been most numerous in the past when it was applied in obesity, as it is in this that abuse of the preparation is most common. Some of the symptoms observed have evidently been the result of damaged goods, the syndrome suggesting that of sausage poisoning. These mishaps are growing constantly rarer, as the thyroid is not being used so much in its natural form. Under thyroid treatment, he continues, efforts must be made to insure abundant feeding, especially with copious amounts of albumin. The treatment of obesity is favored by undertaking it during a period when the organism, on account of preceding under-feeding, is inclined to take up more albumin than usual. He will report later his experiences with patients treated on these principles.

86. **Sphygmo-Cardioscope.**—The apparatus described shows on a dial the relative behavior of the pulse, heart-action and sounds, as a demonstration of the physiology of the heart and vascular system in their inter-relations. It is designed particularly for teaching purposes, and a reproduction of the dial can be used for a lantern talk.

87. **Mercurial Inunctions and Their Action on Urinary Organs.** Klieneberger describes the findings in 37 cases after mercurial inunctions. They prove that this method of treatment is not so harmless as generally supposed. Changes in the urine develop almost constantly and are due to the action of the mercury on the secreting parenchyma of the kidneys. As this effect occurs early and after small doses, when manifest albuminuria develops the kidneys are already severely affected and general mercurial intoxication installed. As mercury is such an efficient remedy, we can not dispense with it, he adds, but we should not give it for a long time and without sufficient grounds in chronic nephritis, and even in that case it should be suspended if indications of serious albuminuria develop and casts are found in the urine.

88. **Microscopic Stagnation as Sign of Cancer.**—Ziegler announces that the first and sometimes long the only symptom of cancer in the lesser curvature of the stomach is the discovery of minute remnants of food at a time when the stomach should be empty. Even apparently normal macroscopic motor functions should not overshadow the importance of this sign of cancer in the lesser curvature. The microscopic findings to be conclusive should be repeated at various times and under various conditions. In 2 instances he made a positive diagnosis of cancer of the lesser curvature on this basis alone, contrary to the opinion of the consulting physician. In another case, for the same reason, his diagnosis was incipient cancerous degeneration of an old gastric ulcer in the lesser curvature. No other sign of cancer could be discovered. In these and in other cases the laparotomy confirmed the exactness of his diagnosis. This retention of microscopic relics of the stomach content is characteristic of cancer when, after evacuation of the stomach of the macroscopic remains of the food, microscopic relics persist to the next ingestion of food, not merely for an hour afterward. This daily finding persisted for months in certain patients. The retention is to be distinguished from the old conception of stagnation of stomach contents not only quantitatively but qualitatively as well. As a rule, it

is not even the precursor of the other. In the limited and persistent form to which Ziegler refers, it occurs only under certain conditions, that is, when part of the stomach wall in the lesser curvature or in its vicinity has become rigid by induration and lost its power of peristalsis. This is always the case in malignant disease. The presence of lactic acid bacilli is an early sign of retention, even of these microscopic amounts. Their resistance to lavage of the stomach is another important point for this indirect diagnosis of cancer. In late years his examination of cases of cancer of the lesser curvature has confirmed more and more the great diagnostic importance of the finding of these bacilli when the motor functions of the stomach are still apparently intact. In patients whose stomachs were apparently free from food at latest two and a half hours after a test breakfast without milk and seven hours after a test meal, he examined the stomach an hour or so later and again the next morning fasting. The little mass of mucus found in the opening in the tip of the sound was then examined under the microscope. These few mucous drops contain the evidences of the microscopic stagnation. They are examined for bacilli, for grains of starch, fibers of meat and droplets of fat. Leucocytes are also liable to be present, and suggest the point where the stagnation of the microscopic relics takes place. These findings can be encountered for weeks and months, without other symptoms, if the cancer does not happen to develop toward points where characteristic symptoms must follow. In his typical cases of this isolated microscopic retention there were no traces of blood, no tumefaction, cachexia, ascites nor glandular swelling. At most, only a family tendency, anemia and the peculiar pain in the back were observed. The microscopic stagnation persisted unmodified, even after rinsing the stomach with an infusion of tea or hops or a solution of silver nitrate. In non-cancer cases there is none of this microscopic retention. The stagnation is either macroscopic or entirely absent. The lactic-acid bacilli are also readily banished by one or two rinsings of the stomach. Their resistance to rinsings is characteristic of a malignant process.

90. **Influence of Pancreatic Juice and of Bile on Intestinal Digestion.**—Brugsch concludes his extensive monograph with the statement that processes affecting the functions of the pancreas and reducing the output of pancreatic juice diminish the absorption of fat in the intestines, but scarcely affect the splitting of the fat. He found, further, that uncomplicated exclusion of the bile was accompanied by a loss of about 45 per cent. of the fat in the stools. Consequently, if a larger proportion of fat is lost, it suggests participation of the pancreas in the trouble causing the icterus. When the pancreatic juice is shut off and the bile nearly so, from 80 to 90 per cent. of the fat is lost. The average loss of nitrogen in uncomplicated icterus is about 11 per cent., but when accompanied by a pancreatic affection, about 33 per cent. The carbohydrates are well utilized in cases of pancreas affections. Accelerated peristalsis in the small intestine is liable to entail a loss of fat up to 40 per cent., even when the secretion of bile and pancreatic juice is normal. Catarrh of the small intestine also hinders absorption of nitrogen and fat. When the proportion of dried stool is over 30 per cent., it should arouse suspicion of disturbance in the absorption of fat. The proportion of fat in the dried stools in case of icterus may amount to 80 per cent.; the average in case of a pancreatic affection is 60 per cent. In case of considerable loss of nitrogen the percentage of fat can drop still lower, and hence the proportion of fat in the stools should not serve alone as a sign of a certain disturbance in the absorption of fat. He adds other conclusions from study of diabetics and of dogs after removal of the pancreas. He did not find any essential difference in regard to the absorption of fat and nitrogen in man and in dogs after exclusion of the pancreatic juice. The particulars of his research on 15 patients are given in detail.

Gazzetta degli Ospedali, Milan.

Last indexed, page 655.

93 (XXVI, No. 151) *Action of Tuberculous Serum and of Antibacillary Serum in Resistance of Organism to Tuberculous Infection.—Azione del siero di sangue di tubercoloso, e quella del siero specifico antibacillare, nella resistenza dell' organismo contro l'infezione sperimentale. S. Livierato (Maragliano's Institute, Genoa.)

91 Oysters and Typhoid Fever.—Consumo dei frutti di mare e il tifo a Mestre. G. Appiani.

95 Influenza dei sali di calcio sulla pressione osmotica del sangue (influence of calcium salts). G. Spaduro.

96 *Forme anatomiche e cliniche della cirrosi biliare. C. Alessandro.

93. **Antibacillary Serum in Experimental Tuberculosis.**—Liviérato has been treating animals with an aqueous extract of living tubercle bacilli. Their serum acquired antibacillary properties with little antitoxic power, but it agglutinated when diluted 1 to 2,000. About 1.5 mg. of living, virulent tubercle bacilli, all from the same culture, with 1 c.c. of salt solution were put in small collodion sacs. The sacs were then placed between the loops of the intestine in guinea-pigs, one in each animal. The animals were then separated into three groups: the first group received no treatment, the second group was treated with serum from tuberculous patients, and the third group with the prepared antibacillary serum. The latter displayed marked curative power, preventing the development of the experimental tuberculosis in the animals and killing the bacilli in the test tube. The serum of tuberculous patients failed to show any curative action.

96. **Types of Cirrhosis of the Liver.**—Besides the types usually observed, Alessandro has encountered cases of cirrhosis of the liver with chronic icterus, slight hypertrophy of the liver and enormous hypertrophy of the spleen. He reports such a case and also one of still another type of cirrhosis of the liver. In the latter the liver is of normal size or slightly smaller than normal, and the spleen is also normal, but the kidneys are the seat of severe and constant lesions, the result of the severe and chronic icterus. Alcohol probably aids the development of this type also. The case he describes was in a mechanic of 49, addicted to liquor. The influence of the alcohol in these cases is like that of the typhoid toxins in the cases of cirrhosis of the liver following typhoid fever. The long interval that may elapse before the first symptoms appear is not an argument against this etiology, as osteomyelitis and gallstones may likewise remain latent for a long time. In one such case the biliary symptoms developed almost at once, while the cirrhosis did not manifest itself until nine years later. Agglutination was positive, even at the tenth year.

Norsk Magazin for Laegevidenskaben, Christiania.

Last indexed, page 1246.

97 (LXVII, No. 3.) Mistakes in Diagnosis.—Diagnostike-feil tagelser. H. J. Vetlesen.

98 Om glykosuri. H. C. Geelmuyden.

99 *Roentgen-Behandling af maligne tumores. S. A. Heyerdahl.

100 Om poliomyelit-mikroben. H. G. Dethloff.

99. **Roentgen Treatment of Malignant Disease.**—Heyerdahl's experience has been eminently favorable, especially with rodent ulcer. His 11 patients with rodent ulcer were all cured and also 4 patients with superficial epithelioma. The latter growths did not respond quite so promptly as the rodent ulcers. He reports other forms of cancer treated with varying success.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

FIFTY SEVENTH ANNUAL REPORT of the Board of Trustees and Superintendent of the Central Indiana Hospital for Insane at Indianapolis, Ind., for the Fiscal Year Ending Oct. 31, 1905. To the Governor. Paper. Pp. 91. Indianapolis: W. B. Burford, Printer, 1906.

THE HEREDITARY TRANSMISSION OF THE YELLOW FEVER PARASITE IN THE MOSQUITO. By M. J. Rosenau and J. Goldberger. Report of Working Party No. 3, Yellow Fever Institute, January, 1906. Paper. Washington: Government Printing Office.

NINETEENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH of the State of Ohio for the Year Ending Dec. 31, 1904. Cloth. Pp. 618. Springfield, Ohio: The Springfield Publishing Co. 1905.

THE MODERN MATERIA MEDICA. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, etc. Cloth. Pp. 306. Price, $1.50. New York: The Druggists Circular. 1906.

THE INTERNATIONAL MEDICAL ANNUAL. A Year-Book of Treatment and Practitioner's Index. Twenty-fourth Year. Cloth. Pp. 588. Price, $3.00. New York: E. B. Treat & Co. 1906.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION for the Year 1905. Vol. XXI. Cloth. Pp. 278. Detroit: Printed for the Association. 1905.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees!

VOL. XLVI. CHICAGO, ILLINOIS, MAY 5, 1906. No. 18.

Original Articles

THE EXTENT AND LIMITATIONS OF THE POWER TO REGENERATE IN MAN AND OTHER VERTEBRATES.*

T. H. MORGAN, PH.D.

NEW YORK CITY.

About the middle of the eighteenth century great interest was aroused in the power shown by certain animals to replace lost parts. The remarkable work of Trembley, Bonnet and Spallanzani made known some of the principal results with which we are familiar to-day. Many new facts have also been discovered since their time, but despite the fundamental importance of the phenomena of regeneration, little is known at present in regard to the physiology of the process. Nevertheless, a beginning in the study of the physiology of regeneration has been made, and I invite your attention especially to some of the more general aspects of this side of the problem.

In this connection I should like to discuss also the question why certain animals seem to lack the power to replace lost parts; and since man himself belongs to this class, the meaning of the fact is of direct and, perhaps, even of practical importance to us; for if we could determine why man does not replace a lost arm or a leg, we might possibly go further and discover how such a process could be induced by artificial means.

It has seemed to me that regeneration is only one phase of the general phenomenon of growth. If this is the case why does an animal that has ceased to grow begin to regenerate with great rapidity when a part is removed? If we turn the question around the other way and ask, why does an animal stop growing when a certain size is reached, we may attack the problem at closer quarters.

WHY DOES AN ANIMAL STOP GROWING?

In the first place, an animal stops growing not because its cells have lost their power of further growth. This much seems certain; for, if a part is removed all the cells at the cut surface begin to grow again. Moreover, this new growth does not take place as some writers have assumed from reserve cells, but from the formed tissues of the old parts. We must conclude, therefore, that in many, perhaps in all, animals, the cells, with possibly few exceptions, still possess the power of further growth. In fact the cells seem to have limitless powers in this direction, and something in the body must restrain their activity after a certain size has been reached. What is the nature of this restraint? What retards the development as the size approaches that of normal for the animal?

It has sometimes been assumed that growth is retarded or stopped because the animal can digest only so much food, and that the adult size is the stage of equilibrium between the amount of food digested and the amount of food used up. Now if this assumption is true, we might attempt to test it in the following way: If we remove a part of an animal—a tail or a leg for example—the remainder of the body ought to grow larger, because the food that went to nourish the part removed can now be utilized by the rest of the body. Suppose, for example, that we cut off the tail of a salamander, we would expect, if this view is correct, that the animal would increase in weight by just as much as the weight of the tail removed. As the new tail grows out the whole weight should remain constant; for, what is added to the new tail, day by day, must be lost by the rest of the body. In other words, after the operation the weight should increase rapidly to what it had been before, and then hold its own as the new tail develops.

I have recently carried out an experiment of this kind. The results are given in the accompanying table. Two sets of salamanders were weighed; in one set the tails were amputated and the animals were again weighed. The other set was kept intact as a control. Both sets were kept under the same conditions, and fed exactly the same amount of food. This is possible in the species that I have used, because the animals can be fed by hand and the amount of food thus regulated. As the table shows, the amount of food given at first did not cause an

TABLE SHOWING GAIN IN WEIGHT IN DIMYCTYLUS WITH TAILS CUT OFF AT BASE AND TAILS NOT CUT OFF.

Without tails.			Check.
1.23	Dec.	12	1.85
1.28	Dec.	13	
1.49	Dec.	18	1.70
1.53	Dec.	27	1.66
1.83	Jan.	5	1.98
1.90	Jan.	13	2.06
1.91	Jan.	20	2.13
2.07	Jan.	27	2.37
2.02	Feb.	3	2.19
2.13	Feb.	10	2.23

increase in weight in the check set, but the tailless animals increased in weight and in a week had made good the weight loss in the tails. They also continued to gain weight more rapidly than the check set.

It should be noted that the animals were in an underfed condition when the experiment began, and the difference in the rate of increase in the two cases may not represent what an animal might do that had already reached its maximum size. I have repeated the experiment on the same salamanders in a well-fed condition and have not always found the same difference noted in the preceding case. Since these animals have no definite upper limit of growth, they proved to be not well suited to test the question, although the greater initial increase in the tailless set may, in part, be due to the absence of the tail. The most interesting outcome of the experiment was that the increase in size is not due to the storage of fat, but to growth in all of the organs of the body. It might be supposed that the regeneration of a new part is due to the temporary increase of available

* A lecture delivered before the Harvey Society, New York City.

food, owing to the loss of the old part, but that this is not the explanation is shown by the following experiment: If we amputate the tails in two sets of animals, and starve one set and feed the other, we find that the rate of growth of the new tail is nearly the same in the two sets. After two months the starved animals are greatly emaciated, but the length of their new tails is *almost* as great as that of the well-nourished individuals.

In other words, the new part grows at nearly the normal rate while the rest of the animal is starving to death. Clearly, then, the power of regeneration is not determined by the amount of food digested. It is due rather to the greater assimilative power of the cells of the new part.

In this connection another curious fact should be mentioned. It has recently been shown by Zeleny, for the crayfish and for brittle-stars, that the greater the number of legs or of arms removed the faster each one grows. If one leg is removed it regenerates at a given rate; if two are removed each regenerates faster than when only one is absent, etc. This result recalls Pflüger's celebrated teleologic law; that in living beings the cause of every need is at the same time the cause of the fulfillment of the need. For example, lack of food causes starvation, and the starvation is the cause of the appetite that leads the animal to search for food.

I do not care to advocate this view, but simply to call attention to the neatness with which it covers the case of regeneration just given. The scientific explanation must be sought in some other direction. Zeleny has discussed the question whether his results may not be due to the amount of food. A certain amount of material is required to nourish a leg. If we remove the leg a surplus is present. If we remove two legs so much more surplus is present, which can go to nourish both new legs, and for a time both may grow faster than when only one leg is removed. If this were the real explanation of the increased rate of growth when more legs are removed it would follow that a starved animal would replace the two legs more slowly than a well-fed animal would replace one leg. I tested this possibility. One, two or three legs were removed from my salamanders. One set was starved, the other fed, and the individuals in the two sets compared. Little or no difference between the two sets could be detected; hence, I conclude that the result is not primarily one of food supply.

DIFFERENCE IN THE RATE OF REGENERATION.

Perhaps the most important facts bearing on the problem under discussion are those connected with the rate of regeneration at different levels. If the tail of a fish is cut off near the base the new part grows faster than when the tail is cut off near its outer end. The new tail may be replaced as soon when much is cut off as when less is cut off. The result is independent of food, for it takes place in the same way whether the fish is starved or fed. This relation between the rate of growth and the amount removed is found to occur in widely different groups of animals. King has shown in the starfish that when an arm is cut off near the base the new arm regenerates faster than when the arm is cut off near its tip. In the earthworm the results are the same, for the posterior end at least. If a few segments are cut off from the posterior end they regenerate with extreme slowness. If the worm is cut in two in the middle a very large number of segments regenerate; if the worm is cut in two further forward, behind the girdle, a still larger number of segments is regenerated in the same time.

What is the cause of this difference in the rate of regeneration at different levels? I am not certain that I can answer this question, but I should like to call attention to a remarkable agreement between this result and the normal process of growth. Growth is much greater in youth than in adolescence, and becomes less and less as the adult size is approached. We find this same relation in the newly-regenerated part. It grows less rapidly the nearer the cut surface is to the complete form. It seems, therefore, not improbable that whatever regulates the rate of growth of the animal as a whole also regulates the growth of the regenerating part.

Some writers believe that regulative processes in general are due to a vitalistic principle resident in living matters. In fact, the whole regenerative process has sometimes been referred to a mysterious formative or completing force, but so long as we do not know anything about such a force we gain nothing and lose a great deal. I think, by ending our search in such an empty phrase.

There is at least one physical possibility which in some form or other may explain the regulation of the growth process. Our problem, you will observe, seems to have narrowed itself down to determining an inhibitory factor, since we have assumed that the cells of the body possess unlimited possibilities of growth if given a suitable environment. It seems to me not improbable that the inhibition is caused by a definite response to a condition of mutual pressure or tension of the cells on each other. When this condition is reached further growth comes to an end. When we alter this particular pressure by removing a part, growth begins again.

What the nature of this pressure may be I can not say, nor how the cells respond to it, but taking all the facts into account, this assumption may at least give us an escape from the assumption of a formative force. Indeed, the formative force itself is nothing more, if my view is correct, than the response of the cells to the pressure relations of neighboring cells. The response of the cells to pressure determines their differentiation and the differentiation determines the limitations of the growth process. Thus the adult size of an animal is determined by the differentiation of its cells, and the differentiation is regulated by the mutual pressures of the cells on each other.

I am aware that this view is purely hypothetical and that it may appear somewhat vague, but when we get to the boundary of what is known we must have recourse to provisional hypotheses if investigation is to continue. It is in this spirit that these conclusions in regard to the influence that regulates the growth of new parts are offered.

REGENERATION IN VERTEBRATES.

Let us turn now to the less speculative and purely descriptive side of the problem.

Fish.—Beginning with the lowest group we find that fish have excellent powers of regeneration. The tail regenerates if removed at any level, and in some species even when the end of the vertebral column is also cut off. The lateral fins that correspond to the limbs of higher vertebrates will also regenerate if cut off, as well as the dorsal and ventral fins. In this connection I may recall an elaborate experiment recently carried out on the Pacific Coast. It has been said that salmon return after their sojourn in the sea to the same rivers in which they were born. In order to test this view, V-shaped pieces were cut out of the tail of thousands of individuals of young fish and parts of the dorsal or ventral fin were also cut off. The fish marked in this way was turned

loose in their native streams and their return from the sea awaited. It is needless to point out that the experiment was futile, for whether they returned or not they would regenerate their fins. In order to be sure that these salmon do not behave differently from other fish in regard to their powers of regeneration, I have operated here in the New York aquarium on two of the species of salmon used and have found that they have the power to regenerate the tail, the dorsal and the ventral fins. As yet I have not determined with certainty whether the adipose fin has the same power or not.

Salamanders and Newts.—Salamanders and newts have long been known to have remarkable powers of regeneration. Spallanzani cut off all four legs and the tail six successive times and each time new parts regenerated. He calculated for a single individual that, in all, 647 new bones must have been formed in the course of a single summer. The last time the legs regenerated as quickly as the first.

The eyes also of the salamander regenerate as long as a piece of the optic bulb remains attached to the nerve. In recent years the experiments of Colucci and of Gustav Wolff have attracted much attention. Colucci and Wolff have found that the lens of the regenerating eye does not come from the skin as it does in the embryo, but from the upper edge of the iris. We thus see that an organ may regenerate from a part of the body from which it is never derived in the embryonic development.

One of the most novel of the recent experiments with salamanders is that of Tornier.[4] He has shown how we can produce in the salamander, at will, a supernumerary leg. By cutting through the skin and the muscles at the side of the leg, and at the same time wounding the bone beneath, a new leg develops on the side of the old one. Unless the periosteum of the bone is injured nothing occurs. This shows that the material derived from the periosteum is the most important element in the formation of the new limb, and other results support this conclusion. In still another way a double limb may be produced. If the leg is first cut off and, after the regeneration has begun, a ligature is tied over the new tissue so that it becomes constricted into two parts lengthwise each will produce a new foot. Tornier suggests that the double limbs sometimes found in human embryos may be caused by folds of some of the membranes constricting the limb bud at an early stage of its growth.

Histologic Changes.—At this point I must say a few words about the histologic changes that take place in the regeneration of a new part. The process has been more carefully studied in the tail of the salamander than in any other animal. When the tail is cut off the skin grows over the cut surface in the course of a few days. Those parts of the muscles that lie near the cut end begin to break up. The muscular tissue, as such, disappears, and the protoplasm forms a ball around each nucleus. These are the so-called sarcoblasts, and out of some of them the new muscle-tissue is formed. A little later, or at the same time, the periosteum of the bone begins to thicken, and soon sends forward a cord of cells from the cut end of the bone into the new part. The segregation of the material of this periosteal cord now takes place and the centers of the new bones are laid down. The muscle fibers begin to develop out of the sarcoblasts: the nerve extends into the new structure, and the blood vessels also send out branches into the part. These changes continuing, the elements of the new limb are formed. All these changes must take place synchronously in order that a perfect limb develop. Should any one of the component parts lag too far behind the others a normal product will not be formed. I shall return to this question again.

Tadpoles.—The most striking case of the artificial production of supernumerary parts is that which Tornier has recently described for the tadpole of the frog. By a suitable operation a frog with four or even with six hind legs can be made. The method of operating was as follows: Young tadpoles were selected in which the beginnings of the hind legs were present as small knobs, one on each side of the base of the tail. With a pair of scissors the tail was partially severed at the base so that each leg rudiment was cut into two parts. As subsequent results showed, the blastema of the pelvis was also cut in two by the same operation. In consequence either two pelves developed and four legs, or in some cases three pelves (or their equivalents) and six legs. The results depend on the great powers of regeneration shown by the blastema of the pelvis and legs.

Barfurth has shown that the hind legs of older tadpoles have the power to regenerate, but after the tadpole has changed into the frog this power is rather suddenly lost. It has been generally assumed that none of the legs of the adult frog has the power to regenerate, but I have found that this is not always the case. In two instances I have seen a frog regenerate a new, imperfect fore-leg, but only after several months, and Mr. Goldfarb, who has been working with me, has obtained the same result. This occasional regeneration, imperfect though it be, shows that the power to replace lost parts is still to some extent present in the adult frog, so that it is one of the best subjects for future experiments in attempting to induce regeneration by artificial means. I have already carried out many experiments with this end in view, so far without much success, but enough has been seen to indicate that the quest is far from being hopeless.

Lizards.—Passing now to the higher groups we find that lizards can regenerate the tail, but not the legs. The new tail is imperfect, however, inasmuch as the vertebral column is replaced by only a cartilaginous tube containing a thin filament extending from the end of the old nerve cord. Double-tailed lizards are not infrequently found and can now be produced artificially by making a wound in the side of the old tail.

Birds.—In birds regeneration of new parts is still further limited, the beak alone of external organs having this power to regenerate if broken off.

Mammals.—Finally in the mammals neither the limbs, tail or other external organs have the power to regenerate if lost.

Thus as we ascend the vertebrate scale we find the power of regeneration diminishing.

What is the cause for this loss? Some zoologists seem inclined to believe it to be due to increasing complication of structure, but I do not think this can be the cause. The eye of the salamander is a very complicated organ, and yet it regenerates from a piece only of the bulb. Other zoologists, of whom Weismann is the most noted example, believe that the power to regenerate is something that has been acquired by natural selection in those animals most subject to injury, or in those parts of the body most often destroyed. This view I hold to be utterly erroneous. To give but a single case in point: The eye of the salamander is an organ that is seldom or never injured unless the animal itself is destroyed, yet as we have seen, it has astonishing powers of regeneration. If, then, neither complication of structure nor natural selection will explain why some vertebrates regenerate and others do not, is there any other explanation that can be offered? If, as I think probable,

the power of regeneration is closely related to the power of growth, inherent in the protoplasm, why should this power be lacking in certain forms?

WHY CAN NOT MAN REGENERATE AN ARM OR A LEG?

For several years I have been making experiments and examining this question in various ways. I do not feel that I can give you a satisfactory answer, but the evidence indicates, I think, with some probability, that the failure is due to the fact that the different tissues have very different rates of regeneration. In other words, each tissue in man seems to possess the power to regenerate its kind, but not all at the same pace, hence they fail to co-operate at the proper time to form a new structure. In man the skin regenerates; the muscles regenerate, though less well perhaps; the nerves and the blood vessels regenerate, and the bones even have a not inconsiderable power to mend and even to some extent to regenerate. Hence, as I have said, the failure of the new limb to develop does not appear to be due to the failure of the individual elements to regenerate, but is due to their failure to regenerate concurrently. The bones seem to be the main cause of the trouble, for they produce new material with great slowness.

In this connection it is instructive to observe that in the vertebrate series the failure to regenerate is found in cases in which cartilage begins to change into bone. Within the group of amphibians we find this change taking place. The newts and salamanders, with partly-cartilaginous bones, regenerate readily, and so do the larval frogs, while in the adult frogs, where the bones have become harder, regeneration has almost disappeared. In the lizard the power to regenerate its leg has been lost, but it can regenerate its tail; and the tail vertebræ are less hardened than the bones of the leg.

I do not wish to affirm that this is the only cause of the failure to regenerate in higher vertebrates, including man, but, as I have already said, there is some indication that the main trouble lies in the slowness of the bones to regenerate in time with the other tissues. But if the tissues in man still possess the power to regenerate may we not hope in time so to adjust their rate of regeneration that the replacement of a lost limb may be induced? I can not but think that some day this may be accomplished.

PERFORATION OF DUODENAL ULCER.

OPERATION AND RECOVERY.*

J. H. MUSSER, M.D.

AND

EDWARD MARTIN, M.D.

PHILADELPHIA.

MEDICAL REPORT BY DR. MUSSER.

Patient.—E. C., aged 39, white, American, manager of railroad, was admitted to the University Hospital Sept. 25, 1905, and was in profound shock and suffering much pain when seen by my resident physician, Dr. Keene, to whom I am glad to express my indebtedness for the notes, and the care and skill in attendance on the patient.

Previous Medical History.—For the past nine or ten years the patient has been a constant sufferer from "gastric hyperacidity." During this time he was under constant medication and restricted diet. Five years ago he was operated on for appendicitis.

History of Present Illness.—For five days before admission to hospital he suffered severely from gastric hyperacidity and vomited several times during the day, the vomitus consisting chiefly of highly acid mucus. He obtained relief from alkalies, such as sodium bicarbonate. The day he was admitted to the hospital he was feeling better, and at 12 o'clock, for luncheon, he ate a squab and a plate of soup, and drank a quart of apollinaris water, which is more than he had taken since the onset of this recent attack. He felt perfectly well until 5 o'clock on the evening of admission, when, on attempting to enter an automobile, he was suddenly seized with agonizing epigastric pain, so severe as to cause him to scream and to double him over. He was taken at once to a drug store, where sodium bicarbonate was given, but without relief. He then came to the hospital, about forty-five minutes after the onset of the attack. During the day he had had a good bowel movement resulting from hunyadi water taken in the morning.

Condition on Admission.—At 6 p. m. temperature was 97; pulse, 72; respiration, 24. He was pale, markedly dyspneic and suffering intense abdominal pain, chiefly in the epigastrium; the pain was also referred to the back, between the shoulder blades, and to the right shoulder. The pain was so severe that it was impossible for him to lie quietly, causing him to toss from side to side in bed, with the knees drawn up. On account of increase in pain it was difficult for him to breathe, and impossible for him to take a long breath.

Examination.—On examination the abdomen was found to be markedly scaphoid in shape; extreme general and cord-like rigidity were present. Not a click of peristalsis could be heard. Tenderness was more or less general over the whole abdomen, but the point of most acute tenderness was about the size of a dollar, situated in the right midclavicular line, just below the costal margin, where even the slightest touch would cause agonizing pain. If any difference could possibly be differentiated, rigidity was more marked in this locality.

Preliminary Treatment.—After the examination was made morphin 1/4 gr. and atropin 1/150 gr. were given, and in about five minutes the patient was seized with vomiting, which was gushing in character, very profuse (about three pints), and consisted of undigested food and clear mucus, with no microscopic blood. The pain was relieved somewhat by vomiting, and the man was able to breathe more deeply. In about forty-five minutes the anodyne had relieved the severe pain and he was much more comfortable. He had no more attacks of nausea or vomiting until 10:30 p. m., when he again became nauseated, but could not vomit, and the epigastric pain began to reassert itself. During the entire time the rigidity remained the same, and peristalsis could not be elicited. Simple enemata were given, but were ineffectual; under the opiate general abdominal tenderness seemed largely to subside, and the point of acute tenderness shifted a little to the left.

Examination of Gastric Contents.—On examination of the gastric contents no blood was present to the naked eye or revealed by the occult blood test. The gastric contents were highly acid, but not of a foul odor.

Blood Count.—At 8 p. m., r. b. c., 11,200; at 9. p. m., r. b. c., 16,000; at 10 p. m., r. b. c., 14,680.

Temperature, Pulse and Respiration.—At 6 p. m. temperature was 97.1; pulse, 72; respiration, 24. At 8 p. m. temperature was 98.2; pulse, 90; respiration, 22. At 10 p. m. temperature was 99; pulse, 108; respiration, 24.

Diagnosis and Operation.—The diagnosis of duodenal ulcer was made, and an operation was performed at 11 o'clock by Dr. Martin. An ulcer was found on the posterior wall of the duodenum, just beyond the pyloric orifice of the stomach. The perforation was about the size of a pinhead. There was extensive peritonitis.

The operation of inclusion with fastening of the omentum over the ulcer was done. The inflammation of the peritoneum was too violent and progressive to admit of prolonged operation. (See the remarks of Dr. Martin.) A rapid recovery followed, and to this day (February 1), the patient is without symptoms.

These facts present all the features of the case up to the time of operation. In review, it may be said that I saw the patient about 6:45 p. m. on the day of admis-

* Read before the College of Physicians, Philadelphia.

sion. There was evidently commencing peritonitis due to perforation of some hollow viscera, presumably the duodenum. Time for further brief observation to note the progress of the pulse, the temperature and the leucocytosis was admissible. Hourly reports were given me, and at 10 p. m. I requested Dr. Martin to see him with me and, if he concurred, to arrange for operation.

The diagnosis of duodenal ulcer was made because the pain during his many years of suffering did not take place immediately after food, indeed was often relieved by food; because hematemesis was absent; because there was no vomiting after food, and because of the location of the greatest pain, tenderness and rigidity.

The diagnosis of perforation was based on the history of the case and the mode of onset of the acute symptoms, pain and shock, the situation of the greatest tenderness and rigidity, the pain in the back and the occurrence of acute peritonitis. The pain in the back indicated a posterior perforation. The dyspnea was apparently due to an overloaded stomach and to pain and rigidity.

The diagnosis of peritonitis was made because of the presence of a very probable cause, i. e., perforation of some hollow viscera, because of the local and then diffused pain, the rigidity, the progressive rise in the temperature and pulse and the leucocytosis.

The interesting feature of the case is the fact that if there ever was a person whose gastric symptoms might have been deemed a neurosis this patient was of such type. He was of neurotic temperament; his business invited such a state; he smoked to excess, was accustomed to the use of stimulants and led a social life not conducive to an equanimity of function proper for digestion. At no time were there any objective signs to suggest ulcer. The character of the stools had not been studied before the onset of acute symptoms, and hence no statement can be made as to the occurrence of intestinal hemorrhage. It is true the hyperacidity from which he suffered was in all probability the causal factor in the production of the ulcer, and this, in turn, might have been the product of a neurosis. Against a neurosis his habit of indiscretion and heedlessness as to the mode of eating, time of eating and character of food count for much, so unlike the timid, finicky and apprehensive neurotic subject.

Because of the absence of the symptoms of lesion it behooves one not to put too much stress on the other leg and to allow temperament to be too serious a factor in diagnosis. The same may be said of the duration of the disease. Long duration does not rule out organic lesion.

I have had the privilege of reporting to the college two other cases of perforation of duodenal ulcer with operation and recovery. The first patient was operated on by Dr. Wharton Dec. 18, 1900. This patient is in excellent health, free from gastric symptoms and of greater weight than ever. The operation of inclusion was done. Much the same may be said of the second patient, a woman operated on by Dr. W. W. Keen Nov. 26, 1903. She has no gastric symptoms and is much heavier than before the operation. Dr. Keen sewed up the ulcer and performed a gastroenterostomy with a Murphy button. Somewhere within the abdominal cavity that button still lingers. There is every indication that it is in close proximity to Nature's button and that it makes itself known, notwithstanding the incompatibility of age, by those sensations which are not incomparable to those of the expectant mother.

SURGICAL REMARKS BY DR. MARTIN.

The accurate diagnosis made the surgical procedure in the case comparatively simple.

Of all the symptoms the one which most clearly indicated the need of immediate operation was the increasingly rapid pulse, which in four hours had run from 72 to 108. The leucocytosis was not progressive. The perforation was found without difficulty and was bathed in stomach contents, which had gravitated mainly downward and to the right into a pocket formed by adhesion of the cecum and ascending colon to the parietal peritoneum in front. Into this pocket a drainage tube was passed through the loin and from it drained about an ounce of turbid mucus. Thereafter there was no further discharge from this tube.

At the seat of ulceration there was a ring-like induration about the entire duodenum, forming a distinct stricture. Inversion of the opening was readily accomplished by Lembert sutures, the line of which was further reinforced by a strip of omentum. There were no signs of adhesive inflammation even on the part of the omentum, nor were there evidences of extravasation downward and forward into the pelvis.

A drainage tube was carried to the region of the foramen of Monro, and the wound was closed by large sutures.

Barring an attack of left-sided pleurisy, which strongly suggested an inflammation at the lesser omental cavity, convalescence was uneventful.

FRACTURE OF THE ALVEOLAR PROCESS OF THE RIGHT SUPERIOR MAXILLARY BONE.

WITH REPORT OF A CASE.

WILLIS E. HARTSHORN, M.D.
NEW HAVEN, CONN.

Fractures of the superior maxillary bone may involve the body, the nasal process, the malar process, the palate process or the alveolar process. They are comparatively rare, and for this reason a report of a case of fracture of the alveolar process which recently came to my attention may not be out of place, especially as the employment of the interdental splint and its advantages over other methods of treatment is well illustrated.

ETIOLOGY.

This class of fractures is almost always due to direct violence, a bad fall, a severe blow on the face, a gunshot wound or some other source of direct traumatism. The superior maxillary bone is well protected by the forehead, malar boue and lower jaw, making it less liable to injury than other more prominent portions of the body. The most exposed process of the bone is that including the alveolar margin. This is, therefore, the point where partial fractures most frequently occur. Next to this come fractures of the nasal process in connection with injuries to the nasal bones, fractures caused by dentists in the extraction of teeth and those occurring in operations for the relief of diseases affecting the maxillary sinus. von Bergman says:

The most frequent form of complete fracture is the transverse one. This usually runs backward into the pterygoid process. It results from a severe blow on the face from before backward, beneath the nostrils in the median line or somewhat lateral to this. The entire vault of the mouth with the teeth may be detached and displaced posteriorly. In very marked dislocations the posterior margin of the palate may

even rest on the posterior pharyngeal wall and obstruct the pharynx. Fissuring and splitting of the palate bones from before backward are not uncommon accessory injuries.

The body of the bone rarely fractures. In case the fall is from a height, a vertical line of fracture may occur or even a separation between the two bones. Following a blow from below upward on the upper jaw or from the side, a different type of lesion results, the line of fracture being guided largely in the direction from which the blow comes.

The entire alveolar margin may be detached if the direction of the force is lateral or oblique from above downward and a portion of the body of the bone may be broken off at the same time.

Observations by various authors on the effect of a blow directed from below upward seem to be very limited.

Regarding a severe bilateral injury, von Bergman says:

The entire median portion of the bony face may be broken off along a fracture line which runs from the nasal apertures toward the orbit, then circumscribes the malar bones and finally fractures the pterygoid processes at their base.

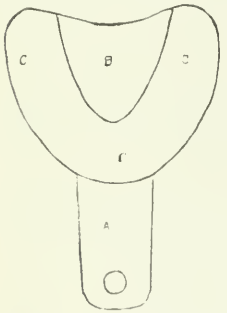


Fig. 1.—Dental impression plate. A, handle which was removed; B, v-shaped portion which was removed; CCC, grooved alveolar margin.

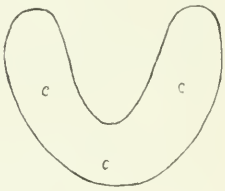


Fig. 2.—Dental impression plate as illustrated in Figure 1, without handle and with v-shaped section removed from the palate portion. Used as a temporary splint after filling the grooved alveolar margin, CCC, with dental modelling composition.

DIAGNOSIS.

This is usually easy, especially in fractures involving the alveolar process. A displacement of the teeth is almost always present. There is mobility of a portion of the alveolar arch, a bloody space between the teeth at the point of fracture, ecchymosis, swelling, crepitation and hemorrhage from the lacerated tissues if the fracture is compound. Pain and tenderness when the patient attempts to use the teeth is a prominent symptom. Emphysema of the soft parts may be present if there are comminuted fragments involving the nasal process with laceration of the mucous membrane. Pressure on the inner plate of the pterygoid process causes pain, and in extensive fractures is reported to be diagnostic.

PROGNOSIS.

The prognosis is generally favorable, even when the fracture is comminuted. Very severe injuries cause remarkably little deformity. Necrosis is very rare, as the alveolar process is thin and covered on both sides by periosteum. When this is removed on one side the other affords the necessary nutrition. Extensive fractures generally unite in from eight to ten weeks, though most dentists who do surgical work advise leaving the interdental splints in place for a considerably longer period. The time, however, depends largely on the severity of the lesion. Fragments of bone and loosened teeth should not be removed, as they soon become fixed in place.

TREATMENT.

The following case will best illustrate the treatment recommended:

Patient.—Male, aged 22, a barber by trade. On Sept. 12, 1905, while riding his wheel he was run into by another wheelman and thrown violently to the ground, striking on his face and receiving a fracture of the alveolar process of the right superior maxillary bone. He was unconscious for a short time after the accident. Owing to a severe attack of tonsillitis the patient did not seek surgical treatment until ten days after the injury, at which time the case first came under my observation.

Examination.—Examination showed contusions of the face and a fracture of the alveolar arch of the right superior maxillary bone, extending laterally from the median line to and including the first bicuspid on the right side. Posteriorly it extended for a distance of three-fourths of an inch. The fragment of bone was entirely separated from the body of the

Fig. 3.—The permanent splint in place.

superior maxilla and freely movable, rendering that portion of the jaw useless. The alveolar margin of the fragment was displaced downward for about one-quarter of an inch in the median line.

Treatment.—The treatment at first was unsatisfactory, but deserves mention as being easy and convenient. A dental impression plate of aluminum (Fig. 1), which could be easily molded to the form of the upper jaw and which can be obtained from any dental supply house, was carefully adjusted to the alveolar border, extending from the last molar tooth on the right side to the last molar on the left. This was accomplished by removing the handle of the plate and cutting a V-shaped section from the palate portion, leaving simply the grooved alveolar margin to act as a splint (Fig. 2).

Chloroform was then administered to the patient and the fracture reduced by constant, strong pressure brought to bear against the displaced alveolar border in the direction of the long axis of the teeth, crushing the partly formed callous until the line of the teeth was exactly even. The splint was then filled with dental modeling composition No. 2 and applied forcibly against the teeth, forming a firm interdental splint. This was removed once, the deformity corrected by filling in with modeling composition the cavity made by the displaced right central incisor, allowed to harden and then reapplied.

The splint, with a moderate amount of adjusting, held firmly in place for two weeks, but did not reduce the deformity satisfactorily, caused the patient a good deal of discomfort and also gave rise to a very considerable gingivitis. At the end of this time is was removed, another of aluminum applied and secured to the teeth by dental cement instead of the modeling composition before used. The method employed was as follows: By means of an impression plate and modeling composition a mold of the entire upper alveolar arch was taken. This mold was then removed from the mouth and a plaster cast made from it in the manner usually employed by dentists in making a plate. This showed exactly the amount of displacement of the fragment. This displacement, as represented in the cast, was reduced by cutting the cast vertically at the point of fracture and cementing the two portions together in the normal relation.

A zinc die was then cast from this and a thin sheet of aluminum, 26 gauge, B and S in thickness, was modeled exactly to fit the die and hammered firmly in place with the aid of a counter die of lead. The patient was again placed under chloroform, the fracture completely reduced by pressure, the aluminum splint forced firmly on the teeth and held in place by dental cement. Figure 3 is from a photograph of the patient with the permanent splint applied. The splint has been worn since without the slightest discomfort and the deformity so nearly reduced as to be hardly noticeable.

German silver or gold may be substituted, if desired, in place of aluminum, but German silver becomes corroded very quickly and gold is too expensive.

With the interdental splint the patient can eat solid food without difficulty and enjoys no more discomfort from its presence than is usually noticed in ordinary bridge or crown work.

The aid of a dentist is required in making and fitting the splint, which must be left in place from two to three months and should fit closely, but not extend so far toward the roots of the teeth as to irritate the gums. This splint can be used with equal advantage in fractures of either the upper or lower jaw.

PROPRIETARY MEDICINES.

SOME GENERAL CONSIDERATIONS*

GEORGE H. SIMMONS, M.D.
CHICAGO.

PROPRIETARY MEDICINES.

A proprietary medicine is a preparation that is owned or controlled by an individual or individuals. This control is held either by a copyright or trade name, or by a patent. Proprietary preparations controlled by copyright or trade names are generally mixtures, and are often secret or semi-secret in character. It is the name of the article that protects it.

There is no objection to proprietary medicines *per se*, if we are to recognize the commercial rights of those who supply us with medicines. The commercializing of the literature relating to our materia medica, however, —which seems to be necessarily associated with proprietary interests—is against a true scientific spirit and is demoralizing, both to pharmacy and to medicine.

The ideal proprietaries are those that are made so by the manufacturers attaching their own and not a fanciful name to the preparation. For instance, Squibb's ergot is a proprietary preparation, in so far that if a physician prescribe for this preparation he will get Squibb's ergot as surely as he would if it were sold under some fanciful name. So with other articles, whether mixtures or simples, if the maker's name is attached. These are the ideal proprietaries and ought to be encouraged, for this means the encouragement of a high standard of quality.

PATENTED MEDICINES.

Patented medicines are those which are made patent or open; in consideration of the owner making known his methods of manufacture he is protected against infringement of his rights for a certain number of years.

Nearly all patented medicines are chemical compounds "made in Germany;" but, incidentally, it might be said they are not much used in Germany; at least not as much so as in this country. Theoretically, there is no objection to patented medicines; at least, they are not secret, nor is there anything mysterious about them. Practically, they have become almost as much of a nuisance as the nostrums because of their vast and ever-increasing number, and especially because the manufacturers are so extremely anxious to get physicians to prescribe them that they often stretch the truth to the breaking point in the literature describing their value as therapeutic agents.

"PATENT MEDICINES" AND PROPRIETARY MEDICINES.

Proprietary medicines, theoretically at least, may be divided into two classes: those that are sold directly to the public, and those that are put up for and advertised only to the medical profession. The former are called "patent medicines." This is an arbitrary, absurd, and meaningless term, but one that will doubtless continue to be used. The latter, those advertised to physicians, are usually called "proprietaries." But when the Proprietary Association of America, an organization made up principally of "patent medicine" men, discusses the preparations put up by its members, it always calls them "proprietary," and there is no reason why it should not. The fact is, there is no technical difference between "patent medicines" and "proprietary medicines." But it is generally understood that the term "patent medicine" refers to those that are advertised and sold direct to the public; and "proprietary medicines" to those used by physicians. For the time being we are concerned with the latter only.

NOSTRUMS AND ETHICAL PROPRIETARIES.

Every one acknowledges that there are some proprietaries which are fraudulent, or which, for some reason or other, should not be used by physicians. Even those who most bitterly oppose the work undertaken by the Council on Pharmacy and Chemistry acknowledge that there are some proprietaries on the market that are not what they ought to be; in other words, are not "ethical." But what are they, and why are they not "ethical"? Are all of the thousands of proprietaries offered to physicians good and worthy of their patronage? If not, why not?

The fact that we use such terms as "nostrum" and "ethical proprietary" indicates that there are good and bad proprietaries. Would it not relieve the situation if we could agree on some definition of these terms Had we a general understanding of what we mean when we say a certain medicine is a nostrum, or an ethical proprietary, we would be able to discuss matters relating to this proprietary medicine question with a better understanding than is possible under present circumstances. In fact the whole problem rests on what we mean by these two terms. We know that a nostrum is a medicine that should not be used by a physician, and that an ethical proprietary is supposed to be all right. But why?

Nostrum (*noster*) literally means ownership, and thus should be synonymous with proprietary; and when we

* Read in part in a symposium on the Proprietary Medicine and Nostrum Evil before the Chicago Medical Society.

get away from this original meaning we begin to flounder among arbitrary definitions. Webster defines nostrum as "a medicine, the ingredients of which are kept secret for the purpose of restricting the profits of sale to the inventor or proprietor, a quack medicine;" Dunglison as "a secret or quack medicine." The term is certainly one of reproach and is meant as a slur on the medicine to which it is applied. And it is easy to understand how this meaning of reproach came when we realize that, even in the early days, any medicine that was controlled for profit by keeping its composition secret was regarded with disapprobation. Of course, secrecy was then necessary to ownership, as it is to-day with simple mixtures. And no matter how much we may labor to give a different meaning now, our forefathers considered any medicine a nostrum whose ownership was controlled by keeping its method of manufacture secret. This definition would be considered too narrow to-day; we must be satisfied if the ingredients and their quantity are given; the details of manufacture may be kept secret. But what proportion of proprietary medicines on the market to-day would escape coming under even this liberal definition of the word nostrum?

And what of ethical proprietaries? Are all medicines whose composition is given, including the amount of each ingredient, "ethical" proprietaries? Then Ayer's Sarsaparilla, and other "patent medicines" which publish their formulas, would be "ethical." And what about those proprietaries that are advertised to cure incurable diseases, and which are exploited under false and extravagant claims with the deliberate intention of misleading physicians? Are these to be classed with "ethical" proprietaries? Is there no standard by which we may judge what are and what are not "ethical proprietary medicines?"

It seems to me there must be some such standard, and I wish to submit the following propositions as a basis for a definition for such preparations.

1. There should be no secrecy or mystery connected with their composition.
2. There should be no secrecy or mystery regarding the firm which makes them or the place where they are made.
3. There should be nothing in the advertising literature concerning their therapeutic value which is untrue or misleading.
4. They should not be advertised, directly or indirectly, to the public.

I believe that no one who has any regard for the rights of physicians, for scientific medicine, or for legitimate pharmacy, will deny the correctness of the principles of the above propositions.

NO SECRECY OR MYSTERY.

1. Whatever is secret or mysterious is suspicious. This is a truism that needs no demonstration. Secrecy and mystery are the bulwarks of quacks and humbugs, and behind secrecy and mystery the "patent medicine" sharpers hide while they swindle the public; and with them the exploiters of nostrums delude and humbug unthinking physicians. Remove the secrecy and mystery connected with these preparations, and physicians who now prescribe some of them would be ashamed to acknowledge that they had ever been so foolish.

A physician not only has the right to know what he is giving his patient, but he has no moral right to prescribe a preparation of which he does not know the exact composition. Incidentally, we are facing a rather peculiar condition: the public is demanding and we are urging that the label on all "patent medicines" shall state the actual composition; and yet some of us are prescribing and so compelling our patients to buy and take preparations about whose composition we ourselves are ignorant. We are rightly demanding that the people shall be told exactly what they are taking when they prescribe for themselves. What will a layman say when he discovers that his physician is giving him a medicine whose composition his physician does not know?[1]

Another fact should be mentioned, incidentally also, in this connection: The legislation for the protection of the public against frauds in "patent medicines" and foods, provides for the examination of these articles by experts, so that the statements of the manufacturers may be verified. Should there not also be experts to examine medicines offered to physicians and to verify the statements regarding the composition of medicines they use? Evidently not, judging from the vehement protests from certain quarters when the American Medical Association secured for this purpose the services of experts and created the Council on Pharmacy and Chemistry. It should be noted that in all proposed or enacted legislation—national or state—the medicines used by physicians are exempt from its provisions; it is presumed that physicians know enough to take care that the medicines they use are what they ought to be. A sadly mistaken presumption this, judging from the past!

It is claimed that if the owner of a proprietary medicine should divulge the exact ingredients and the amounts of each, his rights would be gone, since others would make it. In reply, let me assure you that there is hardly a nostrum put on the market whose composition can not be detected by the bright fellows connected with other manufacturing pharmaceutical houses, who, if they desire, can put up practically the same product, and this is actually done pretty generally. But it is true that if the formulas of at least 90 per cent. of the secret, or semi-secret, proprietaries on the market were made public, and if all secrecy and mystery regarding their actual composition were removed, there would be no more call for them by physicians, for there would be revealed to physicians what is known to experts who have looked into the matter, viz.: that these wonderful preparations are very ordinary prescriptions which any educated pharmacist can compound. I am referring now to the thousands of articles that are foisted on our profession by what I shall refer to later as pseudo-chemical and pseudo-pharmaceal companies; I do not include the so-called "elegant" non-secret pharmaceutical preparations, such as elixirs, syrups, tablets, capsules (especially when containing liquids), bougies, etc., that require more skill, or greater facilities, in their manufacture than is usually found in the ordinary retail drug store, and

1. The members of the Proprietary Association of America are fully alive to this weakness of the medical profession, as is shown in the editorials appearing in various newspapers throughout the country, which are obviously dictated by the press committee of the "patent medicine" men. The following quotation from the Newburgh *Daily News*, March 26, may serve as an example: "The article speaks of secret preparations which are sold to physicians only under high-sounding and coined names and which are prescribed by them in utter ignorance of their ingredients. "The name is intentionally puzzling and the drug may be composed of morphia, cocain, digitalis, strychnin, or any other deadly drug for all the doctor knows: Arsenauro, Neurosine, Phennigin, Svapnia, Firwein, Celerina, Dioviburnia, Ammonol, Peptenzyme, Bondyptol, Alctris Cordial, Apiolline, Peacock's Bromids, Alkalithia, Urceden, Frellgh's Tonic. These and many hundreds of others, including a number of coal tar derivatives under different names, with their deadly heart depressing effects, which have been directly responsible for hundreds of sudden deaths, are blindly prescribed by the physician."

that are made by pharmaceutical houses which employ skilled and scientific chemists and pharmacists and which have every facility for such work.

A common argument offered by the promoters of secret proprietaries is that they have spent time and money in developing them and, hence, can not afford to give up their secrets. As regards this, I assert that the only expense attached to the development of ninety-nine out of every hundred of these preparations is that which has gone into bottles, labels, advertising literature, and in wages paid to smooth-tongued detail men to visit and delude the doctors. In this they have undoubtedly spent money—lots of it, and successfully. But aside from this, all the talk about the time and money invested in developing these preparations is the veriest bosh. The capital required to start Antikamnia, a combination alleged to have been suggested by a physician, and which has netted a fortune to its owners, was simply that which was necessary for advertising. The ingredients were cheap and no skill was required to mix them. Ammonol, we are told, was the result of the suggestion of a physician that carbonate of ammonia should be used in the place of caffein to counteract the action of acetanilid on the heart; and Phenalgin, it is alleged, is simply the result of another "company" branching off from the Ammonol Company with practically the same mixture under another name. The amount of time and money required to work out the acetanilid mixture, Sal Codeia-Bell, I leave to your imagination. How much knowledge, time and money do you suppose were necessary to originate Tongaline, Neurilla, Pasavena, Anasarcin, Manola, Sanmetto, Ecthol, Neurosine, Benzol Capsules, and thousands—I am not exaggerating when I say thousands—of analogous preparations? Are these anything more than ordinary simple mixtures of well-known drugs? Do they require more than ordinary pharmaceutical skill to compound them? Are they any better combinations of drugs than the average physician is prescribing every day?

RELIABILITY OF MANUFACTURERS.

2. Next to knowing what is in the combination we are using is the knowing who makes it, whether the manufacturer is competent, reliable and has the necessary equipment. Ordinarily, when we buy an article of commerce, regarding the quality of which we have no confidence in our own judgment, we select a responsible, established firm, one which has a reputation, and we take the firm as a guarantee that the article will be up to the standard and one on which we may rely. Should we not do the same when we select medicines to prescribe for our patients? And yet one of the most noticeable facts connected with the nostrum business is that the vast majority of these preparations are supplied us by firms about which we know little or nothing, and which, for a better name, I designate "pseudo-chemical" or "pseudo-pharmacal" companies—companies which are created solely to exploit this class of medicines. These companies are not in the true sense manufacturing chemists or manufacturing pharmacists, if by these terms we mean that they are in the regular business of manufacturing the various chemical and pharmaceutical preparations. The latter have their catalogues or price-lists, which include preparations official and non-secret, called for in the regular course of such business. They have more or less complete laboratories and expert chemists and pharmacists. While some of them put out preparations of a secret and more or less doubtful character, this is a side issue with them. Some "pseudo" companies are really connected with regular manufacturing and pharmaceutical houses, through which these houses exploit doubtful preparations, that, for reasons best known to them, they are ashamed to exploit openly. But the nostrum output of all the regular manufacturing pharmaceutical and chemical houses is trifling compared with the vast number that are foisted on our profession by companies that are in no sense regular manufacturing pharmacists.

If we should get behind the scenes we should find that the personnel of most of these "pseudo" companies consists of men who have no interest in, or knowledge of, either medicine or pharmacy. Many are merely promoters who have created a fictitious "company" through which to exploit to our profession some cheap nostrum. Once in awhile the "company" will be found to consist of a doctor or a druggist, who sees in this "specialty business" easy money. Ex-advertising agents in several instances form the personnel of such "companies." One "company" that I have in mind consists of a real-estate agent and a lawyer; originally it was a real-estate agent and a druggist, but the lawyer and the real-estate agent put up a job on the druggist and he was squeezed out. The preparation this "chemical company" exploits is made by a regular manufacturing firm, and the "company" does not have to attend to even the labeling or boxing of its preparation. And yet this is a "chemical" company!

Some of our "ethical proprietaries" are furnished us by the same men who, under other names, are supplying the public with "patent medicines." Certain homeopathic pharmacies are running "pseudo" companies as a side line, and exploiting nostrums to the regular profession. And, as I have stated, a few old established pharmaceutical houses and retail druggists, under anonymous names, are doing likewise.

But while there is mystery connected with the personnel of many of these pseudo-companies, there is just as much mystery connected with the place of manufacture. Some of the "companies" have their preparations made for them by regular manufacturing houses just as many "patent medicines" are made. In other instances the "laboratory" is a back room in a business block not far removed from the business office; an ordinary store room on a side street often answers the purpose.

Let me suggest, therefore, that before prescribing a preparation we not only should know what it is, but also who makes it and where it is made. If the name of the manufacturer is not known let us find out something about him. If the "company" or individual is not a legitimate manufacturing concern, but is merely putting up one or two "specialties,"—often a dignified name for nostrums—we should be suspicious. We should be very suspicious if a detail man calls on us representing a "company" which bears the same name as the product he is cajoling us to prescribe for our patients.

I am not making a plea for manufacturing pharmacists, at least so far as claiming that they are what they should be. On the contrary, I am sorry to say that too many of them are putting out "specialties" that are the veriest nostrums. Examination of some of the products of a few of the supposedly reliable houses has shown that our profession has been sadly deceived and humbugged by even such houses. But the number of regular manufacturing firms who have been practicing this deception is probably small, and the total number of nostrums or fraudulent preparations from all these houses

is insignificant compared with those that emanate from the "pseudo" concerns.

The nostrum, or secret "specialty," is a side issue with legitimate manufacturing houses, and when they find that our profession is awake, they will stop this dishonorable business. While some of them will dislike to do this—for these "specialties" are very profitable—they will do so rather than have their legitimate business injured by exposure of their illegitimate. But what about those whose business consists entirely in making and exploiting nostrums? Will they give up willingly? Will they stop for fear of exposure? By no means. It is their livelihood. It is too lucrative a proposition to give up without a desperate fight. And as there are some three or four hundred of such concerns in this country, is there any wonder that this movement has met with tremendous opposition, an opposition which, combined, represents millions of dollars!

I want to emphasize this phase of the problem, and to declare as emphatically as I can, that the great bulk of the nostrums are put out by "companies" that are neither chemical or pharmacal, and that these "pseudo" concerns bear the same relation to legitimate pharmacy that the ignorant quack doctor bears to an educated honorable physician. And one is as great a curse to pharmacy and chemistry as the other is to medicine.

Just a word in regard to imported mixtures. There seems to be an impression among many of us that if an article is imported, it must be something good, reliable, "ethical" and above suspicion. As a matter of fact, during recent years England, France and Germany—especially the latter two—have been sending mixtures to this country—mixtures that have been made especially for the American market, at least their sale is practically limited to this country—which are on a par with the nostrums of this country. Some of these foreign preparations are foreign in name only. Others are imported in a concentrated form and diluted here, and still others are imported as put up abroad. There are so many disreputable preparations among them, and they are advertised and exploited so often with such utter disregard for truth, that it is well to be suspicious of all. Further, while we are willing to recognize the superiority of the German chemists in certain lines, American pharmacy for a third of a century, has been leading the world—and is leading to-day. It is certainly not necessary to go abroad for our pharmaceutical mixtures; but if we do, let us be sure that they are at least as good as, if not better than, those made by our own people.

EXAGGERATED STATEMENTS.

3. Of course, every one—including the manufacturer—will agree with the third proposition: that no untruthful claims should be made regarding the therapeutic value of medicinal articles. And yet, what a reflection on the veracity of the manufacturer, and especially on the credulity and tolerance of the physician, is the great bulk of the advertising "literature" furnished by the manufacturers of proprietary medicines. I won't take time to illustrate, by quotations, the correctness of this statement. If any of you would criticise it, look at the "literature" that has come to your office during the past week, or at the advertising pages and "write-ups" in some of our medical journals. It is to our disgrace that we have so long put up with the foolish and extravagant claims and falsehoods of proprietary medicine men.

INDIRECT ADVERTISING TO THE PUBLIC.

4. The fourth proposition is the one to which a certain class of proprietary men most object; but to the physician it is the most important. The Council on Pharmacy and Chemistry incorporated this principle in Rule 4, which is:

> Rule 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

It is a manufacturer's business to sell his wares; it matters little to him who buys them. This is business. The manufacturer of drugs is no exception to this general proposition. Consequently, we can not blame him if he tries to get the public to buy the wares he puts up—ostensibly "for physicians' use only." But physicians object to the advertising of medicines direct to the public—not for selfish reasons, but because their indiscriminate use by the public is more likely to be injurious than beneficial.

It is not necessary to give the reasons why the indiscriminate use and self-prescribing of medicines containing active or poisonous ingredients is detrimental to public health. Knowing the harmfulness of it, physicians emphatically object to the advertising of such medicines to the public.

Hence, few proprietary medicine manufacturers, who want physicians to use their preparations, do thus advertise. But practically all of them have been advertising indirectly to the public, until now without a protest on our part. This indirect advertising is by circulars accompanying the preparation and by labels on the bottles or containers, as well as by having the name of the preparation blown in the bottle.

Samuel Hopkins Adams charges that physicians are indirectly responsible for a large part of the "patent medicine" taking, and undoubtedly his charge is just. While the catchy name of the nostrum prescribed by the physician is partly to blame, it is the advertising matter which the layman gets with the medicines that does the work. The labels and circulars tell him of the various diseases in which the medicine is indicated. This is the kind of advertising that costs nothing; and, evidently, it is considered "ethical" advertising. But, above all, this is the advertising that pays. The patient has confidence in his doctor; his doctor, the patient reasons, has confidence in this particular medicine, and, therefore, it must be good; and if it is good for the particular trouble for which the doctor prescribed, it must be good for the other diseases indicated—and their name is usually legion—on the label and in the circular. If those of you who are in the habit of prescribing proprietaries will examine a package at your drug store—just as the patient will get it, too often, in spite of your directions to the druggist to remove the label—you will not wonder that so many of the proprietaries that have been on the market for any length of time are bought directly by the public, in much greater quantities than on physicians' prescriptions.

The manufacturer argues that the doctor himself wants to know what a preparation is good for. I reply, the doctor is not supposed to go to a drug store to learn his therapeutics. The manufacturer will see that the physician gets enough literature to keep him informed of the value of his preparation in every disease in which it is possible to use it. It is not usual for labels on official drugs and standard pharmaceuticals to contain the names of diseases in which the article should be

used; neither should such indications be permitted on proprietaries. But so long as we tolerate this abuse, just so long will the manufacturers keep it up; and we can not blame them; it is business. It is a method of exploitation that costs them nothing; they get the doctor not only to prescribe their preparations, but to put their literature in the hands of the public at the same time. And this literature has another and decidedly important effect: it aids and abets the druggists in counter prescribing. Has the time not arrived for us to demand of the manufacturer that he give us a square deal in this matter? Should we not insist that this indirect method of exploitation to the public shall cease?

Let us not blame the manufacturers for this nostrum business. We, and not they, are to blame. We have been allowing ourselves to be deluded without a protest. We have accepted commercialized literature in the form of therapeutic hints without question, and have been prescribing cheap drugs under a fanciful name, for which either we or our patients pay ten times their worth, without so much as a murmur.

The nostrum evil has grown until it is a curse to our profession. The use of proprietaries has become so common that the intelligent prescribing of well-known official drugs in their simpler form by many intelligent practitioners has become a lost art. The literature of the proprietaries has developed in many physicians an optimism and a contented spirit that has checked intelligent thought, independent action, and an ambition to progress. The nostrum business has cast a blight on our literature, debauched our medical journals, checked advance in scientific methods of treatment, and suborned the art of prescribing to the aggrandizement of commercial promoters.

Can we not rid our profession of at least a part of this blight?

THE SUBORDINATION OF MEDICAL JOURNALS TO PROPRIETARY INTERESTS.*

J. H. SALISBURY, A.M., M.D.

Assistant Professor of Chemistry, Rush Medical College; Professor of Medicine, Chicago Clinical School.

CHICAGO.

It would be difficult to overestimate the important influence of medical journalism on the opinion and action of the medical profession. The medical school is attended, as a rule, but once in a lifetime; the meetings of the medical society are usually infrequent, but the medical journal, like the newspaper, is an ever-present friend whose influence and advice are potent for good or evil. Whoever gains control of the medical press goes a long way toward securing a paramount influence on the entire medical profession. The control of the medical press by the proprietary medicine interests is, therefore, a matter of vital interest to every physician, and it is worth while to inquire how great and of what character this influence is.

PROPRIETARY ADVERTISEMENTS.

An extensive influence of this sort may be assumed from the fact that most medical journals are supported by advertising, and, while the necessity of this may be deplored, it is nevertheless an important fact to be reckoned with both in considering the reason for the subserviency of the medical press and in suggesting a remedy for the nostrum evil. It can be asserted as an axiom that no paper supported by advertising can pursue a policy antagonistic to the interests of its advertisers and retain their patronage which is necessary to its existence, and no paper dependent in part on advertising can escape the influence of its advertisers. A liquor advertisement would appear with bad grace in a prohibition paper, and it may be assumed that a journal which accepts the advertisements of proprietary preparations will observe a certain discretion in its advocacy of pharmaceutic reform, confining its denunciations to glittering generalities, firing blank cartridges, or at least directing its aim so as to be sure not to injure its friends.

That the majority of American medical journals can not in the nature of things be unfavorable to proprietary medicines is evident from an inspection of their advertising columns. Practically all medical journals carry advertisements of proprietary remedies. In one journal which is supposed to exhibit the highest ideal in the ethical conduct of medical journalism, 20 out of the 36 advertising pages were devoted to advertisements of proprietary articles; in another of high grade 9 out of 26 pages were used in the same way.

SUBSERVIENCY OF MEDICAL JOURNALS.

The extent of the subserviency of medical journals to the proprietary interests is further shown by the fact that a large proportion of medical journals have a department devoted to advertisements under the guise of reading notices, commercial news, therapeutic notes, etc. No pretense is made that these are genuine scientific articles, and it is tacitly understood that these columns are under control of the advertisers and that the articles are disguised advertisements. We note that financial advantage or necessity has compelled the paper, presumably devoted to the propagation of truth, to descend to the utterance of a commercial fiction, if we may not call it by a harsher name, and to become a silent partner to what frequently amounts to a scientific and commercial fraud.

A number of journals do worse and put such material under the heading of "Abstracts" and print so-called select original articles culled from other journals. This department is the reading notice concealed under a name which leads the reader to expect valuable summaries of medical progress and seems to put the stamp of approval of the editor on its contents.

In the next step, taken by a considerable number of journals, the editor and his contributors exhibit themselves as the willing slave of their proprietary master, having been bought and paid for. The write-up and the apologetic editorial exhibit the lowest stage of journalistic depravity. An estimate of the extent of this evil can be gained from the statement of a recent writer that the journals subsidized by the proprietary interests comprise one-half of those published in the United States.

I went through 27 medical journals, covering the past six years, and found one preparation, viz., "peptomangan," as the subject of forty-five original articles. In addition there were six editorial indorsements of the remedy. One editor went so far as to take up arms in defense of his patron against the aspersions of a rival firm which were likely to injure the business. In a somewhat cursory survey covering about 15 medical journals for the last 5 years, I have found about 300 so-called original articles written in praise of the various proprietary remedies, and the list is by no means complete. I think that the evidence is sufficient to show

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society.

that the medical press of the country is profoundly under the influence of the proprietary interests.

It may be objected that it is only the second-class journals which publish such articles. This is not entirely true, for such articles have been repeatedly found in the columns of some of the best periodicals in the country, although it must be said that there is a marked difference between different journals in their apparent relation to the nostrum traffic. Some openly uphold it; others silently consent; while a few, but an increasing number, positively condemn it. It must be remembered that the so-called second-class journals have, individually, a considerable and, collectively, an enormous circulation.

DEGRADATION OF MEDICAL JOURNALISM.

We have next to inquire what is the character of the influence exerted on medical journalism by these nostrum vendors?

The scientific and practical value of the literature is markedly lessened. The clinical reports presented in behalf of some preparations, peptomangan for instance, make the claim and have the appearance of giving the results of careful clinical and experimental work. The sincerity of the authors of some of these articles we are not disposed to deny, but the scientific value of their work is much impaired by its one-sided character and the lack of comparison and critical judgment. After an imposing array of blood counts, clinical histories, etc., the only fact established is that a certain set of patients recovered under the use of a preparation of iron. No comparison is made between the results obtained by the use of other forms of iron and those due to the administration of the remedy under consideration, and when such a comparison has been made, as was done by the Commission for the Study of Uncinariasis in Porto Rico, the results, not particularly favorable to peptomangan, are distorted to form the basis of the claim that the United States government authorities have endorsed a proprietary preparation.

The result of inserting such one-sided articles is to encumber the reading pages of the journal with worthless stuff and to create an uncritical habit of mind in the reader. Nothing but careless reading can be expected of the doctor who peruses such an article as "The Skin a Factor in Diagnosis" to find it an advertisement of a nostrum, or who hopes to learn something of value in regard to prophylaxis from "How to Assist Young Girls to Womanhood," but finds that the sum of the author's valuable advice is to give them peptomangan! Finding his time wasted in the careful reading of such articles, it is very natural for him to give little attention to the really valuable matter which may be interspersed between proprietary articles. What shall we say of the scientific character of a journal made up of such articles as that of W. C. Derby on the "Treatment of Chronic Gastritis"? This author tells us that he easily verified his suspicion that the patient had chronic gastritis, but does not think it necessary to tell us how he knew and gives no gastric analyses nor blood count. He does tell us, however, that he succeeded in the treatment by means of zymacin, nuclein, papain, manola tonic, bovinin and sanguiferrin! Surely, with such an equipment the Pharmacopœa may be relegated to the ash box. American medical writers have occasion to blush for some of their confrères.

The journal which is ready to sell its columns to the nostrum vendor can not be relied on to give the best editorial advice or to take a firm stand on the right side where the interests of the public or of its subscribers are opposed to the interests of the proprietary manufacturers. The editor of such a publication can not be a worthy leader of medical thought. And he may expect to find his paper quoted to support sentiments that he never uttered. In a pamphlet published by the promoters of peptomangan various journals are quoted as sustaining the superiority of the peptomangan as shown in the Porto Rico trials. In reference to the journal quoted, it is found that the enterprising manufacturer has simply quoted his own advertisement attributing its statements to the journal as if it were an editorial utterance!

The journals by giving their space to extravagant statements regarding the effects of such remedies are fostering blind reliance on drugs and delaying the advance of truly rational therapeutics.

WHAT IS THE REMEDY?

What remedy can be proposed for this state of things? Can we demand that medical journals shall exclude advertisements of proprietaries altogether? This would probably be too rigid a rule, but some regulation might be adopted as to the form of advertisements and the character of the remedies which should be admitted to the advertising columns. If the consensus of opinion of the medical profession could be crystallized into some definite requirements in regard to the advertisements that should be admitted to the pages of a reputable medical journal, we might have some criterion by which we could determine whether a journal is worthy of our patronage.

If, instead of inserting in his reading columns concealed advertisements of proprietary remedies, the space were devoted to lessons on pharmacy and chemistry, the editor might educate his readers to a point where they could rationally decide on the true value of the novelties proposed for their use without making disastrous experiments on their patients. The editor who fails to protect his readers against concealed frauds, which is the only proper characterization for many of these "write-ups," is false to the trust reposed in him by the medical public.

EFFECT OF PROPRIETARY LITERATURE ON MEDICAL MEN.*

N. S. DAVIS, M.D.
CHICAGO.

The printed matter issued by the manufacturers of proprietary and exclusive medicines is as various as are their products. The smaller part has a high scientific value; the larger part is a more or less clever advertisement of wares for sale.

Naturally, as a monopoly of a good thing is sure to bring wealth to the manufacturer, almost every drug maker endeavors to place on the market one or many specialties of his own. To insure his exclusive right to manufacture them, it is usual for him to patent the process or trademark the name.

The clever manufacturers employ able men of science to test with care the physiologic and therapeutic actions of their drugs, and these reports, when given to us in full, are of genuine value. In subsequent advertising, however, the results obtained are summarized and often so skilfully that disagreeable effects are lost sight of or minimized. Moreover, these summaries are imbedded

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society.

in a mass of optimistic writing by the advertiser or by physicians who record their impressions; not observations made with the accuracy which science demands.

Therefore, even the best of this printed matter, of which we all receive so much, is not to be trusted. On the other hand, so many things of value first come to us in this way that we can not reject it all.

Often, unfortunately, rank nostrums, disguised as chemicals of definite composition, are described in print that is a perfect imitation of the best class of advertising matter which I have just described.

That we may not be duped, it is necessary to know by reputation the chemists who vouch for the character of the drugs, also the reputation of the pharmacologists and clinicians who test their action.

The remainder of nostrum literature consists of descriptions of the impressions of various physicians as to the therapeutic effects of mixtures, which any clever pharmacist could duplicate if given the opportunity. The nature of the remedy is hidden, as a rule, in the brief statement that it is an especially pure preparation of some well-known drug. Although many therapeutic virtues are claimed for it, it is often inert or so potent as to be dangerous, unless its nature is fully understood. Such mixtures never should be used. If all members of the medical profession would absolutely refuse to prescribe ready-made mixtures, either in liquid, pill or powder form, they would destroy one, if not the greatest, hindrance to successful and rational therapy.

In the first place, it is impossible properly to adapt the dose of drugs to individuals if one dose is given to all. Moreover, ready-made prescriptions lead to slovenly therapeutic reasoning and practice. For instance, a mixture of digitalis, strophanthus and nitroglycerin is often given when the effects of the latter are not wanted, though those of the former are, because the giver is accustomed to dispense the combination whenever a cardiac tonic is needed.

The prescription recently copied by The Journal of the American Medical Association[1] from the original column of another and advocated by its author as sovereign in pneumonia illustrates a common ignorance of the composition of widely advertised and used proprietaries and an inclination to use them as though they were definite chemicals, not mixtures. The prescription to which I refer contains, first, a fair dose of acetanilid; second, sodium bicarbonate, and, third, bromo seltzer. The writer evidently did not know that the last also contained a fair dose of acetanilid and that in his combination he was giving a large dose of this powerful drug. Many physicians use nostrum mixtures at first because the sample is at hand, and later because it is easily dispensed, and the practice becomes a habit.

We can not blame manufacturing chemists for finding new things or advertising them as cleverly as possible. That they and the nostrum vendor are surprisingly successful in selling their wares is largely our fault.

Proprietaries are used in enormous quantities. All medical men are, to a greater or less extent, employing them; and it is skillful advertising which has made this so.

Assuredly, it is legitimate practice to try a new drug or chemical which promises to be useful, for if we did not there would be no progress in therapeutics. Unfortunately, a prompt recapitulation of results is rarely made, and useless drugs are not discarded as they should be. However, sometimes this does happen, notably in the case of Bergeron's treatment of tuberculosis and later in that of tuberculin and the *x*-ray. In a few months the whole medical world was apprised of the real value of these remedial agents.

We should see to it that all drugs are similarly weighed and labeled with their true value. Even our pharmacopeia contains inert and useless drugs retained because still prescribed and for which, therefore, a standard must be established.

Medical men are too prone to accept new drugs as they accept new ideas, because they are new, without sufficiently testing them or demanding the approval of recognized authorities.

I make a conservative statement when I say that on the desks of each of us from three to ten advertisements such as I have described are placed daily, but the education of medical men in therapeutics by manufacturers does not stop here. Drummers are about as numerous as circulars, and each gives a brief, carefully prepared lecture on the wares which he carries. A lecture which is often interesting and if it told the whole truth would be instructive. Unfortunately, only that which will help to sell the goods is told. It is often surprising, too, how ignorant the detail man is when questioned as to his wares on other points than those in the lecture which he has committed to memory.

It is not surprising that medical men have surrendered to manufacturers and accept their teaching, since their goods are advertised in almost every medical journal and not infrequently well exploited in so-called original articles in these publications.

Manifestly, the condition in which we find ourselves must be changed. That this may be accomplished we must, first of all, recognize the disease, so to speak, of which we suffer. Second, we should insist that the teaching of pharmacology and therapeutics in medical schools be confined to the drugs of the pharmacopeia. Third, we should take more interest in the pharmacopeia and demand that it contain only drugs of genuine worth, and that it be revised often enough to insure the admission of all valuable new ones. Let the pharmacopeia be made a standard for both the medical and pharmaceutical professions.

Lastly, a greater amount of pharmacologic and therapeutic research should be stimulated. During the second and third quarters of the last century a very large amount of knowledge of this kind was accumulated by painstaking research; but in the last twenty-five or thirty years the attention of those medical men who have been contributing to our knowledge has been centered almost exclusively on etiology, bacteriology and pathology.

It is not surprising that in proportion as the most original minds among us neglect the field of pharmacology and therapeutics the manufacturer seizes this opportunity to instruct us. For he can do his teaching in his own way almost unchallenged by authorities.

1. The Journal A. M. A., Jan. 27, 1906.

Good Advice on Writing Papers for Medical Meetings.—When writing your paper for the state meeting, remember several things; select a subject with which you have had rich and practical experience—anyone can read text-books without going a hundred miles, leaving work and business, and paying $3 a day to hear you read extracts from one; collect your thoughts, clarify and simplify them, boil them down and then write your paper; go over it again and cut out all non-essentials, and all self-evident data—and you will then have a paper from which everyone will learn something—and you will go home thoroughly satisfied and proud of your effort.—*Southern Medicine and Surgery.*

THE NOSTRUM FROM THE VIEWPOINT OF THE PHARMACIST.*

W. A. PUCKNER.
Professor of Chemistry, University of Illinois School of Pharmacy.
CHICAGO.

While the responsibility of the medical teacher for existing conditions will be discussed by another speaker, I can not resist this opportunity offered me, a pharmacist permitted to address physicians, to say that without question the insufficient instruction in materia medica, pharmacology, pharmacy and chemistry offered by schools of medicine is the direct cause of present conditions.

I wish to point out to you how this lack of proper training along the lines indicated has made the physician dependent on ready-made remedies, proprietaries and nostrums, and how this, again, has been the making of "patent medicines," has led to self-medication and to counter prescribing, and has been the cause of making pharmacists forget their professional standing.

As a teacher, I would like to add that not only has the instruction in these subjects been inadequate because of the limited time alloted to them and because the student is led to attach too little importance to them, but often also because of the instructor's lack of familiarity with the subject which he is supposed to teach. This condition is but too frequently brought to my notice by former students who, having graduated in pharmacy, have taken up the study of medicine. As an illustration, I may refer to an article by Dr. Galloway[1] in which he protests against some haphazard, incorrect statements made by teachers in schools of medicine. Dr. Galloway reports statements made in favor of a certain brand of chloroform as opposed to another kind; statements so unfair and unwarranted that they can but be taken to show the lecturer's unfamiliarity with the subject he teaches. Other instances are cited which show that the lecturers, not being sufficiently familiar with the chemistry and pharmacy of medicines, are led to draw on the imagination and to offer to students statements which are entirely at variance with the facts.

Since the newly-graduated physician, therefore, has but a limited acquaintance with the remedies which he must employ, his prescriptions are liable to be unsightly, nauseating or, because of incompatibilities, perhaps inert. As a result of this two consequences are probable: First, if the patient discovers the physician's incompetency, when again in need of treatment he will go to his pharmacist for advice, since the pharmacist at least is familiar with the remedies which are used in the treatment of disease; second, when the physician comes to realize his lack of familiarity with medicines then he most probably will fall back on the proprietary remedies, ready-made, with the dose on the label, of pleasant odor and taste and said to possess marvelous virtues.

The lack of familiarity with the common remedies often shown by physicians was strikingly brought to my attention recently. I was suffering from an attack of acute indigestion and called a physician; in due time the attendant placed a powder on my tongue and requested me to swallow it. The powder, which I later learned contained magnesium carbonate, at once formed a compact mass, firmly adhering to the tongue, much as plaster-of-Paris would. I asked for a little water and was informed that the physician had prohibited all food and drink, but that I might have a teaspoonful of water on promise not to swallow it. Naturally I removed the concretion still adhering to my tongue and made no further attempt to take the medicine.

Were such physicians but competent to judge the effect of the remedies which they administer the dependence on proprietaries would not be so bad, since most, or at least, many possess some merit. Unfortunately, however, the physician's training is likely to be such that he can not distinguish the rank fraud from the efficacious remedy, honestly made and sold. It is this inability to judge the effect of medicine which has brought about the custom, now almost universal, of outrageously exaggerating the virtues of these proprietaries. The following will illustrate how a physician often is led to use absolutely worthless remedies: Some years ago a preparation was placed on the market under the name of "Flora China," which was claimed to be "pure quinin sulphate," but to be tasteless and to do all that the bitter quinin would do. In appearance the substance resembled quinin sulphate and it certainly was tasteless, but on examination[2] I found it to be nothing but crystallized calcium sulphate. Yet some five years later a student told me that a certain physician prescribed it and had used no other kind of quinin for years.

In this way a large portion of the medical profession has become dependent on the advertising literature and the detail men of proprietary dealers for the treatment of their patients. They listen to tales of the wonderful virtues of "bracemup" or "stimuline," written probably by a person having no knowledge of medicine whatever or perhaps compiled from obsolete medical works.

Recently a letter sent by a pharmaceutical house to its salesmen ("detail men") came to my notice. This letter, after stating that a successful salesman must be a student of human nature, etc., went on to say that the educated physician should be approached something like this: "Doctor, I have here a preparation of —— ——: if you employ this drug in your practice you will find that this preparation of the drug, manufactured by reliable and skillful pharmacists, contains the very best quality of the drug and is combined in such a way as to obtain the greatest good from the remedy." Then it went on to say that, as pharmacists, it is the business of the manufacturing pharmacists to put into the hands of physicians drugs of the highest quality, knowing well that physicians will know what use to make of them. The letter continued that, unfortunately, however, there were a great many physicians of inferior education along lines of materia medica and therapeutics with whom such arguments would fail and who must be told that a certain preparation is good for a certain kind of cough, that another remedy is a "winner" in the treatment of a certain brand of this or that disease and who like to read glowing testimonials of wonders accomplished. This letter in conclusion suggested that the salesman must judge which of these two methods to adopt in approaching the doctor. That in any case it would do no harm to flatter by assuming that the doctor knew his business, and later to change the mode of attack if they should find that he did not know his business.

Finally, let me illustrate how the use of proprietaries by the physician must cause a lack of confidence on the part of the patient, and induce self-medication, or cause counter prescribing by the druggist, and be the making of "patent medicines." While practicing pharmacy one day I was asked to prescribe for a man who said that he had contracted gonorrhea. Instead I advised him to

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society.

1. Philadelphia Medical Journal, 1899, vol. iv, p. 995.

2. Abst. Proc. Amer. Pharm. Assoc., vol. xlv, p. 719.

consult a physician. Soon after I was summoned to the telephone and asked by a well-known surgeon for the name of "those black capsules that come in a flat box." In due time I was requested to fill the prescription, and although the capsules were taken out of their container and placed in an ordinary pill box, yet the patient recognized the familiar remedy at a glance and in no complimentary manner commented on the time and money wasted in consulting the physician.

Imagine the frame of mind of the patient who, having consulted his physician and paid his fee, learns that his prescription calls for orangeine or antikamnia, with which the daily press has made him familiar.

What do you suppose he will do when next he has neuralgic pain or any other pain; or if his sister or his brother or his aunt has any kind of pain?

But you say: "We do not prescribe remedies advertised in the lay papers. Yes, but how did Fellow's syrup, or worse still, McMunn's elixir, become a "patent medicine?" Because they were prescribed by physicians, who thus assumed the rôle of "advance agents." Rest assured that whenever a physician prescribes any of these remedies with nice, smooth, catchy names, no matter how illegible his writing, and even though he does not follow the advice of the promoters to direct that they be dispensed in original containers, with the "name blown in the bottle," patients will, sooner or later, learn what they are taking. If the remedy has the desired effect and cures this or that trouble the patient when next indisposed will purchase his medicine direct and dispense with the physician's services. Furthermore, he will recommend it to his friends, using the physician's name as a guarantee of its virtues. Next its advertisements will be transferred from the medical journals to the daily press and the physician will have officiated at the birth of another so-called "patent medicine."

A practice still more reprehensible, it seems to me, is that of supplying patients with "physicians' samples." Seeing that his physician tries on him remedies about which he plainly knows nothing, it is small wonder if in the future the patient will prefer to consult the "patent-medicine" literature of the daily paper or will study the placards on fence posts and in street cars to find some remedy fitted to cure him, since to him it must seem that his physicians did this when last consulted.

THE PROBLEM OF THE SYNTHETIC CHEMICAL COMPOUND.*

JULIUS STIEGLITZ, Ph.D.
Professor of Chemistry, University of Chicago.
CHICAGO.

In the attention given recently in the medical and lay press to the manufacture of drugs and medicines, interest has centered naturally in two classes of manufacturers; on the one hand those who appeal directly to the ignorance or the vices of the public to buy their patent medicines and nostrums, on the other hand, those manufacturers who, under the ethical mantle of dealing only with the medical profession, have been palming off on it under false names and titles mixtures as bad as any produced by the first class. There is a third most important class of manufacturers requiring serious consideration, the manufacturers of the legitimate, so-called synthetic chemical compounds which are being so largely exploited in medicine. The most serious problem confronting us arises from the enormous increase in the numbers of such compounds. We may well ask ourselves: Why are there so many new synthetics? Have they any legitimate reason for existing? What safeguards if any need the medical profession insist on in dealing with these products of legitimate houses?

The source of the rapid increase in the number of these preparations lies undoubtedly primarily in the competition for trade, in the desire for gain. The phenomenal commercial success of such synthetics as antipyrin, phenacetin, saccharin, etc., stimulated enormously the search for similar treasure-bringing discoveries, both in commercial and in university laboratories. At the same time the great commercial houses understand very well that for real and continued success they must offer preparations of real, intrinsic medical value, and to secure these they have been compelled to make science their handmaiden, and to go at the commercial problem through scientific experimentation. In this way, they undoubtedly are doing a service to humanity as well as to themselves.

Speaking as a chemist, there is a legitimate, ideal goal toward which this branch of science has a right to strive; we have every reason to believe that with patient work we can improve vastly on the valuable alkaloids and similar compounds offered us by Nature. With out ability to establish the complex structure of these organic molecules, to modify practically at will any detail or part of the molecule, to create, synthetically, any new forms we wish to have—a systematic study of the physiologic effect of every characteristic part of such compounds ought to lead ultimately to a rational and systematic theory and practice of the effect of synthetics in medicine. The great work of Fischer on the vital relations between the configurations of the sugar molecules and their ability to ferment and support life shows us the goal is not an impossible one. It is true that we have made comparatively little progress toward this goal—chemists have given to the medical profession a number of more or less valuable febrifuges, some hypnotics, they have modified some alkaloids, given the profession homatropin as an occasional useful substitute for atropin, hydrastinin as a scientifically evolved improvement on hydrastin, and a few more advanced preparations, but their successes have been on the whole very few and this would be discouraging if history did not teach a lesson of patience. I think I can make my point clearest by referring to the parallel case of the anilin dyes. Chemistry has succeeded in wresting from Nature the supremacy in the preparation of these dyes, we can make at will more beautiful, more lasting, more washable colors of every conceivable shade than Nature has produced, and this has been accomplished through the slow, careful mastery of scientific principles and details, discovered through a great many original investigators. And yet, it took our greatest organic chemist, Professor Baeyer, fourteen years to determine exactly the nature of indigo, and it took about fourteen more years to develop methods for the successful manufacture of this one compound.

That one fact ought to teach us patience in our progress toward the goal of medical chemistry. The problem here is a far more complex one and a far more important one, but we do not see why it should not lead ultimately even to the chemical preparation of those specific antitoxins which we must now draw from animals. We are far from our goal, but the feverish competitions of great houses and university investigators form the hotbed in which the germs of success must ultimately grow.

This brings us to the main point of my remarks: In the evolution of the dye industry bad dyes were often

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society.

thrown on the market, dyes that faded quickly, that would not wash, that we would now consider ugly; the cost of experience in this case was borne by the pocketbooks, perhaps by the tempers of the people. In the manufacture of synthetics, however, it is far more difficult to separate the good from the bad, and experience obtained at the expense of the one life, the one health of individuals, is too costly, and physicians do well to hesitate before this array of new synthetics. The manufacturers are interested parties—as they were in unloading bad dyes—many so-called investigations and write-ups under unknown names are as likely to be the bait in the trap. What are physicians to do? Shall they seek safety in standing still, or hesitate to take a forward step from fear it might prove a backward one? The only scientific solution of the problem as it seems to me would lie in the establishment of some institutions, perhaps international, for the impartial testing of promising new synthetics; or in default of such, in the formation of central bureaus of critical disinterested review.

The need of a check even on our great houses was brought home forcibly to my mind in some recent examinations I had occasion to make as a member of the Council on Pharmacy and Chemistry of the A. M. A.: a preparation from one of our great American houses bore in its literature the truthful statement that it is acetylamidobenzene-trimethylxanthine. I wonder how many physicians recognize that these thirty-five letters spell in simple English acetanilid plus caffein, a mixture as bad as any of those recently exposed, but coming from a great reputable firm and parading correct chemical synonyms other than those usually employed by physicians. This same firm widely advertises to the profession a certain hypnotic as being much safer than chloral—it bears in its description the statement that it is a compound of chloraethanal with a higher polyatomic alcohol, which is true. To a chemist that spelled at once chloral combined with glycerin—what physician, who would hesitate about prescribing chloral, would not like to use his own judgment as to whether chloral plus glycerin would be any safer? It seems to me, then, that physicians ought to insist that all chemical compounds whatever should pass before some reviewing board which will insist that the manufacturers give the plain truth, the whole truth and nothing but the truth!

THE RESPONSIBILITY OF THE MEDICAL TEACHER FOR EXISTING CONDITIONS.*

CHARLES SPENCER WILLIAMSON, M.D.

Professor of Clinical Medicine and Associate Professor of Medicine, College of Physicians and Surgeons; Consulting Physician to Cook County Hospital and Dunning Institutions.

CHICAGO.

THE TEACHER'S INFLUENCE.

The question of the influence of the medical teacher in the prescribing of nostrums goes hand in hand with the question as to how great an influence the medical teacher exerts on the student after he has graduated.

It may be said that the young practitioner is, in all essential details, an epitome of the ideas of his teachers. The more capable the practitioner, the greater his opportunities for practice and observation, the more extensive his reading, the more quickly does he become emancipated from this influence. After all, this is but natural and right. In the early days of practice, of what else should the tyro think when face to face with a difficult case, but of the teachings of his college days?

Just at this point it is essential that we emphasize something which is only too commonly lost sight of. The student of arts and letters, or the humanities in general, goes to an institution of learning essentially for the purpose of acquiring the methods which pertain to the investigation of his subject. It is of no sort of importance to him that he be familiar with any given detail. He is dealing rather with principles and generalities. He might be ranked as a very fair classical scholar and yet be totally unable to read at sight a given selection from a well-known classical author. It is all-important to the student of political economy that he know the method of that science, but it is by no means essential that he be familiar with any given set of statistics. These are in his books, to which he always has time to refer for the desired information.

PRACTICAL DEMANDS OF THE PROFESSION.

With the medical student the situation is vastly different. Not only must he thoroughly comprehend the methods of medicine, and be able to understand and apply the great fundamental principles, but in addition he must master the minutest detail of practice. It is by no means sufficient, to put the matter more concretely, that he have only a general knowledge of asepsis, but he must be able to put into instant practice all the minutiæ of rendering a room, a patient, an instrument aseptic. He may understand very well the general principles of the action of digitalis on the heart, or of iron on the blood composition, and yet practically be a complete failure unless he have at his fingers' ends the precise dose, mode of administration, and clinical effects of both. The medical student, therefore, must learn methods, *plus* the details of putting these mehods into practice.

The physician differs again from most of his brethren in other professions, in that his knowledge must be so coördinated and correlated as to be available for instant use, without reference to any authority. Now, the application of these facts to the question at issue is tolerably plain. The thoughtful teacher recognizes that the principles of the art and science of medicine must come first. They are the *sine qua non* for the successful understanding of any given medical topic. The surgeon very properly takes up, first, the problems of general surgical pathology. These once mastered, he may proceed to the details of practice. The professor of practice or of materia medica treats of the general action of drugs, and, when these are thoroughly understood, proceeds to the application of the knowledge acquired, by discussing their use in a given case. When one reflects on the enormously overcrowded medical curriculum of today, when every teacher on the faculty is clamoring for more hours for his especial subject, it is easy to understand that some things must suffer, and therapeutics is too frequently the one affected.

How is it with the clinical side of instruction? The professor of practice presents a given medical case, discussing in full its etiology, pathology and diagnosis. And then how about the treatment? In the main this is dismissed with a short reference to the general principles involved. Let us assume the case has been one of influenza. The student may be told that in addition to the ordinary precautions to be taken in any infection, the treatment should be supporting, with cautious use of the antipyretics, and stimulation when necessary. The trained clinician knows precisely what such general directions mean, the student has a very hazy and im-

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society

perfect understanding of them. In consequence, when he receives his diploma he has a fairly large amount of theoretical, and some practical knowledge of pathology and diagnosis, with a very hazy and indistinct idea as to just precisely how he will treat a given case. This is not said in any sense of criticism of our clinical teachers. On the contrary I firmly believe that the very men whom we respect most for their ability, the men who are admittedly our most skilful diagnosticians and consultants are probably most at fault. The very profundity of their knowledge in regard to the pathology and diagnosis of disease, coupled with the fact that most of our recent advance in knowledge has been along the line of diagnosis rather than treatment, makes them reduce the time they devote to the medicinal therapy to a minimum.

THE NOSTRUM MAN'S OPPORTUNITY.

Time and again our most brilliant teachers will finish a clinic on chlorosis with the statement that the patient has been getting iron, and has been improving under its use. In one sense the details of its administration are unimportant, but it is exactly such teaching as this which leaves the student's mind in a receptive condition for the literature on the thousand and one iron nostrums which will pour in on him from the day he hangs out his shingle. The nostrum man thoroughly appreciates this fact. He takes particular pains to send with the very attractive looking samples precise information as to dose, administration, etc. Our young physician knows that iron is indicated. Why then should he not give preference to a preparation which, as the circular of information very distinctly tells him, will produce results far beyond anything contained in the pharmacopeia?

If in that clinic on chlorosis the teacher had spent ten minutes telling the essential facts in regard to the iron preparations; and, further, that many of the newer iron preparations are intrinsically worthless, the value of that clinic from a practical standpoint would have been doubled. If the student were told plainly, and without any equivocation, that the claims of many nostrums are absurdly extravagant, and that it is not in the least difficult to find for every nostrum so vaunted a better and simpler preparation from the pharmacopeia, he would hesitate before putting his signature to a prescription for any such preparation. He should be taught to estimate at their true value the opinions of physicians whose principal claim to fame rests on the fact that their name is continually seen signed to a report on the efficacy of somebody's cure-all. Indeed, even at the risk of having the student's opinion of the medical profession slightly lowered, it might be well to tell him in plain Anglo-Saxon terms that more than one person has written laudatory reports of somebody's preparation for no other consideration than that he was well paid for it.

It may be objected that the medical teacher's influence reaches only to the men in their first few years of practice. It may be said, "Oh, it is of no consequence what the very young practitioner does, for in the first year or two of his professional career he has little or no practice, and by the time he has acquired a practice he will have learned better." The reverse of this is apt to be the case. "As the twig is bent, the tree is inclined"—and the man who has acquired the habit of prescribing nostrums is likely to continue it.

NOSTRUMS PRESCRIBED BY PRACTITIONERS.

It seems to me that the very best possible way to ascertain just how extensively nostrums are being prescribed by the profession at large, is to go over the files of any reputable pharmacist and see what proportions of prescriptions call for such nostrums. In order to avoid any possibility of personalities I have requested a friendly pharmacist to go over some hundreds of recent, consecutive prescriptions, with the result that just 20 per cent. of these prescriptions call for some of these objectionable nostrums. I do not for a moment lose sight of the fact that a considerable number of proprietary preparations may be found by our Council on Pharmacy and Chemistry to have sufficient value to entitle them to consideration. But the nostrums to which I refer are such as are wholly objectionable because of their mode of advertisement, or because of the absurdly extravagant claims made for them. From this it will be perfectly apparent that the nostrum evil is one which has touched to a greater or less extent, not only the young and inexperienced practitioner, but also men of years of experience and reputation, in some cases the very elect. It would serve no useful purpose to give a list of the nostrums which I found as constituting 20 per cent. of the prescriptions just referred to. Nor is it part of my task to comment on these individually as this has been relegated to the Council on Pharmacy and Chemistry, which has much better sources of information, and therefore better judgment, than anyone working singly could possibly have.

THE CURRICULUM AT FAULT.

Another standpoint from which the medical teacher may be regarded as in a measure responsible for existing conditions, is to be found in the very anomalous position occupied by the subject of medicinal therapeutics in a large number of our medical schools in bygone years, and which, to the best of my knowledge, still obtains to a considerable degree. I refer to the very loose connection which has existed between medicinal therapeutics and the practice of medicine. Materia medica and drug therapeutics have been hitherto regarded as essentially elementary branches, and as such, usually relegated to the freshman and sophomore years in the curriculum, while the study of the practice of medicine is deferred to the junior and senior years.

Granting that materia medica, so-called, may be regarded as a distinctly elementary subject, the same thing can not be said of therapeutics. It seems utter folly to tell a sophomore student, for example, that the nitrites are useful in angina pectoris, when that same student has not had a single lecture on the practice of medicine, and has not the remotest idea what angina pectoris is, how it is produced, or in what way the nitrites might prove serviceable. Or, again, how absurd to tell another sophomore that digitalis is a most valuable drug in many heart lesions in the stage of decompensation, when he has no conception whatever as to what decompensation means. These are not theoretical points, but practical difficulties encountered in teaching that subject. In order to have our curriculum pedagogically logical, the teaching of therapeutics must go hand in hand with the teaching of internal medicine. All of us will admit, I think, that our students on graduation are more deficient in therapeutics than in anything else. The reason seems to me to be self-evident, and to lie in the fact, already stated, that the instruction in therapeutics and practice is separated by an interval of a year or more instead of being given simultaneously.

CONCLUSION AND SUMMARY.

I am well aware that it is much easier to point out defects than to suggest the remedy, but it seems to me that a considerable portion, if not all of the instruction in therapeutics proper, should be under the auspices of

the chair of practice, and closely correlated with it. This would certainly be of much greater advantage to the student than the crowding of a host of minor specialties into the senior year of the curriculum, a practice now so generally in vogue in our schools. He would come to the day of graduation with his knowledge of therapeutics and practice both equally fresh in his mind, and with a feeling of sturdy independence in regard to the claptrap literature dispensed by the nostrum vendor.

To sum up the situation, the medical teacher can not escape the reproach of having contributed in one way or another his share to the creation of the existing deplorable state of affairs. This responsibility is, I believe, of a purely negative character.

1. The subject of medicinal therapeutics in general has been subordinated in an undue degree to pathology and diagnosis.

2. In his teachings of therapeutics clinically the medical teacher has contented himself too often with vague general statements instead of recognizing that the subject is essentially one of detail, and entering on its discussion in the most minute way.

3. The teacher has presented the subject of therapeutics at the psychologically wrong moment instead of in direct connection with the subject of practice.

4. The teacher of materia medica has often failed to do his complete duty in not acquainting the student with the situation in regard to nostrums as it actually exists, and by thus sounding a note of warning, sending him out forewarned and forearmed.

WHY THE WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY IS NECESSARY.*

J. H. LONG.
Professor of Chemistry, Northwestern University Medical School.
CHICAGO.

When it has been made plain that the public or some section of the public has been systematically outraged for years the question arises, What are you going to do about it?

There was a time when most of the medicines used by physicians were prepared by themselves or by methods with which they were familiar, just as there was a time when every family prepared most of the food which it consumed. But those days are past, and trusting others to manufacture our foods and our medicines has led to gross abuses in which the general public, the physician and the patient all suffer. The food problem and the medicine problem have much in common, and a study of what has been done in the one case suggests what may be done in the other.

Just here it must be remarked that the trouble is not because of lack of supply of good food or good medicine. The reverse is true. In the world to-day there is more good sugar, good meat, good flour and good vegetables than ever before. Agriculture has advanced. So there is more good quinin, good calomel, good opium or good chloroform in the world than ever before; manufacturing pharmaceutical chemistry has also advanced. This is not the difficulty, but it is right here: We are being ridiculed, mystified and sometimes even bribed into believing that the thousand and one new things are so much better than the dozen or fifty old things with which we have been long familiar and the virtues and faults of which we know. The root of the whole evil may be referred back to the advertising mania which has taken possession of this country. It seems to be a practical truth that any article, no matter how bad it is, may be sold by sufficient advertising. With great gain to the people as a whole, 95 per cent. of all advertising might be dispensed with.

"CONCENTRATED" FOODS.

Indirectly the growth of the science of chemistry is responsible for the acceptance of some false notions. In the early days of physiologic chemistry people were taught to believe in the possibility of certain extracts or concentrated forms of food, and before scientific men could clear up the matter the general public caught the idea and has held it more or less tenaciously ever since. Hence the possibility of convincing a man by blatant bill-boarding or some other objectionable form of advertising that a pound of a cheap mixture of glucose and toasted bread contains more nourishment than ten pounds of meat. Hence the possibility of persuading a man to think that a concentrated, so-called predigested or otherwise doped-up breakfast food is better than honest oatmeal or bread and butter. Parallel to this blind faith in highly advertised and often very inferior foods is the common faith among physicians in the virtues of the so-called synthetic remedies, especially if they are made in Germany. In too many cases there is little justification for this faith.

But these evils, bad as they are, are being cured, and in spite of the Illinois Food Commission. The able men connected with the Department of Agriculture at Washington and with some of the food commissions outside of Illinois are gradually educating the public. Some day we shall have a national pure food law, and such frauds and misrepresentations as are now frequently heard of will become rare.

THE ADVERTISING OF NOSTRUMS.

But how is it with drugs and medicines? I spoke a moment ago of advertising, and it so happens that the overzeal of the advertiser has suggested the way to begin the correction of the whole matter. The manufacture of standard drugs is a legitimate and long established business which requires no special advertising. Good goods sell themselves with very little booming. They are like wheat. But fake medicines, like fake foods, must be advertised, and widely advertised, to sell. If the publicity can be checked the frauds must fail. The medicine manufacturer naturally looks to the medical journals as his advertising medium. If in the minds of the publishers of such journals the right sentiment against fraud can be created the battle for honesty and decency here is practically won.

But in striving to shut out the advertising of fake medicines there is always some little danger of excluding also a really meritorious article, and occasionally something of the sort appears. The physician can not now be expected to discriminate between the good and the bad which is offered him; that would require far too much special knowledge. The nature of food stuffs and the limitations in the manufacture of foods are pretty well known, and false claims are very easily disproved. But it is not so with most drugs. Some of the newer things are powerful and excellent remedies. With the advance of organic chemistry greater possibilities are developed, and we must admit that we do not know the limitations here at all. Hence when the manufacturer or his agent offers a description of his new ware for advertisement the publisher is not, off hand, justified in rejecting it unless the claim made is on its face inconsistent and absurd. There should be some way of proving the truth or falsity of the claim before accepting

* Read in a symposium on Proprietary Medicines and Nostrums before the Chicago Medical Society.

or rejecting an advertisement, and such considerations were among the first to suggest the value and importance of work like that undertaken by the Council on Pharmacy and Chemistry.

It may be said that the publisher is not responsible for the truth of what goes into his advertising columns. That depends on what he publishes. The daily papers may advertise real estate, or $10 hats marked down to 39 cents, and the buyer can see for himself. But with the advertising of drugs and medicine the case is wholly different and the responsibility great. This responsibility is very great if the advertising medium happens to be a medical journal, for from such a publication we have the right to expect consistency if nothing more. Until recently few publishers of medical journals gave much thought, apparently, to what went into their advertising columns, since most of these journals carried, and some continue to carry, advertisements of medicines as preposterous as Lydia Pinkham's, Peruna, and Wine of Cardui. This shameful fact points to a peculiar conception of "ethics" in medical journalism and makes us wonder where, in the code of the medical editor, lies the distinction between an honorable profession and a conscienceless trade.

WORK OF THE COUNCIL ON PHARMACY AND CHEMISTRY.

Two or three years ago the editor and others connected with THE JOURNAL of the American Medical Association began to talk of systematically controlling the character of the matter in the advertising pages. A number of pharmacists and chemists were consulted as to ways and means. Finally the various suggestions took tangible shape and about a year ago the Council on Pharmacy and Chemistry was organized. This council consists of three committees—one on pharmacy, one on pharmacology and one on chemistry. The men constituting the council are active in different lines of scientific work related to medicine, and with this division of labor it is possible to scrutinize an article from several standpoints. Very often samples of the articles to be advertised have been sent to all members of the council for study. Already some good results have been reached and a number of frauds have been publicly exposed. I recall, for illustration, the acetanilid mixtures, but these are not all. They were merely the beginning of a series, and as the work of the council progresses it will do for medicines what those connected with some of the state food commissions are doing for what we eat. Surely the medical man should know the exact nature of what he is asked to prescribe, and the work of the council is to find out and publish as far as possible the true nature of all articles of remedial nature offered to the physician.*

This is a difficult undertaking and haste can be made but slowly. Above all things else, the work of the council must be correct, since great interests are at stake and justice to all must be done. The council does not care to pry into the secrets of the manufacturer's business, but it does insist on knowing the truth about the article manufactured if it is to be used in the treatment of disease. Hundreds of routine analytical and other examinations have been made and a good part of the time of the council has been consumed in investigating and, in some instances, showing up the fraudulent mixtures described as synthetic, which bear about the same relation to real synthetic preparations that a mixture of tacks, paving stones and ostrich plumes would bear to gold watches. Legitimate medicines have nothing to fear, but trash, hiding behind false descriptions, must be brought out into the light.

THE PARASITISM OF THE TUBERCLE BACILLUS AND ITS BEARING ON INFECTION AND IMMUNITY.

THEOBALD SMITH, M.D.
George Fabyan Professor of Comparative Pathology in the Harvard University Medical School.
BOSTON.

(*Concluded from page 1254.*)

To return to our subject of focal immunity. This, as contrasted with a general resistance, is probably the chief stumbling block to successful artificial immunization. To bring about the latter the whole body has to be exposed to the immunizing (and toxic) substances, as there is no other way of reaching certain avenues or portals of entry which are exposed to invasion. We might, for instance, cause the inhalation of an impalpable dust or spray of ground tubercle bacilli to increase the resistance of the lungs in the healthy and the diseased, but then the greatest care would have to be exercised not to give an overdose to an affected lung; otherwise a very severe or even fatal congestion due to the local tuberculin reaction might result.

This problem of local immunity and its relation to a general immunity has occupied my attention for a number of years. Beginning in 1898 I carried out a long series of experiments on guinea-pigs with bacilli killed at 60 degrees and 100 degrees centigrade to see how far a focal or local immunity contributed to a general resistance. These experiments have been frequently interrupted and are still incomplete partly because the equipment needed to protect attendants has not been available. So far only dead bacilli have been employed throughout. The animals used were guinea-pigs. No striking results have been obtained, and hence the work has remained unpublished. The experiments bear, however, on the subject before us and I shall briefly refer to them here.

If we inject a certain amount of a suspension of tubercle bacilli in some different fluid, and killed at 60 degrees centigrade, into the peritoneal cavity of guinea-pigs, no immediate effect is produced. There may be at first slight loss in weight or none at all. After four to eight weeks the guinea-pig, outwardly well, is sensitive to tuberculin. An ordinary dose may kill it or reduce its weight considerably. At this time the peritoneal cavity may or may not show any local proliferation. In the omentum some nodules may be found centrally disintegrated, soft, like pus, but consisting only of the usual fatty débris. The inner wall of the nodule is smooth, there are no signs of a progressive disease anywhere recognizable with naked eye or in sections with the microscope.

If we now inject a second similar dose, the guinea-pig within twenty-four hours begins a prolonged tuberculin reaction associated with fever and rapid loss in weight. If we examine the peritoneal cavity after one or more weeks, we now find considerable hyperplasia of the omentum, more rarely eruptions on the peritoneum of the abdominal wall. The omentum may become very large and adhesions may bind it to various organs, especially to the upper small intestine and lead in some cases to intestinal hemorrhage and rapid loss in weight, even death.[12]

This second severe reaction I regarded as due to the rousing of a local immunity by the first reaction. The

12. Since making these observations I have asked myself whether some of the tubercular eruptions of the peritoneum, cured by operation, may not have been due to dead or nearly dead bacilli discharged from an old focus on a promptly reacting, because partly immunized, membrane.

bacilli first injected into a neutral territory were probably largely carried off into different tissues before any local reaction took place, for I found histologic traces of their presence in the liver, spleen and bronchial glands. The phenomenon is thus similar to the invasion of the lymph nodes in the neutral body. At the same time many bacilli remained in the omental tissue and in the immediate neighborhood of the abdominal cavity. The second injection caused a prompt reaction on the part of the tissues first invaded and the bacilli were largely held there; hence the great proliferation of the omentum.

This increased local reaction following invasion is a general phenomenon, not limited to tuberculosis. When animals of more than the usual resistance are inoculated with septicemic organisms, the local reaction is always more severe and the disease more prolonged than in the most susceptible. If very susceptible animals are first partly immunized, the local reaction following the test inoculation grows more severe, parallel with the immunity, up to a certain point.

The question now arose, How much immunity have other distant tissues gained by this intraperitoneal local vaccination? If more or less general resistance is gained, why not induce with dead bacilli focal foci in the periphery of the body under the skin, for example, where they can be controlled and watched? To test this, the abdominal cavity and the subcutis were used. A long series of guinea-pigs were inoculated, some into the abdomen, some under the skin, some with bacilli killed at 60 degrees centigrade, others with those killed at 100 degrees centigrade. The cultures were all relatively young cultures, both human and bovine, grown on dog's serum. The conditions were made as uniform as possible. In order to estimate the relative reaction caused by the subcutaneous and the intraperitoneal injections the subcutaneous focus and the omentum were examined histologically. In general it may be stated that there was evidence that one injection had some influence on distant parts of the body, but this was distinctly below the influence imparted locally.[13]

IV. SOME SUGGESTIONS CONCERNING THE PRACTICAL APPLICATION OF METHODS TO PRODUCE IMMUNITY.

The experiments made on cattle with human tubercle bacilli by Behring, Pearson, Koch and others have shown that a pronounced resistance to living bovine cultures may be established even in young animals. This procedure is, of course, inapplicable to man. In the immunization of cattle two factors operate very strongly toward the success of the process: First, the intravenous injection of the bacilli which carries them to every part of the body and especially to the lung tissue where we know the bacilli are likely to be held back in large numbers. Here they are most needed to produce a local resistance in the most frequently exposed and diseased organs (lungs and lymph nodes) of the body. It is doubtful that the bacilli multiply at all after injection.[14] In the second place, the postmortem examination of spontaneously and artificially infected cattle has led me to believe that cattle are in a fair state of equilibrium with their bacillus and that there is needed but a relatively slight impulse at the right place to establish a resistance which will promptly suppress the invaders.

The investigations of Nägeli, Necker and others which reveal a very high percentage of latent or arrested infection in the human subject also indicate that the normal human being possesses considerable resistance and that after infection only a slight impulse efficiently applied may suppress the disease at an early stage. This encouraging possibility leads me to believe that there is a great opportunity for some form of preventive inoculation before the disease has fastened itself on the predisposed subject, if such a process could be introduced. This vaccination should be equally applicable before and after infection, and for the purpose of discussion for the time being may be regarded as identical. The general outcome of the investigation with bacilli killed at various temperatures has encouraged me to suggest their use for immunization. The very fact that they are so much more efficacious than the old tuberculin in rousing the antagonism of the body is significant But it may be said the injection of dead bacilli will lead to a local focus, an objection which Koch tried to overcome at the start by extracting the bacilli and so producing the old tuberculin. It may also be asked what advantage can there be over the ground and crushed bacilli which have been subjected to no heat whatever and which are now being used by A. E. Wright and others in the treatment of chronic skin affections. It may even be urged that immunity or increased resistance has been attained in exceptional cases by the repeated injection of the old tuberculin. Macfadyan and C. Sternberg refer each to such a case. A relatively high degree of resistance has been reported by Koch to be attainable with his new tuberculin TR. There can be no doubt that all the preparations emanating from tubercle bacilli or the culture fluids contain substances which induce some resistance. If the reaction of the body is made up of several factors, as I have tried to explain, then the strengthening of any one factor may favor the final resistance produced.

The advantages which, I believe, will flow from the use of bacilli killed at a low temperature are twofold:

1. The creation of a local focus of ever so slight a character, let us say in the subcutis, may lead to the production of immune bodies which, radiating from

13. In connection with these I tried to see if the injection of tubercle bacilli heated to one hundred degrees centigrade would produce any impression on a rapidly fatal infection with living bacilli. Eighteen guinea-pigs were used. In the first half of the experiment some received one injection of boiled bacilli into the abdomen, others the same into the subcutis. After eight weeks they and controls received a surely fatal dose of living bovine bacilli into the abdomen. I knew that none would resist this dose and I simply wished to see what differences might appear. The abdominally immunized pigs lived longest, next came the subcutaneous cases and then the controls. The gain in prolonged life averaged only about seven days for the protected pigs. But the significant features of the experiment were exhibited in the course of the disease. The controls became feverish on the ninth day, yet even sixteen days later than this the vaccinated pigs were still well and active. Soon, however, they became ill and died suddenly. Here the immunity held the disease in check for a time, but when the resistance was finally overcome the process was very rapid. In the second half of the experiment, the guinea-pigs received two preliminary doses of boiled bacilli: one into the abdomen, the other under the skin. The same early checking of the disease was seen, a decided difference between treated and untreated being noticeable. All, however, succumbed, the average survival of the treated was about fifteen days longer than that of the untreated. The contrast would probably have been more striking if I had limited the test to a small number of fatal doses of bovine bacilli rather than to the large dose actually given. Experiments similar to this have probably been made by many others before

14. It is of interest here to note that according to Behring the intravenous injection of these human bacilli into adults may cause a fatal pulmonary edema, which we may explain as a local tuberculin reaction in infected animals. I described a similar condition in rabbits several years ago. After intravenous injection of certain cultures mid-way in virulence between the bovine and the human types, a fatal pulmonary edema and hyperemia may appear after four or five weeks. This is probably a true tuberculin reaction of the lungs due to the extensive destruction of tubercle bacilli and the liberation of poisons. Similar pulmonary accidents in goats were described by Arloing.

the focus, may prove efficacious. These foci may be multiplied by simply changing the point of injection. It may be that the very objection urged by Koch against a local focus, namely, that the immunizing substances remain there, is the very essence of the whole process. At any rate, we have no reason for believing that the crushed or ground bacilli or even the tuberculin TR. is diffused more rapidly after the reaction of the body has been roused. Levene found that even fats repeatedly injected subcutaneously finally led to a local reaction with induration. In looking over the literature recently I was surprised and gratified to learn that Maragliano had recommended some such mode of treatment in his Philadelphia address.[15] Such local foci can be watched and their behavior correlated with the general subjective and objective symptoms.

The second advantage to which I wish to call attention concerns the material to be injected. In the production of immunity the tubercle bacilli to be used should be as recently isolated as possible and grown on blood serum to which pieces of sterile animal tissues may be added if desirable. If the theory I have advanced be true, that the body first acts on some product of secretion in the bacillus which has taken the form of a protective envelope, then the more recently isolated the culture and the more nearly the culture medium approximates the living body the more likely the active production of this envelope. This, of course, should be present in the bacilli to rouse to greater activity the antibody or opsonin after injection. The products in the market are prepared on a large scale from actively multiplying bacilli. A long experience leads me to the inference that there is an inverse relation between virulence and activity of multiplication. I have also pointed out that the slow accustoming of tubercle bacilli to media on which they at first absolutely refuse to multiply suggests the throwing off of some restraint (such as an envelope) either by all bacilli gradually or through the selection of a few which more quickly adapt themselves. The use of such early cultures of tubercle bacilli, grown on appropriate media, carefully killed at 60 degrees centigrade and tested with proper precautions before application, is within the reach of every hospital or sanatorium dealing with tuberculous patients.

My reason for presenting a method which I myself have not tried is because I have no opportunities for such trial, and I am convinced that the delicate methods of immunization can not be successfully tested on any animals, except perhaps monkeys and cattle, and there are obvious objections and difficulties to be met in the use of either species. I believe that this method should at least be given a trial, although its execution will require considerable personal care and the observance of minute details which the medical profession is inclined to throw on the commercial bodies who manufacture biologic products, but from whom such kind of work can hardly be expected. Of especial importance is the test that the heated bacilli are actually dead, for the temperature of 60 C. is the critical temperature, below which tubercle bacilli are probably not destroyed. Experiments still incompleted indicate that bacilli killed in this way possess properties approaching the living organisms.

CONCLUSION.

In conclusion, I wish to allude briefly to the struggle against tuberculosis from the point of view of the bacillus itself, for the slight changes which this parasite undergoes are writ large on the history of mankind. By spying about the enemy's camp we may learn much for our own safety.

The tubercle bacillus is undoubtedly open to modification, and we may safely believe that there are a large number of races or varieties in existence. Even among the small numbers which we are able to study carefully in the laboratory, there are constant differences indicated by biologic and pathogenic tests. These must be the result of natural selection and brought together perhaps by the great immigration movements of the present era.

The thesis which I tried to discuss recently is that the tendency of infectious diseases is toward a balanced parasitism, with a reduced mortality, but not necessarily a reduced morbidity as a result. This is due to the selective adaptation of both host and microbe. For the latter the most important need is the establishment of a definite mode of entry and exit. In the case of the tubercle bacillus the chronic infection of the lungs is the most favorable type of disease for the microbe itself. This selective adaptation will go much farther, I believe, and we shall undoubtedly meet with bacilli of very low invasive power which find a favorable nidus for multiplication in bronchial secretions. There is already some evidence that tubercle bacilli in sputum do not always signify serious consequences.

The only way to determine the relation between pathogenicity and character of the disease would be a study of the bacilli themselves. This would throw such an additional burden on clinical medicine that we can hardly hope for much progress in this direction. These very attenuated forms would become, as it were, the parasites of the sick lungs rather than of the normal ones. They would take the same position which pneumococci, streptococci and staphylococci occupy in the upper air passages.

The influence which a possible immunization of the human race might have on the destiny of the tubercle bacillus is open to debate. In the first place, all immunization is a confession that the parasite has broken through barriers and has come to stay. The only way to suppress an infection is to do so rather than to establish a compromise by simply increasing our resistance. The latter is admirable from every point of view, but it is not by itself going to eliminate tuberculosis. The only way to accomplish this is to prevent the bacillus from attacking a new subject. Immunization, combined with isolation and other preventive measures, would probably place a decided check on the disease, while immunization by itself alone would lead eventually toward the selection of especially virulent races of the tubercle bacillus which, producing a mild disease in the partially immune, would probably cause a very severe disease in the unprotected or unvaccinated. If the method of immunizing cattle now made generally possible by the commercial exploitation of Behring's bovovaccine should become widespread, we would be treated to a most valuable object-lesson of the effects of this process on the protected and unprotected. With the introduction of such a method there is likely to come a slackening of the usual preventive measures and a more indiscriminate dissemination of tubercle bacilli followed eventually by the appearance of more virulent races of bacilli.

In this fragmentary exposition of the parasitism of the tubercle bacillus I have left many phases of the subject untouched, many statements undeveloped and cer-

15. Medical News, lxxxiv, 1904, p. 625.

tain theories quite unprotected. My purpose in presenting them is not so much to produce conviction as to stimulate others either to develop them further or else to rout them and to put something better in their place. They may be regarded as working hypotheses through which I have attempted to correlate existing data, my own studies serving merely as a guide through this Babel of theories.

The best that the laboratory worker can do is to suggest principles or laws which must be intrusted to the clinician, if he will accept them, to be developed and applied to the many variations which actual spontaneous disease manifests. It is also true that the working out of methods in the laboratory and their clinical application are two wholly different problems. Experimental and clinical medicine must work hand in hand, with the closest co-operation, if one does not wish to disappear in pitfalls known only to the other.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XIX.

TONICS (CONTINUED).

Manganese.

Manganese is not absorbed from the alimentary canal after ordinary doses, hence it acts as a hematinic only in so far as it spares iron by uniting with the sulphur which occurs in the intestines in the form of compounds.

Manganese, therefore, would hardly deserve consideration here if it were not for its widespread use, thanks mainly to the skilful and none too scrupulous methods often employed in the exploitation of certain nostrums containing it.

It is not probable that manganese possesses any advantage whatsoever over the numerous official preparations of iron.

The so-called peptonized manganese preparations, generally solutions of peptone to which some salt of manganese has been added, may be obtained from reputable dealers in chemicals, or may be made by any retail pharmacist who has the necessary educational qualifications to conduct even the very simplest chemical experiments.

A mixture containing iron peptonate and manganese, and one that in many respects is superior to the preparation so extensively sold to the laity, in this country, as "Peptomangan Gude," has been included in the new edition of the National Formulary, now in press. Where it is desired to use a simple solution of manganese peptonate, it may be prescribed as follows:

R. Mangani peptonati	3v	20
Syrupi aurantii	3xii	50
Aquæ dest. q. s. ad	℥x	300

M. Sig.: One tablespoonful after each meal.

It should be remembered, however, that dry preparations of peptonates of iron or manganese, do not keep well, and it will usually be found to be preferable to have a reliable pharmacist prepare a solution, similar to the compound solution of peptonate of iron with manganese, of the National Formulary, which is preserved by the addition of a small quantity of alcohol, with sugar and aromatics.

OFFICIAL PREPARATIONS OF MANGANESE.

The official preparations of manganese are limited in number, and, as suggested above, are even more limited in their practical application as tonics or hematinics; they are:

MANGANI DIOXIDUM PRÆCIPITATUM.—U. S.—Precipitated manganese dioxid is a new preparation that has been added to replace the formerly applied crude product. Manganese dioxid, as now official, is directed to be made from manganese sulphate and should contain not less than 80 per cent. of manganese dioxid.

Average dose: 0.25 gm. (4 grains).

MANGANI SULPHAS.—U. S.—This occurs as colorless or pale pink crystals that are soluble in less than one part of water, but insoluble in alcohol.

Average dose: 0.25 gm. (4 grains).

POTASSII PERMANGANAS.—U. S.—This substance has been mentioned in the chapters on disinfectants and antiseptics. In connection with tonics or hematinics it is of interest only as the source of some of the now popular organic preparations of manganese.

Arsenic.

It is not positively known whether arsenic is an essential constituent of the human body or not.

Segale, using penicillium brevicaule, with which infinitesimal quantities of arsenic may be diluted, found it widely distributed in animal tissues, and Bertrand found it in eggs, particularly in the yolk.

Wieser concluded that arsenic is not a constant constituent in animal and human tissues, but that it is accidentally present.

When one considers the distribution of arsenic in plants, in sea water and in many springs, it is apparent that abundant opportunity occurs for its entrance into the body, and, owing to its slow excretion, the organism may rarely be without traces of it.

If minute traces of arsenic are essential to the well-being of the body we may be sure that the ordinary food insures an abundant supply.

Gies found that those members of a litter of rabbits which received arsenic grew faster than the others, while female rabbits under its influence bore larger young. This increased rapidity of growth has been observed by some, but not all, subsequent investigators. In this connection the observation of arsenic in the yolk of egg is at least suggestive.

The toxicology of arsenic is of peculiar interest because of its frequent use with fatal effect and because the appearance of the earliest symptoms are used as a guide in the therapeutic use of the substance.

The most striking effect of acute arsenical poisoning is seen in the symptoms closely resembling those of Asiatic cholera, and which are explainable by the characteristic action on the capillaries, particularly those of the abdominal region.

The capillaries appear to suffer a peculiar paralysis and dilation, resulting in an enormous increase in permeability. The escaping plasma of the blood makes its way into the intestine and, congulating, gives rise to the "rice-water" stools. The withdrawal of the blood from the rest of the body into this region and its loss, as mentioned, causes the usual symptoms of collapse.

The direct effects on the heart are too slight in such cases to be considered as important, and the corrosive action of arsenic is too slowly developed to be concerned in the immediate effects just described, which rapidly follow the absorption of a poisonous dose. When the poisoning is more slowly developed, however, as after frequently repeated smaller doses, catarrh of the gastrointestinal tract is seen and fatty degeneration of various organs takes place, the picture somewhat resembling that seen after phosphorus poisoning.

Even therapeutic doses frequently repeated give rise to effusion of liquid, commonly noticeable in the swollen eyelids.

Arsenic is said to be capable of increasing the number of erythrocytes in anemia through its action on the bone marrow, but Engel found no increase in the mature red blood cells in anemia; other observers failed to see any change in the red blood cells or in the hemoglobin, though it is acknowledged that the bone marrow is stimulated to unusual activity.

It has been claimed that arsenic actually diminishes the number of red blood cells in chlorosis without altering the total amount of hemoglobin.

It has been suggested that the influence of arsenic on metabolism is due to alternate reduction and oxidation, arsenous and arsenic acids being repeatedly formed, but this seems hardly probable.

OFFICIAL PREPARATIONS OF ARSENIC.

Arseni Trioxidum.—U. S.—Arsenic trioxid was formerly official as Acidum Arsenosum. It consists of not less than 99.8 per cent. of pure arsenic trioxid. It may occur in transparent masses, like glass or in opaque masses resembling porcelain; more frequently, however, it is found as an odorless and tasteless white powder that is slowly but completely soluble in 100 parts of water but very sparingly soluble in alcohol. The presence of either alkalies or halogen acids facilitates the solution of arsenic trioxid, and this fact is taken advantage of in the preparation of the several official solutions. White arsenic, as it is still called, was not known in Europe until some time after the eleventh century. It was scarcely well defined until 1733, when Brandt accurately determined its nature and leading chemical properties.

Average dose: 0.002 gm. (2 mg. 1/30 grain).

Arseni Iodidum.—U. S.—Arsenous iodid occurs as an orange red, inodorous crystalline powder. It is soluble with partial decomposition, in about 12 parts of water and in about 28 parts of alcohol.

Average dose: 0.005 gm. (5 mg. 1/10 grain).

Sodii Arsenas.—U. S.—This occurs as colorless, transparent, odorless prisms that are soluble in less than two parts of water, but very sparingly soluble in alcohol.

Average dose: 0.005 gm. (5 mg. 1/10 grain).

Sodii Arsenas Exsiccatus.—U. S.—This should contain not less than 98 per cent. of pure anhydrous Di-sodium-orthoarsenate. It occurs as an amorphous white powder, permanent in dry air; it is soluble in about three parts of water and is practically double the strength of the hydrous or crystalline preparation mentioned above.

Average dose: 0.003 gm. (3 mg. 1/20 grain).

SOLUTIONS OF ARSENIC.

While several of the preparations of arsenic appear to have been known and used, from time immemorial, as topical applications, the internal use of arsenic, in Europe, appears to date from the introduction of the solution of potassium arsenite, popularly known as Fowler's solution, about 1786. During the following decades a number of modifications of this solution of arsenic were suggested, by medical practitioners and apothecaries, all of which had, or were supposed to have, some distinctive properties. Of these almost innumerable solutions that have been proposed during the past century, the following are now official:

Liquor Potassii Arsenitis.—U. S.—The solution of potassium arsenite, universally known as Fowler's solution, as noted above, was the first of the several solutions to be used and is even now the most popular, being known in every civilized country in the world.

Solution of potassium arsenite contains the equivalent of 1 per cent. of arsenic trioxid, with a sufficient amount of the compound tincture of lavender to give the preparation a distinctive color and flavor.

Average dose: 0.2 c.c. (3 minims).

Liquor Acidi Arsenosi.—U. S.—This solution of arsenous acid contains the equivalent of 1 per cent. of arsenic trioxid, with 5 per cent. of diluted hydrochloric acid. This preparation was introduced, about the end of the eighteenth century, by Dr. DeValanquin, a native of Switzerland, who was practicing medicine in London; it was the first of the several acid preparations of arsenic.

Average dose: 0.2 c.c. (3 minims).

Liquor Arseni et Hydrargyri Iodidi.—U. S.—This preparation, more popularly known as Donovan's solution, contains 1 per cent. each of arsenous iodid and mercuric iodid.

Average dose: 0.1 c.c. (1½ minims).

Liquor Sodii Arsenatis.—U. S.—This solution of sodium arsenate, also known as Pearson's solution, contains 1 per cent. of exsiccated sodium arsenate.

Average dose: 0.2 c.c. (3 minims).

THERAPEUTICS OF ARSENIC.

While the probability of favorably influencing nutrition under certain conditions, by means of the action of arsenic on the capillaries can not be doubted, its therapeutic use for such purposes is empirical. The use of arsenic as a local caustic has a rational basis, but that will not be discussed here.

Arsenic has long been used in the treatment of a great variety of complaints in which anemia is a prominent symptom. Among these conditions is remittent fever, in which it is given in connection with quinin. It is preferable to give the two separately, arsenic being used in the form of the solution of potassium arsenite, which has a wide range of pharmaceutic incompatibility, being virtually an alkaline solution. This solution may be given in large doses—ten drops—gradually reduced, or in small doses rapidly increased until intestinal symptoms or swelling of the eyelids is seen, after which the drug is to be discontinued for a time, and then given in doses of from three to five drops three times a day. It is of importance that the dosage be watched so that no serious disturbance of digestion may occur. The frequently made suggestion to combine preparations of opium with the preparation of arsenic, so as to establish a tolerance for the latter, is one that is of doubtful utility in view of the fact that opium would be likely to mask the symptoms that occur as forerunners of more serious disturbances.

In chlorosis, arsenic seems to be useful in connection with iron. The combination most frequently prescribed is a pill of ferrous carbonate with arsenic trioxid. For this purpose the latter may be combined with the official pill of ferrous carbonate or with the mass of ferrous carbonate, as follows:

℞. Massæ ferri carbonatis .....3i 4|
Arseni trioxidi .....gr. i |05
M. et div in pil No. xl.
Sig.: One pill three or four times a day.

Pernicious anemia may show some temporary improvement under arsenical treatment, but the effect is not permanent.

It has been said that lymphosarcoma has shown improvement under its use, and the following conditions are enumerated among those in which it has been employed: Dyspepsia, diseases of the skin dependent on nutritional derangements, cachectic conditions resulting from diabetes, tuberculosis and a number of other more or less well-defined diseases.

The use of arsenic among veterinary surgeons for improving the appearance of horses by increasing the glossiness of the hair and adding to the fat under the skin is well known.

Phosphorus.

Phosphorus, in both inorganic and organic combination, is widely distributed in the body. Lecithin, a compound of cholin with phosphoric and fatty acids, occurs in nearly all living animal and vegetable tissues, while the nucleins, which are also rich in phosphorus, are likewise widely distributed.

While some observers have found that when lecithin or nuclein was added to the food of animals the latter grew faster than the controls which were not given these compounds, these results are not universally accepted as proving their value, and we have the classic research of Miescher, which proves that the animal organism is abundantly able to form those compounds from others normally existing in the body.

Miescher found that the mass of eggs in the salmon increased from 0.4 per cent. to from 19 to 27 per cent. of the total body weight during some months when the salmon took no food, while the muscles showed a corresponding loss in weight. Much more nuclein and lecithin are found in the eggs than previously existed in the muscle, which, however, are rich in other phosphoric-acid compounds, probably potassium salts which are loosely bound to the proteid.

Miescher concludes, and the evidence seems incontrovertible, that the newly formed combinations characteristic of the egg (including lecithin and nuclein) are formed by chemic action from the albumin, fat and phosphates of the muscle.

It will be readily seen how the makers of nostrums can use such results as those quoted in regard to the action of lecithin in causing an increase in the body weight, while the much more important and generally accepted results of Miescher are ignored.

Phosphorus and its preparations might be omitted without

serious detriment to these articles but for the fact that they have been so widely used and therefore require at least a passing notice, particularly as the toxicology of phosphorus is of considerable interest.

The heart suffers greater direct injury in phosphorus poisoning than does any other organ, while the accumulation of fat which it causes in the liver is apparently an infiltration, resulting from a peculiar disturbance of metabolism rather than the result of any change in the organ itself.

Hemorrhages may occur from degeneration of the capillary walls, while a similar effect on the mucous membranes of the stomach and intestine causes pain, vomiting and diarrhea.

Minute doses of phosphorus, long continued, induce a peculiar change in the growth of bones in the young, leading to the deposition of dense bone where cancellous is being formed, or the change of the latter, when already formed, into the compact form.

The phosphates are of the very greatest importance in the plant and animal bodies, but they occur so abundantly in the soil and in ordinary food that there is seldom any deficiency in the supply, and any want of them in the human body must be due to the inability to use that which is offered. Schmiedeberg calls attention to the formation of the egg shell as evidence of the great capacity of the animal organism to supply a special demand.

Sollmann states that there is absolutely no scientific foundation for the popular belief that the hypophosphites improve nutrition in anemia and beginning phthisis, while Cushny states that most reliable investigators deny that they have any other influence on nutrition and digestion than that of the better known and cheaper salts of lime, soda or iron and Schmiedeberg appears to think them entirely unworthy of notice.

Many clinicians, on the other hand, appear to have observed a distinct improvement in the appetite and digestion under the influence of the hypophosphites, but even if such is the case, there seems to be absolutely no reason or excuse for our employing such a high-priced, unsightly and unscientific preparation as the muddy-looking Fellow's syrup, since any competent pharmacist can make a more presentable and more satisfactory preparation at a very much smaller cost. In fact, if the hypophosphites do possess any distinct medicinal properties, the official preparations afford an ample choice for any condition or need.

OFFICIAL PREPARATIONS OF PHOSPHORUS.

PHOSPHORUS.—U. S.—A translucent, nearly colorless solid, having at ordinary temperatures about the consistency of beeswax.

Phosphorus is nearly insoluble in water, but is soluble in 350 parts of alcohol and in 50 parts of a fatty oil.

Average dose: 0.0005 gm. (0.5 mg. 1/128 grain).

PILULÆ PHOSPHORI.—U. S.—Each pill contains 0.0006 gm. (0.6 mg. 1/100 grain).

Average dose: 1 pill.

ACIDUM PHOSPHORICUM.—U. S.—This contains 85 per cent. of absolute orthophosphoric acid. It is usually prescribed as:

ACIDUM PHOSPHORIC DILUTUM.—U. S.—This contains 10 per cent. of absolute orthophosphoric acid.

Average dose: 2 c.c. (30 minims).

Phosphoric acid has many of the properties of other (inorganic) acids, and probably has no evident advantage over them as a tonic.

The official salts of phosphoric acid usually partake of the properties of the base rather than the acid, and need not be mentioned in this connection.

ACIDUM HYPOPHOSPHOROSUM.—U. S.—This contains 30 per cent. of absolute hypophosphorous acid and is chiefly used in preparing:

ACIDUM HYPOPHOSPHOROSUM DILUTUM.—U. S.—This contains 10 per cent. of absolute hypophosphorous acid.

Average dose: 0.5 c.c. (8 minims).

The official salts of hypophosphorous acid are:

CALCII HYPOPHOSPHIS.—U. S.

POTASSII HYPOPHOSPHIS.—U. S.

SODII HYPOPHOSPHIS.—U. S.

Average dose of any one of the above: 0.50 gm. (7½ grains).

Potassium hypophosphite is soluble in about 0.5 part of water and in 25 parts of alcohol, and calcium hypophosphite is soluble in about 7 parts of water, but is almost insoluble in alcohol.

In addition to the alkali hypophosphites, we also have official:

FERRI HYPOPHOSPHIS.—U. S.—and:

MANGANI HYPOPHOSPHIS.—U. S.

Average dose of either: 0.20 gm. (3 grains).

The ferric hypophosphite is soluble in 2,300 parts of water, but is much more readily soluble in solutions of hypophosphorous acid or of the alkali citrates. Manganese hypophosphite is soluble in about 7 parts of water.

SYRUPUS HYPOPHOSPHITUM.—U. S.—Syrup of hypophosphites contains in 100 c.c. 4.5 gm. of calcium hypophosphite and 1.5 gm. each of sodium and of potassium hypophosphites.

Average dose: 8 c.c. (2 fluidrachms).

SYRUPUS HYPOPHOSPHITUM COMPOSITUS.—U. S.—Compound syrup of hypophosphites contains, in each average dose (8 c.c. = 2 fluidrams) about 0.25 gm. (4 grains) of calcium hypophosphite, 0.12 gm. (2 grains) each of potassium hypophosphite and of sodium hypophosphite, 0.015 gm. (¼ grain) each of ferric hypophosphite and of manganese hypophosphite 0.008 gm. (⅛ grain) of quinin, 0.0008 gm. (1/80 grain) of strychnin with sodium citrate, hypophosphorous acid and syrup.

Average dose: 8 c.c. (2 fluidrams).

SYRUPUS CALCII LACTOPHOSPHATIS.—U. S.—This syrup contains in 100 c.c. about 3 gm. of calcium lactophosphate with free lactic and phosphoric acids.

Average dose: 8 c.c. (2 fluidrams).

The several salts of glycerophosphoric acid which are being advertised so extensively at the present time, as the active constituents of a number of nostrums, are as yet not official. It is quite probable, however, that longer experience will demonstrate that they have absolutely no advantages over the hypophosphites or the lactophosphates, and that their widespread use at present is but a passing fad.

THERAPEUTICS OF PHOSPHORUS AND ITS SALTS.

There is at least a rational basis for the use of phosphorus in rickets, osteomalacia and fracture of bones in which union fails to occur, since a deposition of lime salts in bone has been shown to result from its use.

It must not be given in doses large enough to cause serious gastrointestinal disturbance.

When we say that phosphorus or the hypophosphites are used empirically in the following conditions it is not to be understood that we recommend them, but merely that they may possibly be worthy of a trial. Thus some clinicians have used phosphorus in a variety of nervous disorders, and the hypophosphites are very often used as general tonics. The treatment of tuberculosis by the hypophosphites has no place in modern therapeutics.

Pure phosphorus is so slightly soluble that it was often dissolved in oil, but the phosphorated oil is no longer official. The pills of phosphorus, each containing 0.6 milligrams (1/100 grain) afford a very convenient form for administration.

The compound syrup of the hypophosphites, with its eleven ingredients, including water, affords an example of the concessions made, by the revision committee of the Pharmacopeia, to popular prejudice, and in time to come it will no doubt be relegated to its proper resting place with other polypharmaceal preparations of the centuries long passed.

The claim has been made that the hypophosphites are effective only when the chemically pure salts are used; this claim, however, seems scarcely credible in view of the fact that our ordinary food contains much greater quantities of just such salts as are said to render the hypophosphites useless.

From one to two teaspoonfuls of the compound syrup of the hypophosphites may be given before meals, as a stimulant to the appetite and digestion. Acids and acid fruits are to be avoided.

The following may be taken as a type formula for an extemporaneous preparation of the hypophosphites:

℞. Calcii hypophosphis		
Sodii hypophosphis		
Potassii hypophosphis, āā	℥i	4
Acidi hypophosphor	℥i	4
Aquæ dest	℥vi	200
Elixir q. s. ad	℥vi	200

M. et filtra. Sig.: One or two teaspoonsful three times a day, before eating.

The elixir in this prescription may be replaced by glycerin, or an aromatic water, the combination of the hypophosphites may be varied, within reasonable limits, and the hypophosphorous acid substituted by citric acid or by an alkali citrate. When desirable sufficient bitter may be added to make the medicine more palatable or to act as a bitter tonic. For this purpose the tincture of nux vomica, or one of the bitter alkaloids, may be added.

Cod-Liver Oil.

The consideration of cod-liver oil rightly belongs under the subject of dietetics, as nearly all pharmaceologists are agreed that it is merely a food, but it is so frequently lauded as a medicine that some mention of it is necessary in this place.

On the discovery of traces of certain alkaloids or ptomains it was suggested that they possessed extraordinary value, but, as these substances are usually present in infinitesimally small quantities in good oil, and as there is no reason to suppose that they possess any beneficial effect whatsoever, it cannot be said that the so-called fat free or tasteless cod-liver oils can, in any sense of the word, represent cod-liver oil.

The crude dark-colored oil often contains a much larger proportion of free fatty acids than the white does, and it should, therefore, be more readily emulsified in the intestine and absorbed, but its disagreeable odor and taste render it peculiarly disgusting to all patients with delicate stomachs. Small doses of cod-liver oil can usually be borne, especially if it be given in the form of an emulsion, but even this is not always tolerated.

OFFICIAL PREPARATIONS OF COD LIVER OIL.

Oleum Morrhuæ.—U. S.—This preparation is official in some of the foreign pharmacopeias as Oleum Jecoris Aselli, a name that may be useful on occasions. Cod-liver oil is a fixed oil obtained from the fresh livers of *Gadus morrhuæ* and of other species of *Gadus*.

Average dose: 15 c.c. (4 fluidrams).

Emulsum Olei Morrhuæ.—U. S.—The emulsion of cod liver contains 50 per cent. of the oil, with mucilage and syrup, and is flavored with oil of gaultheria.

Average dose: 8 c.c. (2 fluidrams).

Emulsum Olei Morrhuæ cum Hypophosphitibus.—U. S. This contains 50 per cent. of cod liver oil, 1 per cent. of calcium hypophosphite, and 0.5 per cent. each of potassium hypophosphite and of sodium hypophosphite. It is flavored with oil of gaultheria.

Average dose: 8 c.c. (2 fluidrams).

Cod-liver oil is often useful in anemias due to faulty nutrition and in the general debility which so often precedes tuberculosis. For this reason, perhaps, it has acquired a particular reputation in the treatment of tuberculosis. It can have no beneficial action on the bacillus of tuberculosis, nor on the course of the disease, except in so far as it is a readily assimilable food.

It is often found to be useful in rickets. The pure oil, the emulsion, or the emulsion with hypophosphites may be used, the dose to be regulated according to the capacity for assimilation of the individual case.

It may be added here that the petroleum oils alone, or in the form of emulsions, are wholly devoid of nutrient properties. They are mineral oils, and, therefore, non-saponifiable and can take no part in animal nutrition.

The Automobile's Advantages to the country physician are so manifest that I look forward, writes a Toronto physician, during the coming season to a very large increase in the motor ranks by members of the profession throughout the province of Ontario.

Clinical Reports

EXTRAGENITAL AND URETHRAL CHANCRE.

REPORT OF FIVE CASES, INCLUDING ONE WITH MULTIPLE LESIONS OF THE BREAST.*

FRANK CROZER KNOWLES, M.D.
PHILADELPHIA.

There is no phenomenon of syphilis more interesting to the general clinician than its inception in the one typical initial lesion. When this lesion has an unusual characteristic, such as prolonged incubation, extragenital location, unaccustomed appearance, particularly if of a multiform variety, our study is of even greater interest.

Before the description of these cases it might be well to give a few general statistics on extragenital and urethral chancre, in so far as they bear on this paper. Montgomery[1] states that 5.5 per cent. of his cases of syphilis were of extragenital origin, or 67 out of a total of 1,217. Bulkley[2] of New York gives the same percentage, 5.5 per cent., or 113 extragenital in 2,000 cases.

Fournier's[3] statistics show that 6.33 per cent. of his total cases of chancre were of extragenital location. While out of 887 cases of primary syphilis occurring among women in his private practice,[4] 45, or 5.07 per cent., of the initial lesions were extragenitally situated.

All authorities agree that the major number of extragenital lesions occur on the cephalic region, chiefly in close proximity to the mouth. According to the statistics collated by Poray Koschitz,[5] 632 out of 852 primary extragenital lesions occurred on the head, or practically 75 per cent., and of 29 cases of the above authority in 9, or 31 per cent., the lesions were on the lips. Montgomery[6] records slightly over 42 per cent. of his extragenital cases as occurring on the lips. According to Bulkley's[2] statistics, a little over 13 per cent. of his extragenital chancres were located on the finger. Multiple lesions may occur on any part of the body, most frequently on the genitaliæ and breast. According to Taylor,[7] in fully one-third of all cases of syphilis occurring in women the lesions are multiple. Fournier[8] states that 39 out of every 100 cases of primary syphilis of the breast show multiple lesions.

According to Dr. Dimey,[9] in 206 cases of initial lesions of the breasts, one breast was affected in 132 cases, while both were involved in 74. In this last reference, which Prince A. Morrow kindly furnished me from his "System of Genito-Urinary Diseases Syphilology and Dermatology," Jullien[10] has tabulated 1,773 cases of primary specific lesions compiled from the statistics of Bassereau, Fournier, Clerc and Léon le Fort. Of these chancres 89 were located at the meatus; while 17, or less than 1 per cent., were in the urethra proper. The few statistics, quoted from nine authorities both in

* Read before the Philadelphia County Medical Society.

1. Montgomery: The Journal of Cutaneous Diseases, August, 1905, p. 346.
2. Bulkley: "Syphilis of the Innocent," p. 36, Alverenza prize essay.
3. Fournier: "Les Chancres Extra-Génitaux," Paris, 1897, p. 5.
4. Fournier: Annales de Dermatol et de Syphilographie, 1887, vol. viii, No. 12, p. 757.
5. Poray Koschitz: Arch. f. Derm. u. Syph., 1890, No. 6, p. 928.
6. Montgomery: The Journal of Cutaneous Diseases, August, 1905, p. 352.
7. Robert Taylor: "Practical Treatise on Genito-Urinary and Venereal Diseases and Syphilis," 3d edition, p. 514.
8. Fournier: "Les Chancres Extra-Genitaux," Paris, 1897, p. 358.
9. Dimey: "Etude Sur le Chaucre Syphilique du Sein." Thèse de Paris, 1891.
10. Jullieu: "Traite Pratique des Maladies Vénériennes" 2d edition, 1886, p. 572.

this and foreign countries, show the comparative frequency of unusually located initial lesions and teaches us to be constantly watchful that no mistake be made.

Of the following cases two were seen in the Dermatologic Clinic of Dr. Chas. N. Davis at the Pennsylvania Hospital, one in the Genitourinary Clinic of Dr. H. M. Christian at the Polyclinic Hospital, one in the Dermatologic Clinic of Dr. M. B. Hartzell at the University of Pennsylvania Hospital, and one in my own practice.

CASE 1.—Walter T., mulatto, age 26, clerk, born in Philadelphia. First seen in Surgical Dispensary of Pennsylvania Hospital on June 20, 1904. At that time he had a quarter-dollar sized, elevated, sharply marginate, fungating, crusted, slightly indurated lesion on posterior surface of right index finger, over phalangeal-metacarpal articulation. This lesion was of six days' duration. No glandular or other specific symptoms were present. The treatment consisted of mild, local, antiseptic applications. The induration of this lesion was more marked on each successive visit. On July 17 the patient returned after an absence of ten days, with a typical roseolar eruption, general glandular enlargement, pharyngitis and pains in body. The patient had been referred to the Cutaneous Clinic, after a few dressings in the surgical dispensary, where the following history was discovered: On April 18 this man engaged in a fight, hitting his opponent in the teeth, causing an abrasion at the site of the present lesion. This abrasion subsequently healed, but on June 14, or eight weeks following this injury, the present lesion appeared. The secondaries appeared precociously in four and a half weeks.

CASE 2.—C. D., an Italian girl, aged 22, married, came to the Cutaneous Clinic at the Pennsylvania Hospital on May 1, 1905, showing the following: Just below left nipple, in areolar formed by glands of Montgomery, were two dime-sized, sharply marginate, raised, markedly indurated, crusted lesions, separated by about one inch of sound skin. On the right breast one other lesion of the same character and location was seen. The duration was fifteen days. The only subjective sign was pain all over the body. No objective sign of syphilis was present. The patient was seen three times during the next ten days with no new developments except an increase in the button-like induration of the lesions and in severity of muscular and osseous pain. After an interval of almost three weeks the patient returned on June 27 with a macular eruption of one week's duration, covering the entire body and face; numerous mucous patches of lips, tongue, soft palate and tonsils were present, also general glandular enlargement and pains in entire body. Unfortunately no history was obtainable in this case. Her only child, a girl of 11 months, was apparently in perfect health, although still breast-fed.

CASE 3.—F. P., male, aged 30, came to my office May 29, 1905, complaining of a urethral discharge of ten days' duration. On examination an irreducible phimosis was found, also a profuse muco-purulent discharge. Of still greater interest, on palpating the penis, a hazelnut sized, firmly indurated, button-like mass was found one and a half inches behind the meatus, on the roof of the urethra and partially surrounding the same, this latter mass being of three weeks' duration. After cleansing the foreskin with potassium permanganate solution, the two glass test was tried, the first glass only showing cloudy urine with shreds. The only subjective sign was bilateral enlargement of inguinal glands. No primary incubation period could be determined, for the man was extremely promiscuous in his intercourse. On June 19 the patient again appeared in my office, after an absence of three weeks, with a profuse, ham colored, multiform eruption, chiefly small, flat, papular in type, general glandular enlargement, husky voice, pharyngitis, slight thinning of hair, and generalized pains in bones and joints. These secondary symptoms appeared ten days before this present visit. No microscopic examination having been made for the diplococcus of Neisser, a superadded gonorrhea can not be positively stated.

CASE 4.—S. M., male, aged 22, came to Genitourinary Clinic at the Polyclinic Hospital on Aug. 15, 1905, with a dime sized, sharply marginate, crusted, slightly raised indurated lesion, slightly to left of median line of lower lip. The duration was ten days. The incubation period was indefinite. There were no other signs of beginning syphilis. On September 12 the patient returned, after an absence of five weeks, with a marked pharyngitis, the post-cervical, submaxillary and inguinal glands were enlarged, and a faint macular eruption of one day's duration was on chest, abdomen and back. The generalized eruption in this case followed a secondary incubation period of just six weeks.

CASE 5.—Charles T., aged 42, blacksmith. This patient first came to the Cutaneous Clinic of the University of Pennsylvania Hospital on Feb. 23, 1906, complaining of a large swelling of the lower lip. On the vermilion of the lower lip just to the left of the median line, a quarter-dollar sized densely indurated, slightly crusted, raised, button-like lesion was found. The post-cervical and submaxillary glands were enlarged and an extragenital chancre was diagnosed. The man stated he had no eruption on the body. As in all cases, not trusting to the patient's own observation, we made the man disrobe. One glance at the patient's body was sufficient to see a generalized macular eruption over arms, legs, trunk, and a few lesions of the same character on the forehead. The throat showed a pharyngitis, with small mucous patches of post-pharyngeal arches. The exact primary or secondary incubation period, or the duration of the initial lesion and secondary eruption could not be determined. The patient stated that the lesion had appeared on the lip three weeks ago; probably twice that length of time would be nearer the truth. The macular eruption could have had a duration of but a few days. This man, being separated from his wife, was in more danger of being exposed to contagion.

Only those cases have been reported in this series in which the diagnosis was proved by the appearance of the secondary eruption and concomitant signs of syphilis.

During this same period three other cases were seen, in each of which the provisional diagnosis of extragenital chancre was made, two of these cases having indurated, single, lesions on the fingers and in one case on the upper lip. Unfortunately, as each of these patients made but the one visit, our provisional diagnosis could not be conclusively proved.

332 South Seventeenth Street.

A CASE OF PRIMARY SYPHILITIC INFECTION IN THE NOSE.*

JAMES T. CAMPBELL, M.D.

Professor of Otology, Rhinology and Laryngology in the Post-graduate Medical School.

CHICAGO.

Chancre of the nose is one of the rarest of lesions. Krefting[1] gives statistics of 2,916 cases of chancres, of which 539 were instances of extragenital infection, and Salsotto[2] records 201 cases of extragenital chancre with no case of primary nasal infection. Bulkley[3] gives a table of 9,058 cases of extragenital chancre in which primary infection of the nose occurred ninety-five times. Bosworth[4] states that in 2,244 cases of chancre observed by Bosserean, Clerq, Lefort, Fornier and Ricord, the primary lesion was found twice in the nose. Le Bart[5] reports thirty-seven cases of primary nasal chancre, of which twenty-one were external and sixteen within the nostril.

The earliest recorded case I can find is that of Mc-

*Read before the Chicago Laryngological and Otological Society.

1. Archiv. f. Derm. u. Syph., 1894, vol. xxvi, p. 167.
2. Sifilomi Extragenitali et Epidermie di Sifilide, Brochure, Turin, 1892.
3. Syphilis in the Innocent.
4. A Treatment on the Nose and Throat, 1889.
5. These de Paris, 1894.

Carthy.[6] Spencer Watson[7] reported a case of a nurse in attendance on a woman who gave birth to a syphilitic child. The sore could not be distinctly seen, on account of the swelling within the nostril. Severe pain, fever and mental depression was followed by the ordinary symptoms of secondary syphilis. The vehicle of infection in all probability, was the patient's own finger.

Intranasal inoculations occur most frequently in the lower and anterior part of the nasal septum, next in frequency on the ala, and then, as in the case I am about to report, on the inferior turbinated body. The location modifies the chancre's appearance. On the septum it displays a flat, reddish or greenish, fungiform mass with indurated circumference. The surrounding mucous membrane is, to a greater or less degree, swollen, and there flows from the ofttimes stenosed nostril, a bloody, fetid discharge. When the ala is involved the infiltration and induration often causes it to be of a cartilaginous consistency. When the inferior turbinated is primarily inoculated, the appearance resembles, mostly, a severe localized influenza, or a fibrinous or diphtheritic rhinitis. Usually the submaxillary, sublingual and preauricular glands early show marked indolent swelling.

Characteristic of this infection is an aggravated general febrile disturbance, malaise and depression of spirits. The chancre may be mistaken for an abscess of, or injury to, the septum; for a furuncle, to which for a time, it is not dissimilar; for vaccine inoculation; for tubercular ulceration; for malignant disease.

The existence of an ulcer in the nose with a peculiar hard base and granular surface, bleeding easily on touch and of limited extent, would suggest tuberculosis, malignant disease or syphilis. Tubercular ulceration occurs only as secondary to a pulmonary deposit and examination of the discharge would show characteristic bacilli. In malignant disease glandular enlargement is a late development, and the progress of the disease is liable to be accompanied by profuse epistaxes. In syphilis the chancre is followed shortly by characteristic secondary symptoms.

CASE REPORT.

History.—On Oct. 19, 1905, a surgeon in perfect health circumcised a patient, on whose prepuce was a large indurated chancre.

On December 16, nearly two months later, he first noticed stuffiness of the right nostril, and headache from brow across vertex to occiput. This was accompanied by malaise, anorexia, chilly sensations and constipation, a condition from which he never before had suffered. For a period of two weeks his temperature ranged from 100 to 100.2 F. He had worked very hard for a few weeks prior to December 16, and he attributed his condition to overwork and a grip-like attack. During Christmas week he visited his old home, but the rest ga not improve his condition.

rec-*amination.*—I first saw him on Dec. 28, 1905. At that beca I made the notation, "Superficial necrosis of the mucous even brane covering the anterior end of the right inferior pre nate body; the fibrinous membrane, when raised, revealed a sp ulcerating bleeding surface." Neither suprarenalin 1 to 1,000 nor 10 per cent. cocain solution caused any appreciable blanching or shrinking of the turbinated body. Lacrimation was present on the right side and one gland below the angle of the right jaw was enlarged and tender.

The condition resembled fibrinous rhinitis, but it was limited to the inferior turbinated body and there was no ichorous discharge from the nostril. The swelling practically occluded the nostril, which is narrow on account of septal deviation, the result of traumatism in childhood.

The treatment employed was a cleansing alkaline spray followed by sprays of peroxid of hydrogen and lime water.

Course of Disease.—On Jan. 8, 1906, eighty days after the probable inoculation, a macular rash appeared on the abdomen. Four days later, when I was shown the rash, I made a positive diagnosis of syphilis and was confirmed in this by Dr. Joseph Zeisler and Dr. T. Melville Hardie. The "leanham" macular and papular rash, more marked on his chest and abdomen, covered practically the whole body with the exception of the exposed portions of head and hands. There were papules at the base of the uvula, but no soreness or congestion of the fauces and no glandular enlargement or soreness excepting the before-mentioned submaxillary gland. Disappearance of the fibrinous membrane and healing of the ulceration took place under the simple sprays, before constitutional symptoms appeared. Coincident with the appearance of the rash, the headache ceased and the general feeling of well-being began.

On diagnosis of syphilis being made, inunctions of mercurial ointment, one dram, at bedtime were begun and after six rubbings all evidence of the disease had disappeared.

A CASE OF MULTIPLE CHANCRES.

S. R. MALLORY KENNEDY, M.D., A.A.S.
Public Health and Marine-Hospital Service.
PENSACOLA, FLA.

Cases of multiple chancres are rare. Chiefly because of their infrequency they are often unrecognized, and so the report of a single case, though adding nothing to the present-day knowledge of the subject, may call attention to the existence of a condition which might otherwise be overlooked. It is for this reason that I report the first case that, to my knowledge, has been treated in this section of the country.

Patient.—J. I. C., aged 22, presented a good family history.

History.—He had never been sick in his life except for an acne which bothered him but little, and for which he had done nothing. He first came under my care in August, 1904, when I treated him for a chronic form of gonorrhea. This, though stubborn, yielded after a time and the patient, after many tests, was discharged as cured. I did not see him again until August, 1905.

Examination.—On making an examination I found a purulent discharge about the urinary meatus, and a single, enlarged, painless, indurated, freely movable gland in the left inguinal region. The discharge, however, did not come from the meatus, but from beneath the prepuce, which was slightly swollen, tending to phimosis. On inserting a small, blunt probe several rough surfaces could be detected, and on questioning the patient I was somewhat surprised to learn that he had not had sexual intercourse for more than a month before noticing the discharge.

Treatment.—Realizing that with the existing phimosis local treatment would amount to little or nothing, I advised an incision through the dorsum of the prepuce to expose the glans and to aid in making topical applications. He consented, and on the following day, with local anesthesia—ethyl chlorid and a 2 per cent. solution of cocain—the incision was made, disclosing nine ulcers. Each lesion presented a typical picture. Their edges were sloping (cup shaped), they had a firm, cartilaginous, or woody feel. Their bases were covered with a thin, scanty, sero-purulent discharge which had no offensive odor. Each lesion was fully developed, separate and distinct. There was no tendency whatever to coalesce.

I was convinced that the picture before me was one of multiple chancres, and, realizing that all nine could be gotten rid of by a circumcision (all being located on the glandular surface of the prepuce), the primary incision was continued under cocain and a circumcision was done. The operation was followed by some little swelling and pain, but no more than would ordinarily occur after the performance of this operation on a perfectly healthy penis, the wound healing by first intention.

Bacteriologic Examination.—Smears from the nine lesions were made and examined for the bacillus of chancroid (bacillus of Ducrey) with negative results. Further tests were made

6. These dé Paris, 1844.
7. *Medical Times and Gazette*, 1881, vol. 1, p. 428.

to isolate the bacillus in culture tubes containing fresh blood, after the method of James Homer Wright of Harvard University, with negative results.

Subsequent History.—The patient was told of my suspicions and was instructed to report at my office for inspection when any of the lesions of the "active period," which were thoroughly explained to him, might put in an appearance. This he promised to do, but was compelled to leave the city and I did not see him again until Jan. 8, 1906, when he came to my office, not because he felt that his health was impaired, for he stated that he had not had an ache nor a pain since I had seen him last, but because he had returned to the city "and wanted me to examine him to satisfy myself that he was all right."

The skin presented nothing suspicious, the acne which he had had for the past five or six years was no better, nor was it any worse. There was no other form of eruption present. I found, however, that the post-occipital glands on both sides were much enlarged, as were also the cervical, axillary and inguinal glands. On examining the throat I found a bald patch in the roof of the mouth and two typical patches on both tonsils. They were oval, gray in color, moist, and looking as though silver nitrate had been applied; the whole faucial surface was engorged.

Not until I told the patient what I had discovered did he admit that his throat had bothered him for a day or two. I told him that in my opinion he had syphilis. Although having been acquainted at the time of performing the circumcision with my suspicions, the fact that he had suffered from no prodromes, or eruption (which he had been looking for) did not help to lessen the shock caused by my positive diagnosis.

Having to go to New Orleans he urged me to accompany him in order that I might give a detailed account of the case to Dr. Rudolph Matas, in whom he has the utmost confidence. This I willingly agreed to do. Dr. Matas listened attentively to the history, made a careful examination, and pronounced the case syphilis beyond a doubt. He was impressed, as I had been, with the mildness of the case, and attributed it to the fact that in performing the circumcision, nine points of infection were removed at once.

I believe, of course, that the chancre is a local manifestation of a constitutional disease, and that when it appears a large amount of the poison has already entered the system. This in no way opposes the duality theory, as I do not contend that the removal of the chancres would prevent chancroid from forming, for I believe, with Fournier, Cooper, von Zeissl, Taylor, Lydston and a host of others, that the poisons are not one and the same; nor do I believe for one instant that the removal of chancres will prevent the appearance of the active period (secondary stage) or the period of sequelæ, but I do contend that in this particular case their immediate and complete removal mitigated the attack.

In his excellent article on syphilis Lydston has this to say in favor of excision:

> The excision of the chancre should be performed only after the induration has matured, that is, after it has attained full development, and remained in *statu quo* for some days, otherwise induration is apt to recur in the edges of the wound. By the excision we remove a constant focus of infection that is present so long as the induration lasts. We at once remove a large mass of syphilized cells that would otherwise only be removed by the slower process of fatty degeneration, absorption and elimination. We obviate the possibility of transmission of the disease to others by means of the initial lesion (a point sometimes of great importance in married persons); we lessen the danger of suppurating bubo in case the chancre should become inflamed or pus-infected; we remove a constant source of irritation and lessen the danger of phagedena and inflammation that might disable the patient.

I return to the narration of the case:

Treatment.—Principally for its rapidity of action and on account of the existing acne, I used the inunction plan of treatment, rubbing into the patient one dram of mercurial ointment in one dram of lanolin every twenty-four hours, followed the next night by a warm bath with German green soap.

Dr. Matas suggested touching the mucus patches with pure carbolic acid, followed with alcohol or with a mixture of carbolic acid and iodin in equal parts. I used the pure carbolic and in eleven days from the time I started to make these applications not a trace of the patches on the tonsils could be seen. The bald patch in the roof of the mouth did not take kindly to this treatment and I changed to lunar caustic, putting the patient on a short, brisk course of potassium iodid, with good results. The iodid, however, made the acne worse, and after a week I stopped it and relied entirely on the inunction and the lunar caustic, with the result that at the present writing there is but one-sixteenth of an inch to heal. As a mouth wash and gargle the patient is using equal parts of an alkaline solution and a solution of peroxid of hydrogen five or six times a day; he also uses a chlorate of potash tooth paste after each meal.

He objected to the use of the curette, the best treatment I know of for acne; so I am using a sulphur ointment, and if the acne ever gets better the patient will wear a mercurialized shirt; the inunctions will be discontinued and the patient put on granules of protoiodid of mercury (each 0.01 gm.).

The plan I follow in giving these granules differs somewhat from the ordinary in that I do not reach the full physiologic action and then cut the dose in half, but, instead, when the patient reaches the limit, he is instructed to reduce the dose one granule a day until he has reached the original starting point, when he commences to increase the dose as before. It is astonishing how nicely this method agrees with the majority of patients. I have one who, following these directions, worked up to thirty-two granules a day before beginning to reduce his dose, and this without disturbing his digestion in the least.

Unless there are contraindications, I generally have my patients follow this plan of treatment for one year, when they are instructed to skip a month, taking a course of potassium iodid in the off month. In this way any mercury that is stored up in the tissues will be liberated, rendered active and eliminated. It is well to bear in mind the possibility of the injurious effects produced by the cumulative action of the drug.[1] I do not give the iodin simply and solely for its alterative effect, but because it is an established fact that the iodids alone are capable of effecting a cure in syphilis. That this view is correct is shown by the beneficial effects produced by potassium iodid in cases of late syphilis in which mercury has never been administered. Hassing[2] reports seventy cases of syphilis in which the patients were cured by potassium iodid alone without mercury at any stage. These experiments have since been frequently repeated by various observers, and by myself, with like results.

At the end of the second year the patient is agai[n] given a course of mercury for six months, during wh[ich] time he again alternates; mercury one month, po[tas]sium iodid the next. Then I let him rest and watch [the] results. If all goes well, and all should go well if [he] has followed out directions, I discharge him, feeling reasonably sure that he can marry and beget healthy children. It goes without saying that the physician can not effect a cure alone; the patient must do his share, and the best advice that can be given to a syphilitic after he has been put in possession of all the facts concerned in his case is this: "To thine own self be true."

1. The text-books are notoriously deficient regarding the physiologic action of this drug and for the benefit of those who are looking for cause and effect and not a mere history of symptoms following large or small doses of mercury, I take pleasure in referring to the recent papers of S. V. Clevenger on the subject.
2. British and Foreign Medical Review, October, 1845.

A CASE OF CESAREAN SECTION IN ECLAMPSIA.

WILLARD SMITH, M.S., M.D.
LA GRANDE, ORE.

In October, 1903, I was called to attend Mrs. J. W., who had typhoid fever and was about four months' pregnant. She aborted in the course of her fever and had considerable difficulty owing to the small size of her pelvis. I lost sight of her after her recovery until September, 1904, when I was called to treat her for hydrorrhea gravidarum, which had been present for about a month. She expected confinement September 10, but as she did not enter into labor at that time I waited until September 23 and then induced labor. My reason for doing this was that there was unmistakable evidence that she had exceeded her full term and the delay seemed to be due to deformity of the pelvis. I measured her pelvis and found the internal conjugate to be only two and one-eighth inches. After long effort to secure delivery without forceps, I applied them and with great difficulty succeeded in delivering her of a six-pound child. The child was delivered alive, but was so crushed and mutilated in the process that it died after six hours. Again I lost sight of the patient until in April, 1905, she came to me and asked me if there was any way by which she could have a baby. She said that she was very anxious to become a mother and was willing to undergo almost anything in order to do so. I told her that there was only one way—Cesarean section—and explained to her what it meant and the danger of it. She asked me if I would do this operation for her if she should become pregnant. I told her that she had better not attempt it, but if I were ever again called on to attend her in labor I certainly would not attempt to deliver her in any other way. About the last of June she again appeared and informed me that she believed herself pregnant, having last menstruated on May 7, and further said that she had become pregnant with the definite intention of having Cesarean section done. I accepted the situation and instructed her to report every ten days, which she did faithfully up to December 8, the date of her last visit to my office. At about two months she had slight albuminuria, which disappeared under treatment. Otherwise she showed no abnormal signs.

Family History.—The patient, aged 21, was the eldest of a family of eleven children. Her mother had also had seven miscarriages. Her father comes of a rachitic family and shows many signs of rickets and has had a chronic leg ulcer since he was 9 years of age. One of her mother's sisters has lost seven children at birth owing to a contracted pelvis.

History of this Pregnancy.—On December 14 the patient began to act queerly, and she afterward stated that she had no recollection of any of the events succeeding that date. She became progressively duller and more apathetic until the evening of December 17, when she began having labor pains prematurely. The pains became more frequent and were interspersed with convulsions of increasing frequency and severity until 2 a. m. on December 18, when I was called to see her.

Treatment.—On examining her I found a considerable degree of dilatation. I gave her morphin sulphate ⅜ gr., hypodermatically, and removed her to the hospital. The morphin caused a temporary cessation of both pains and convulsions. Preparation was made to do whatever might prove necessary, and the advice and aid of Drs. Hall, Bacon and Hawke were secured. At 9 a. m. she began having pains again and soon had a very severe convulsion. The urine showed a large quantity of albumin. Casarean section was decided on and was at once performed, the technic of the modern Porro operation being followed. Three pints of normal saline solution were left in the abdomen, two pints were given subcutaneously under the breasts, and three pints were introduced into the rectum. She was at once placed in a hot pack, which was continued for thirty-six hours, and as vomiting did not occur, she was encouraged to drink water freely, taking almost three gallons by mouth in thirty-six hours.

Postoperative History.—On the morning of December 19 she had three hard convulsions. The administration of veratrum viride was begun at this time, and three pints more of normal saline solution were infused under the breasts. The veratrum was given in variable hourly doses so as to keep the pulse rate below eighty, and this was continued for three days, after which digitalis was used in sufficient dose to produce the same effect on the pulse, this being continued for almost a week until the pulse remained at this point unaided. Magnesium sulphate was given in such doses that prolonged purgation was maintained. No further convulsions occurred, the albumin disappeared from the urine in five days, the further course of the case was uneventful, and the patient was able to leave the hospital at the end of three weeks from the operation.

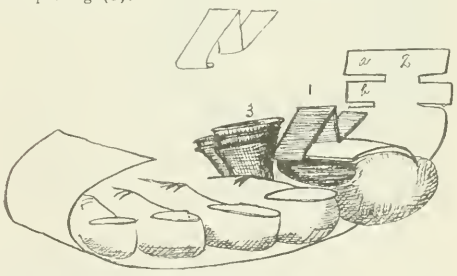
Fate of Child.—The child lived for two and a half hours and died from convulsions which resembled those from which the mother had suffered. It is my belief that the death of the child was caused more from toxic material which it had received from the mother than from its prematurity.

New Instruments

LEVER FOR INGROWING TOENAIL.

J. T. LELAND, M.D.
HERMAN, MINN.

The lever here illustrated has given satisfaction in the treatment of ingrowing toe-nail. It consists of a piece of galvanized tin 1½ in. long and ¼ in. wide, bent as illustrated (1). The edge is inserted under the nail and held by a piece of adhesive plaster (2), cut transversely into arms *a* and *b*. Arms marked *a* are made fast to the nail to prevent slipping. Arms *b* are attached to arm of lever. The plaster is then carried round the foot while the desired downward pressure is being made. To separate the granulating surface from the adjoining toe I insert gauze packing (3).



The advantages of my lever are:

1. The nail is permitted to grow.
2. The lever can be applied to any nail, regardless of whatever mutilation it may have received.
3. No packing under the nail is necessary.

Action of X-Rays on the Blood.—Gramegna and Quadrone (*Arch. Gén. de Méd.*), have studied the effect of the *x*-rays on the blood in rabbits and guinea-pigs, and found marked changes in the white corpuscles and diminution of their number, together with increased coagulability of the blood. The red corpuscles were less affected, the chief change observed being a diminution of resistance. The hemoglobin ratio was very little affected. The practical suggestion would be that of the possible utility of the *x*-rays in increasing the density and coagulability of the blood in hemophilia and other hemorrhagic conditions.

THE BOSTON SESSION

American Medical Association, Fifty-Seventh Annual Session, Boston, Mass., June 5 to 8, 1906.

OFFICIAL CALL

ANNOUNCEMENT OF THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, TO BE HELD AT BOSTON, JUNE 5-8, 1906.

CHICAGO, April 14, 1906.

To the Officers and Members of the Constituent State and Territorial Associations of the American Medical Association:

The fifty-seventh annual session of the American Medical Association will be held at Boston, on Tuesday, Wednesday, Thursday and Friday, June 5, 6, 7 and 8, 1906.

HOUSE OF DELEGATES.

The House of Delegates of the American Medical Association will convene in the Boston Medical Library, Boston, at 10 a. m., on Monday, June 4, 1906.

The following is a list of the constituent associations and the number of delegates to which each is entitled:

State.	Delegates.	State.	Delegates.
Alabama	3	Montana	1
Arizona	1	Nebraska	2
Arkansas	2	Nevada	1
California	4	New Hampshire	1
Colorado	2	New Jersey	3
Connecticut	2	New Mexico	1
Delaware	1	New York	..
Dist. of Columbia	1	North Carolina	2
Florida	1	North Dakota	1
Georgia	2	Ohio	5
Hawaii	1	Oklahoma	1
Idaho	1	Oregon	1
Illinois	8	Philippine Islands	1
Indian Territory	1	Pennsylvania	8
Indiana	4	Rhode Island	1
Iowa	4	South Carolina	1
Kansas	2	South Dakota	1
Kentucky	3	Tennessee	3
Louisiana	2	Texas	5
Maine	1	Utah	1
Maryland	2	Vermont	1
Massachusetts	6	Virginia	3
Michigan	4	Washington	1
Minnesota	2	West Virginia	2
Mississippi	2	Wisconsin	3
Missouri	3	Wyoming	1
U. S. Public Health and Marine-Hospital Service			1
Medical Department, U. S. Army			1
Medical Department, U. S. Navy			1
Each of the scientific sections, one delegate			12

FIRST GENERAL MEETING.

The first General Meeting, which constitutes the opening exercises of the scientific functions of the Association, will be held at 10:30 a. m., Tuesday, June 5.

REGISTRATION DEPARTMENT.

The Registration Department will be open from 8:30 a. m. until 5 p. m., on Monday, Tuesday, Wednesday and Thursday, June 4, 5, 6 and 7, and from 9 to 10 a. m., on Friday, June 8.

Those who desire to join the Association at the annual session should bring certificates of membership in their state associations.

L. S. McMURTRY,
President.

GEORGE H. SIMMONS, Secretary.

PRELIMINARY PROGRAMS OF SECTIONS.

The Papers to Be Read at Boston—Announcement About the Official Program.

The following is a partial list of titles of papers to be read before the various sections at Boston. The order here is not necessarily the order which will be followed in the Official Program. This Official Program will be similar to those issued in previous years and will contain the final program of each section, with abstracts of the papers, lists of committees, programs of General Meetings and House of Delegates, lists of entertainments, map of Boston, etc. To prevent misunderstandings and to protect the interests of advertisers, etc., it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON PRACTICE OF MEDICINE.

CHAIRMAN, HERBERT C. MOFFITT, SAN FRANCISCO; SECRETARY, JOSEPH L. MILLER, 100 STATE STREET, CHICAGO.

Recent Advances in Physiology of Circulation. Joseph Erlanger, Baltimore.

True and False Angina. James M. Anders, Philadelphia.

The Diagnosis and Treatment of Some Unusual Heart Affections. H. A. Hare, Philadelphia.

Mutual Relations of Heart and Kidney. N. B. Potter, New York.

The Diagnosis of Heart Insufficiency Apart from Valvular Disease. R. H. Babcock, Chicago.

Pericarditis. N. S. Davis, Chicago.

A Study of the Heart in Chorea. W. S. Thayer, Baltimore.

Address: Dr. Krehl, Strassburg, Germany.

Symposium on Joints.

Acute and Chronic Articular Rheumatism. Lewis Conner, New York.

Gonorrheal Arthritis and Gonorrheal Septicemia. J. A. Witherspoon, Nashville.

Differential Diagnosis of Rheumatoid Affections. A. B. Herrick, Chicago.

Joint Affections in Nervous Disease. L. F. Barker, Baltimore.

The Treatment of Chronic Joint Affections. Locke and Osgood, Boston.

Symposium with Surgical Section.

Etiology and Diagnosis of Ulcer. Frank Billings, Chicago.

Treatment of Ulcer. Alexander Lambert, New York City.

Demonstration of Ulcer Cases Treated Medically or Surgically in Massachusetts General Hospital. H. F. Hewes, Boston.

When Do the Gastric and Duodenal Ulcers Require Surgical Treatment and What Procedures Are Advisable? W. L. Rodman, Philadelphia.

The Results of the Surgical Treatment of Gastric and Duodenal Ulcers. W. L. Mayo, Rochester, Minn.

Meeting with Section on Pathology and Physiology.

Some Newer Methods in the Examination of the Thoracic Cavity. J. A. Capps, Chicago.

Border-line Affections of the Lung. J. H. Musser, Philadelphia.

The Treatment of Pleurisy with Effusion. F. Forschheimer, Cincinnati.

Chronic Non-tubercular Affections of the Lungs and Pleura. S. G. Bonney, Denver.

Bacteriology of Pleural Effusions. L. W. Ladd, Cleveland.

Cytology of Pleural Effusions. Percy Musgrave, Boston.

Studies on Cardiospasm. Bertram W. Sippy, Chicago.

Intermittent Fever in the Convalescence of Typhoid. J. Dutton Steele, Philadelphia.

Value of Tests for Occult Blood in the Diagnosis and Treatment of Diseases of the Digestive Organs. F. W. White, Boston.

Non-calculous Cholecystitis. A. O. J. Kelly, Philadelphia.

Indications and Contraindications to the Use of X-Rays in Medical Cases. D. L. Edsall, Philadelphia.

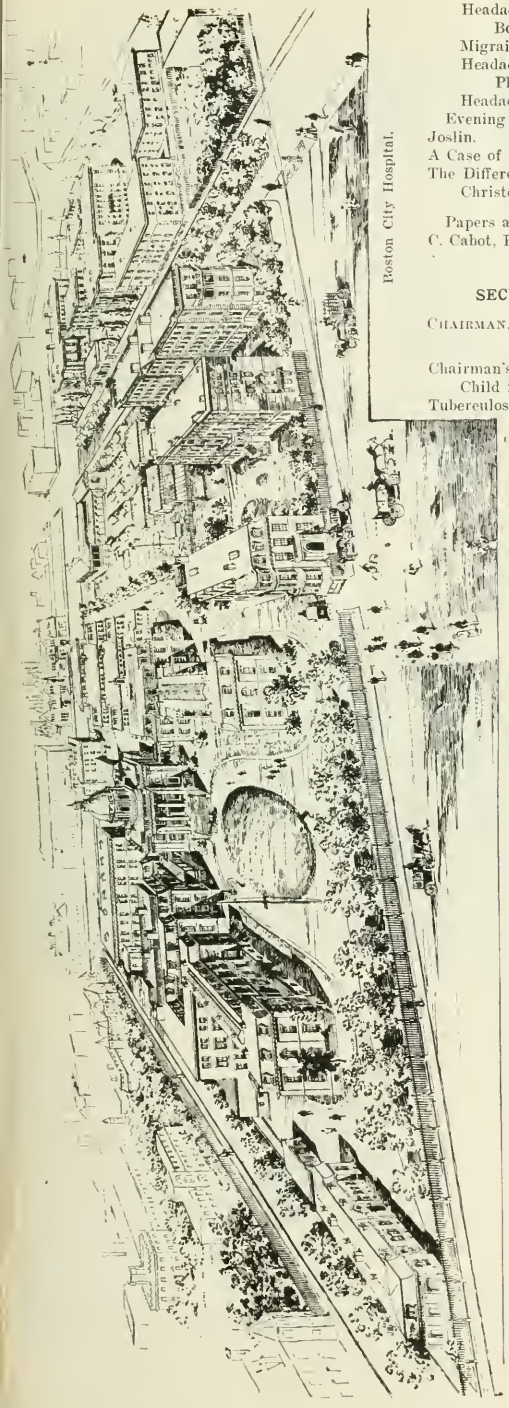
Acute Leukemia. Philip Marvel, Atlantic City, N. J.

Posteritical Fever and Other Sequelæ of Croupous Pneumonia. J. E. Talley, Philadelphia.

The Opsonic Index in Medicine. Norman Ditman, New York.

Discussion on Chronic Headache: Its Causes and Treatment.

Nose and Sinuses. Cornelius G. Coakley, New York City.
Eye. George Gould, Philadelphia.
Ear. Philip Hammond, Boston.
Chronic Nervous Headaches. G. L. Walton, Boston.



Headache Due to Affections of the Pelvic Organs. F. H. Davenport, Boston.

Migraine. Joseph Collins, New York City.

Headache Due to Distnrbance of the Digestive Tract. Joseph Sailer, Philadelphia.

Headache of Renal Origin. A. C. Croftan, Chicago.

Evening Demonstrations are to be made by Drs. R. C. Cabot, Locke and Joslin.

A Case of Septicemia from Colon Bacillus. DeLancey Rochester, Buffalo.

The Differential Diagnosis Between Duodenal Ulcer and Gallstone Disease. Christopher Graham, Rochester, Minn.

Papers are also to be read by Drs. George Dock, Ann Arbor, and Richard C. Cabot, Boston, the titles of which are not yet received.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

CHAIRMAN, C. S. BACON, CHICAGO; SECRETARY, W. P. MANTON, 32 WEST ADAMS AVENUE, DETROIT.

Chairman's Address: The Legal Responsibility of the Physician for the Child in Utero. Charles S. Bacon, Chicago.

Tuberculosis of the Kidney. Charles P. Noble, Philadelphia.

The Treatment of Tuberculosis of the Urinary Tract in Women. Edgar Garcean, Boston.

The Formation of a Vesico-vagino-rectal Fistula Combined with Closure of the Introitus Vaginæ for Certain Forms of Urinary Incontinence. Reuben Peterson, Ann Arbor.

Report of Committee on Nomenclature of Endometritis. Ernest F. Tucker, Chairman, Portland, Ore.

Success, the Surgical Desideratum. A. Ernest Gallant, New York.

The Pathology of Uterine Cancer. Thomas S. Cullen, Baltimore.

The Early Symptoms of Uterine Cancer. John G. Clark, Philadelphia.

The Operative Treatment of Cancer of the Cervix Uteri. Emil Ries, Chicago.

The Radical Operation in Uterine Cancer. Alfons von Rosthorn, Heidelberg, Germany.

Report of Committee on Uterine Cancer. John G. Clark, Chairman, Philadelphia.

Opening Discussion on Uterine Cancer. James F. W. Ross, Toronto, Canada.

The Operative Treatment of Cancer of the Rectum. Matthew D. Mann, Buffalo.

The Preservation of the Functions of the Broad Ligaments in Pelvic Surgery. E. C. Dudley, Chicago.

The Function of the Uterosacral and Round Ligaments. J. Wesley Bovée, Washington, D. C.

The Conservative Surgery of the Ovaries. Edward Reynolds, Boston.

The Present Status of Conservatism in the Surgical Treatment of Tubes and Ovaries. J. E. Cannaday, Paint Creek, W. Va.

Hernia of the Ovary and Fallopian Tube. Frank T. Andrews, Chicago.

Lung Complications Following Abdominal Operations. Hunter Robb, Cleveland.

The Stem Pessary for Amenorrhea and Dysmenorrhea. Some Further Observations. J. H. Carstens, Detroit.

Choice of Methods for Dilating the Gravid Uterus. Edward P. Davis, Philadelphia.

Manual and Instrumental Dilatation of the Pregnant and Parturient Uterus. J. Clifton Edgar, New York.

Instrumental Dilatation of the Parturient Uterus. Franklin S. Newell, Boston.

The Indications for the Use of the Bossi Dilator and the Technic of Its Use, with a View to Avoiding Serious Lacerations. Barton Cooke Hirst, Philadelphia.

Progress in Obstetrics and Gynecology. A. Duhrssen, Berlin, Germany.

Uterine Myomata Complicated with Pregnancy, with Cases. E. E. Montgomery, Philadelphia.

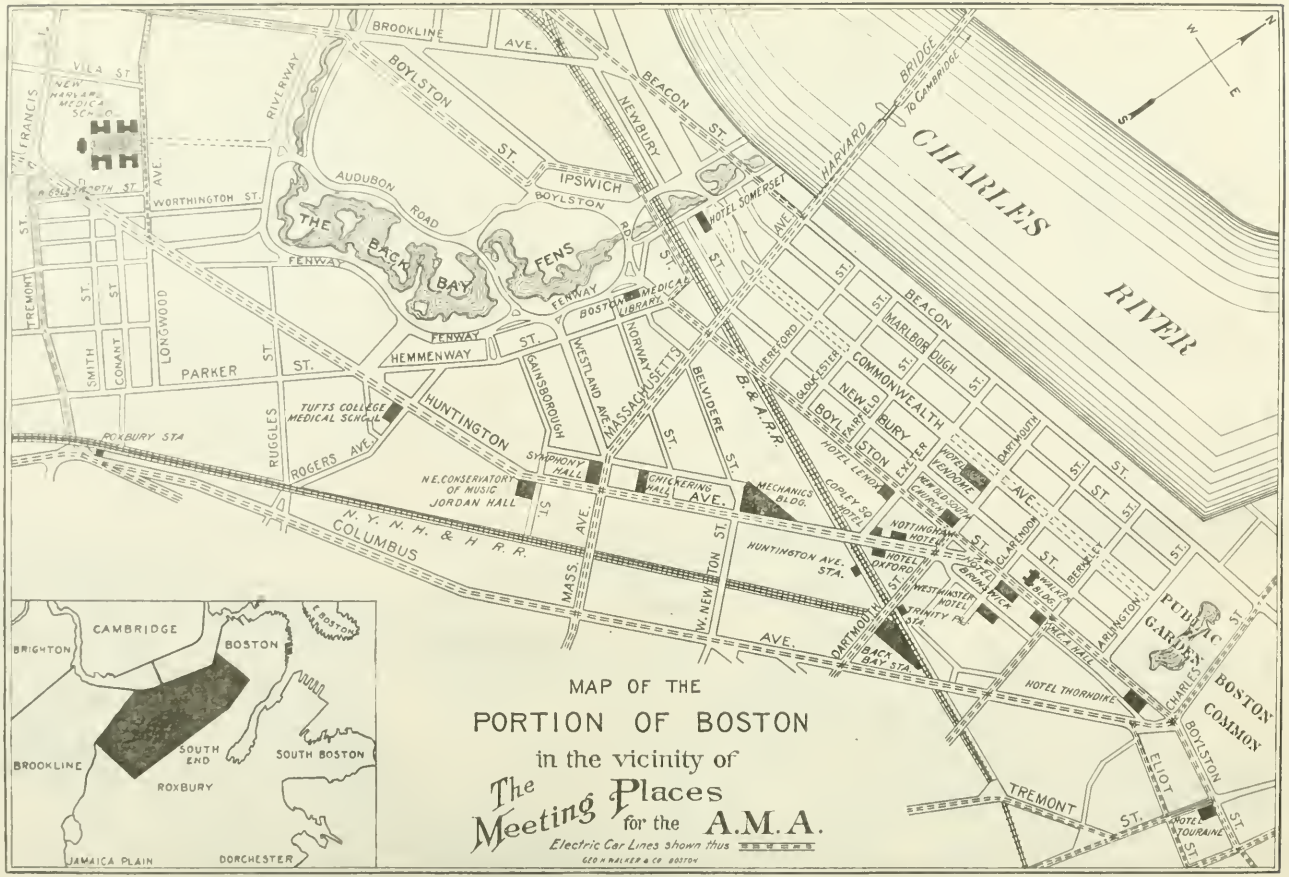
Pregnancy and Labor Complicated by Anterior Fixation of the Uterus. George M. Boyd, Philadelphia.

The Surgical Treatment of Puerperal Sepsis. R. W. Stewart, Cincinnati.

To What Extent Can the Gynecologist Prevent and Cure Insanity Among Women. W. O. Henry, Omaha.

The Best Method of Closure of Aseptic Wounds, Especially of the Abdomen. Henry O. Marcy, Boston.

Retroperitoneal Cysts; Developing Possibly from the Wolffian Body. Report of Cases. Francis D. Donaghue, Boston.



HEADQUARTERS.

Vendome: General Officers.
Somerset: Practice of Medicine.
Copley Square: Obstetrics and Pathology.
Brunswick: Surgery and Anatomy.
Thorndike: Hygiene and Laryngology.
Lenox: Ophthalmology.
Nottingham: Children and Cutaneous.

MEETING PLACES.

Mechanics Hall: Opening Session, Registration, Clinical Exhibit, etc.

Boston Medical Library: House of Delegates.

Jordan Hall: Evening General Session. Section on Surgery, Tuesday evening.

New Harvard Medical School: Scientific Exhibit; Sections

Tufts College Medical School: Sections on Hygiene, Stomatology, Pharmacology.

Y. M. C. A. Hall: Section on Practice of Medicine.

Chickering Hall: Section on Obstetrics.

Huntington Hall: Section on Surgery, Wednesday, Thursday, and Friday p. m.

New Old South Church: Joint Session of the Sections on Medicine and Surgery, Wednesday p. m.

New Harvard Medical School Buildings, Longwood Avenue, where the Scientific Exhibit, the meetings of six sections and three afternoon entertainments will be held.

SECTION ON SURGERY AND ANATOMY.

CHAIRMAN, ROBERT F. WEIR, NEW YORK; SECRETARY, ARCHIBALD MACLAREN, 110 LOWRY ARCADE, ST. PAUL, MINN.

Chairman's Address. Robert F. Weir, New York.
Address. Prof. F. Trendelenburg, Germany.
The Results of the Partial Occlusion of Large Arteries, Especially of the Thoracic and Abdominal Aorta. W. S. Halstead, Baltimore.
Tumors of the Carotid Gland. W. W. Keen, Philadelphia.
Appendicostomy. James P. Tuttle, New York.
Surgical Treatment of Femoral Hernia. A. J. Ochsner, Chicago.
Surgical Diseases of the Sigmoid. H. D. Niles, Salt Lake City.
Neoplasms of the Colon. A. F. Jonas, Omaha.
Additional Experiences in the Treatment of Aneurism by the Author's Method of Intrasaccular Suture (Endo Aneurismorrhaphy). R. Matas, New Orleans.
Capillarity in Intestinal Suturing. F. Gregory Connell, Salida, Colo.
Treatment of Exophthalmic Goiter by a Specific Serum. Its Preparation. John Rogers and S. P. Beebe, New York.
Indications for Prostatectomy and Its Results. Alexander Hugh Ferguson, Chicago.
Prostatic Hypertrophy. E. Hurry Fenwick, London, England.
The Clinical Importance of Variations of the Bones of the Hands and Feet. Thomas Dwight, Boston.
Cardiac Stimulation for Suspended Animation by Direct Digital Manipulators. Report of Cases and Illustrations. B. M. Ricketts, Cincinnati.
Five Years' Use of an Original Filigree for the Prevention and Repair of Abdominal Hernia. Willard Bartlett, St. Louis.
Radium in Surgical Work. Robert Abbe, New York.
A New Primary Position in the Bloodless Treatment of the Congenital Hip Dislocation. Frederick Mueller, Chicago.
Further Considerations of the Surgery of the Spinal Cord and Peripheral Nerves. Experimental and Clinical. J. B. Murphy, Chicago.
Treatment of Fractures of the Patella. J. Ransohoff, Cincinnati.

The Massachusetts General Hospital on Blossom Street. In the dome of this building the use of ether for surgical anesthesia was first demonstrated by Morton in 1846.

Causes and Diagnosis of Gastric and Duodenal Ulcer. Frank Billings, Chicago.
Medicinal Treatment of Gastric and Duodenal Ulcer. Bertram W. Sippy, Chicago.
When Do the Gastric and Duodenal Ulcers Require Surgical Treatment and What Procedures Are Advisable? W. L. Rodman, Philadelphia.
The Results of the Surgical Treatment of Gastric and Duodenal Ulcers. W. J. Mayo, Rochester, Minn.
Results of Medical and Surgical Treatment of Gastric Ulcer in Massachusetts General Hospital from 1896 to 1906. H. F. Hewes, Boston.
Tabulation of Ulcer Cases Recently Treated in Massachusetts General Hospital and Demonstration of Patients. H. F. Hewes, Boston.
The Recognition and Surgical Treatment of Duodenal Ulcer. W. D. Haggard, Nashville, Tenn.
Report of Cases of Uterine Fibroids Associated with Gallstones. A. Vanderveer, Albany, N. Y.
Surgical Intervention in Affections of the Biliary Tract. John B. Deaver, Philadelphia.
Some Experiences in the Surgical Treatment of Exophthalmic Goiter. F. I. Shepard, Montreal, Canada.
Results from the Surgical Treatment of (a) Facial Palsy, (b) Brachial Birth Palsy. Alfred S. Taylor and L. Pierce Clark, New York.
Treatment of Fractures of the Patella. Joseph Ransohoff, Cincinnati.
Diseases of the Urachus. J. F. Binnie, Kansas City.
Spontaneous Intracranial Hemorrhage Associated with Trigeminal Nevi. Harvey Cushing, Baltimore.
Tuberculosis of the Kidney. Arthur D. Bevan, Chicago.
The Surgical Aspects of Congenital Cystic Kidney. F. B. Lund, Boston.
Treatment of Bone Cavities. James E. Moore, Minneapolis.
The Technic of Operations on the Head and Neck. George W. Crile, Cleveland.
Dislocation of the Outer End of the Clavicle; Its Pathology and Treatment. Charles L. Scudder, Boston.
Hour-glass Duodenum. K. A. J. Mackenzie, Portland, Ore.
Surgical Treatment of Congenital Hydrocephalus, with Report of a Case of Meningocele and Hydrocephalus. J. Shelton Horsley, Richmond, Va.

A paper is also to be read by A. J. McCosh, New York, the title of which has not been received.

SECTION ON OPHTHALMOLOGY.

CHAIRMAN, LEWIS H. TAYLOR, WILKESBARRE, PA.; SECRETARY, ALBERT E. BULSON, JR., FORT WAYNE, IND.

Chairman's Address. Lewis H. Taylor, Wilkesbarre, Pa.

Symposium on the Bacteriology of the Eye.

The Bacteriology of the Eyelids. George S. Derby, Boston.
The Pathogenic Bacteria of the Conjunctiva. E. A. Shumway, Philadelphia.
The Diplobacillus of Morax-Axenfeld. Brown Pusey, Chicago.
Pathogenic Bacteria of the Eyeball. John E. Weeks, New York City.
The Staining and Examination of the Bacteria of the Eye by Simple Practical Methods. E. S. Thomson, New York City.

The Differential Diagnosis and Prognosis of Tumors of the Uveal Tract. H. V. Würdemann, Milwaukee.
So-Called Leucosarcoma of the Iris. E. V. L. Brown, Chicago.
The Treatment of Simple Chronic Glaucoma with Miotics. William C. Posey, Philadelphia.
The Relation of Disease of the Nasal Accessory Sinuses to Disease of the Eyes. F. E. Brawley, Chicago.
A Demonstration of the Fundi of Some Birds, with Remarks on Their Eyes and Eyesight. Casey A. Wood, Chicago.
Conjugate Lateral Deviations. J. H. Claiborne, New York City.
Dendritic Keratitis of Malarial Origin. E. C. Ellett, Memphis.
Some Axioms Concerning Ocular Rotations. G. C. Savage, Nashville.
The Ripening Operation for Immature Senile Cataract. Its Place. F. C. Todd, Minneapolis.
The Eye Injuries of Independence Day, and What Has Been Accomplished in Baltimore Toward Lessening Them. A Further Contribution to the Subject. R. L. Randolph, Baltimore.
Ocular Injuries from Foreign Bodies, with Report of 420 Cases. William M. Sweet, Philadelphia.
The Use of the Secondary Cataract Knife. M. Black, Denver.
A New Phenomenon of Color Conversion. G. T. Stevens, New York City.

Mechanics Hall, on Huntington Avenue, where the Bureau of Registration and Information, the Opening Session, the Commercial, Clinical and Public Health Exhibits, and a ladies' rest room will be situated, and where a reception to the President and members of the American Medical Association will be held.

Paraffin Plates as an Aid in Operations for Extensive Symblepharon and the Restoration of Cul-de-Sacs for Prothesis. William H. Wilder, Chicago.
Autointoxication in Relation to the Eye. G. E. de Schweinitz, Philadelphia.
Exhibition, by Means of the New Opaque Projector of Original Colored Ophthalmoscopic Drawings. Charles H. Beard, Chicago.
A Study of Convergence and Its Defects, Including an Analysis of 441 Cases of Exophoria. Wendell Reber, Philadelphia.
Some Personal Experiences in the Use of Electricity in Ophthalmic Practice. W. F. Coleman, Chicago.
The Value of X-Rays in Ocular Therapeutics. G. Oram Ring, Philadelphia.
Some Important Considerations in the Extraction of Cataract. Mark D. Stevenson, Akron, Ohio.
Incurable Eyestrain. George M. Gould, Philadelphia.
A New Supplementary Test for Color Vision. Nelson M. Black, Milwaukee.
Some Unusual Ocular Manifestations of Arteriosclerosis. William Zentmayer, Philadelphia.
Injuries of the Eye with Birdshot. W. B. Marple, New York City.
Unioocular Inflammations of the Optic Nerve and Retina. A. A. Hubbell, Buffalo.
The Treatment of Progressive Atrophy of the Optic Nerve, Due to Acquired Syphilis, by Subconjunctival and Intravaginal Injections of Sublimate of Mercury. C. S. Bull, New York City.
Physical Economics. E. E. Holt, Portland, Maine.
Ophthalmic Practice of the Present Time. T. Valk, New York City.
Cataract Extraction with Modified Iridotomy. F. H. Verhoeff, Boston.
Relations of the Superior and Inferior Recti Muscles to Convergent Squint. Edward Jackson, Denver.
Retrobulbar Optic Neuritis Following Childbirth. C. J. Kipp, Newark.
A More Uniform Standard of the Illumination of Visual Test-Types. C. H. Williams, Boston.

SECTION ON HYGIENE AND SANITARY SCIENCE.

CHAIRMAN, DENSLOW LEWIS, CHICAGO; SECRETARY, ELMER E. HEG, SEATTLE, WASH.

Chairman's Address: The New Hygiene. Denslow Lewis, Chicago.

The Fetich of Disinfection. C. V. Chapin, Providence, R. I.

Health Inspection as Applied to the Individual. Louis Faugeres Bishop, New York.

The Plague. Ashburton Thompson, Sydney, N. S. W.

The Pathology of the Plague. Maximilian Herzog, Manila, P. I.

The Plague of American Cities. N. K. Foster, Sacramento, Cal.

Symposium on the Rational Prophylaxis of the Venereal Diseases.

Publicity as a Factor in Venereal Prophylaxis. Prince A. Morrow, New York; Max Joseph, Berlin, and William J. Herdman, Ann Arbor, Mich.

The Guarantee of Safety in the Marriage Contract. Albert H. Burr, Chicago, and Prof. A. Dührssen, Berlin.

The Study of Stirpiculture as a Preventive of Degeneracy. G Stanley Hall, President Clark University, Worcester, Mass.

Education as a Factor in the Prevention of Criminal Abortion and Illegitimacy. Henry O. Marcy, Boston; J. Henry Carstens, Detroit, and Joseph Price, Philadelphia.

The Protection of the Innocent. Charles A. L. Reed, Cincinnati; William Lee Howard, Baltimore, and Edward L. Keyes, Jr., New York.

The Restoration of the Fallen. Miss Eva Booth, Commander of the Salvation Army in America; Graham Taylor, of Chicago Commons, and Jacob A. Riis, Long Island, N. Y.

Symposium on the Hygiene of Tuberculosis.

The Duty of Municipalities and States in the Prevention and Control of Tuberculosis. G. Walter Holden, Denver.

Faneuil Hall, the "Cradle of Liberty," of Revolutionary fame.

The Duty of the State in Reference to Venereal Diseases. W. C. Chapman, Toledo, Ohio; G. Shearman Peterkin, Seattle, Wash.; Henry D. Holton, Brattleboro, Vt., and Prof. T. Tuffier, Paris, France.

What Shall We Teach the Public Regarding Venereal Diseases? Albert E. Carrier, Detroit; George S. Whiteside, Portland, Ore., and Bransford Lewis, St. Louis.

Venereal Diseases in Children. Judge Ben. B. Lindsey, of the Juvenile Court, Denver, and Alfred C. Cotton, Chicago.

The Etiology of the Social Evil. Charles Chassaignac, New Orleans, and G. Frank Lydston, Chicago.

A Practical Lesson in Reglementation. William E. Harwood, Eveleth, Minn.

The Prostitute Problem. Charles G. Cumston, Boston, and Ludwig Weiss, New York.

Symposium on the Duty of the Profession to Womankind.

The Physical and Evolutionary Basis of Marriage. Bayard Holmes, Chicago.

The Duty of the Railroads in Transportation and Care of Tuberculous Passengers. John R. Haynes, Los Angeles, Cal.

The Value of the Sanatorium in the Crusade Against Tuberculosis. Clarence L. Wheaton, Chicago.

Some Ways to Prevent the Spread of Tuberculosis. William M. Beggs, Denver.

Compulsory Registration. Herman M. Biggs, New York.

Symposium on the Alcohol Question.

The Effects of Alcohol on the Human System.

(a) Relating to Physiologic Effect. John Madden, Portland, Ore.

(b) Relating to Effect on School Children. T. Alex. MacNicholl, New York.

(c) Relating to Tuberculosis. T. J. Mays, Philadelphia.

(d) Relating to Degeneracy. E. S. Talbot, Chicago.

(e) Relating to Epilepsy. Matthew Woods, Philadelphia.

The Value of Instruction Regarding Alcohol. Henry F. Hewes, Boston, and Mrs. K. Stevenson, W. C. T. U., Boston.
The Limitation of Intemperance. Samuel Dickie, President Albion College Albion College, Michigan; E. C. Lovering, U. S. Navy, and Charles E. Woodruff, U. S. Army.
The Care of the Inebriate. T. D. Crothers, Hartford, Conn.; C. E. Woodbury, Foxborough, Mass.; George F. Butler, Chicago, and L. A. Mason, Brooklyn.

SECTION ON DISEASES OF CHILDREN.

CHAIRMAN, W. C. HOLLOPETER, PHILADELPHIA; SECRETARY, W. J. BUTLER, 1487 JACKSON BOULEVARD, CHICAGO.

Address of Welcome. Thomas Morgan Rotch, Boston.
Chairman's Address—The Pediatric Outlook. W. C. Holloppeter, Philadelphia.
Injuries to the Child's Head During Labor and the Duties of the Obstetrician in the Matter. B. Sachs, New York City.
Heredity and Environment. C. F. Wahrer, Ft. Madison, Iowa.
Hemorrhage in the Newborn. H. McClanahan, Omaha.
The Value of Blood Cultures in the Diagnosis of Acute Infections in Children. Thomas Morgan Rotch, Boston.
Fever and the Place of Salines in Treatment. J. Madison Taylor, Philadelphia.

T Wharf, with the schooners of the fishing fleet. One of the characteristic sights of the Boston water front.

Bacteriologic and Blood Findings in 36 Cases of Bowel Infection in Infants. J. C. Cook, Chicago.
A Further Contribution to the Study of Stools in Starch-Fed Infants. C. G. Kerley and N. H. Mason, New York City.
Sodium Citrate in Infant Feeding. A. C. Cotton, Chicago.
Recent Landmarks in the Artificial Feeding of Infants. Thomas S. Southworth, New York City.
Whole Milk Versus Laboratory Feeding. A. McAllister, Camden, N. J.
Tuberculosis in Infants and Children. E. E. Graham, Philadelphia.
Open-Air Treatment of Pneumonia. W. P. Northrup, New York City.
An Analysis of 40 Cases of Meningitis in Infants. J. L. Morse, Boston.
Cerebral Syphilis in Childhood. Arthur W. Fairbanks, Boston.
Modification of Milk, Simple and Accurate. Daniel Brown, Salem, Mass.
Simplicity in Infant Feeding. C. Townsend, Boston.
Report on Certified Milk Dairy of Elmira, N. Y. C. W. M. Brown, Elmira, N. Y.
Pleuritic Exudate in Children. Melinda Germann, Quincy, Ill.
Rhinitis in Children. Louis Fischer, New York City.
Bacteriology of Upper Respiratory Tract, with Special Reference to Influenza Bacillus. D. J. Davis, Chicago.
Contribution to the Study of Congenital Laryngeal Stridor. A. Friedlander, Cincinnati.
Rheumatism in Children. J. Ross Snyder, Birmingham, Ala.
The Clinical Aspects of Acute Rheumatism in Childhood and Their Significance in the Question of Specific Etiology. C. H. Dunn, Boston.
Superstition in Teratology. E. T. Shelley, Atchison, Kan.
The Opsonic Content of the Blood of Infants. Samuel Amberg, Baltimore.
Neuroma and Neurofibroma. W. E. Darnell, Atlantic City, N. J.
Congenital Word-Blindness. J. H. Claiborne, New York City.
Constitutional Low Arterial Tension in Children. L. F. Bishop, New York City.
The Value of Small Amounts of Human Milk in the Treatment of Infantile Atrophy and the Infections of Infants. Frances P. Denny, Brookline, Mass.
Tetanus Neonatorum—a Statistical Study. James M. Anders and Arthur C. Morgan, Philadelphia.
Some Unheeded Principles Involved in the Dietetic Management of Infants in Hot Weather. G. R. Pisek, New York City.

SECTION ON STOMATOLOGY.

CHAIRMAN, H. P. CARLTON, SAN FRANCISCO; SECRETARY, EUGENE S. TALBOT, 103 STATE STREET, CHICAGO.

Chairman's Address. H. P. Carlton, San Francisco.
The Structure of the Jaws of the Lower Vertebrates. J. S. Kingsley, Boston.
Development of the Human Jaw. Charles L. Minot, Boston.
Palates of the Feeble-minded. Walter Channing, Brookline, Mass.
The Reflexes of Dentition from the Physician's Standpoint. Charles Hunter Dunn, Boston. Discussion opened by Thomas Morgan Rotch, Boston, and A. C. Cotton, Chicago.
Gingival Manifestations of Metabolic Disorders. Alfred C. Croftan, Chicago.
Interstitial Gingivitis Produced by Autointoxications as Indicated by the Urine and Blood Pressure. Eugene S. Talbot, Chicago.
Treatment of Loosened Teeth. M. L. Rhein, New York City.
Conservatism in the Treatment of Infants with Harelip and Cleft Palate. G. V. I. Brown, Milwaukee, Wis.
Conservative Surgery of the Lip. Thomas Fillebrown, Boston.
The Prevention of Disfiguring Scars About the Face. M. I. Schamberg, Philadelphia.
Some Pathologic Features of the Pulp. V. A. Latham, Chicago.
The Relation of Systemic Diseases to the Conditions of the Oral Cavity. James E. Power, Providence, R. I.
Medical Phases of Dental Disorders. Samuel A. Hopkins, Boston.
The Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology. Filandro Vincenti, Chieli, Italy.
Practical Innervation of the Trifacial Nerve. M. H. Fletcher, Cincinnati.
Two Cases of Infantile Scurvy. Alice M. Steeves, Boston.

NERVOUS AND MENTAL DISEASES.

CHAIRMAN, WHARTON SINKLER, PHILADELPHIA; SECRETARY, T. H. WEISENBERG, 2030 CHESTNUT STREET, PHILADELPHIA.

This program appears about fifteen pages further on.

SECTION ON LARYNGOLOGY AND OTOLOGY.

CHAIRMAN, OTTO T. FREER, 288 HURON ST., CHICAGO; SECRETARY, W. S. BRYANT, 57 WEST 53D STREET, NEW YORK.

Diagnosis, Prognosis and Treatment of Laryngeal Tuberculosis. Herman Stolte, Milwaukee, Wis.
Certain Facts Concerning Faucial Tonsils. Charles M. Robertson, Chicago, Ill.
Tracheal Inflammation. Emil Mayer, New York City.
The Examination and Surgery of the Upper End of the Esophagus. Harris Peyton Mosher, Boston.
Atrophic Rhinitis. George L. Richards, Fall River, Mass.
The Treatment of Hypertrophic Intumescent Rhinitis. E. Fletcher Ingals and Stanton S. Friedberg, Chicago.
Physiology of Coryza. F. C. Cobb, Boston.

Acute and Chronic Suppuration of the Ear and Nose the Direct Cause of Facial Erysipelas. Cullen F. Welty, San Francisco.

The Use of Tuning Forks in the Diagnosis and Treatment of Deafness Due to Ossicular Rigidity. Philip D. Kerrison, New York City.

Tuberculosis of the Middle Ear and Mastoid. Eugene A. Crockett, Boston.

Exhibition of New Instruments. (a) Protection Sheet for Mastoid Surgery, (b) An Algesimeter. H. O. Reik, Baltimore, Md.

Results of Improved Technic in Otological Surgery. W. Sohier Bryant, New York City.

A Modification of the Simple Mastoid Operation which Shortens Convalescence by Facilitating Wound Repair. E. M. Plummer and H. H. Germain, Boston.

Technic in the After Care of the Radical Mastoid Operation. Philip Hammond, Boston.

Treatment of Intracranial Complications of Middle Ear Suppuration. Edward B. Dench, New York City.

Otology in Its Relation to Rhinology and Larynology. Clarence J. Blake, Boston.

Lumbar Puncture in Ear Disease. Seymour Oppenheimer, New York City.

Killian Operation. Frederick L. Jack, Boston.

The Frontal Sinus and Some of Its Variations. M. H. Cryer, Philadelphia.

Skiagraphy of the Air Sinuses. Cornelius G. Coakley, New York City.

Some Conclusions on the Submucous Window Resection of the Nasal Septum, Based on a Series of Cases. Lee Maidment Hurd, New York City.

The Submucous Resection of the Nasal Septum. J. F. Byington, Battle Creek, Mich.

A Second Report (after ten years) of the Experiences, Procedures and Results in Subperichondrial and Subperiosteal Operations on the Cartilages and Bones of the Nasal Septum. Robert C. Myles, New York City.

A paper, the title of which is not yet received, will be read by Sir William Macewen, Glasgow, Scotland.

A paper, the title of which is not yet received, will be read by D. Bryson Delavan, New York City.

SECTION ON CUTANEOUS MEDICINE AND SURGERY.

CHAIRMAN, DOUGLAS W. MONTGOMERY, SAN FRANCISCO. SECRETARY, R. R. CAMPBELL, 100 STATE STREET, CHICAGO.

The Age at Which Syphilis is Acquired. Douglas W. Montgomery, San Francisco.

Leukoplakia in Its Relation to Other Dermatoses. Max Joseph, Berlin, Germany.

Four Cases of More or Less Complete Alopecia in a Family of Eleven. Henry W. Stelwagon, Philadelphia.

The Therapeutic Nature of Chrysophanic Acid in Dermatology. Charles James Fox, Hartford, Conn.

A Case of Pemphigus Affecting the Mucous and Serous Membranes Only. Edmund L. Cocks, New York City.

On the Relations of Nerve Impulse to Cutaneous Inflammation. Ernest L. McEwen, Chicago.

Pemphigus Neonatorum. O. H. Foerster, Milwaukee, Wis.

Lichen Planus of the Mouth and Lips, with Report of a Case. David Lieberthal, Chicago.

Eczema. Henry G. Anthony, Chicago.

The Consequences of Lupus Vulgaris of the Ear. A. Ravogli, Cincinnati.

An Unsolved Postmortem in Syphilis. A. H. Ohmann-Dumesnil, St. Louis.

Aids to Accuracy and Efficiency in Radiotherapy. Henry G. Piffard, New York City.

Exhibition of Wax Models Cases of Leprosy. F. R. Day, Honolulu.

Endothelioma. William S. Gottheil, New York City.

Generalized Multiple Pigmented Sarcoma Originating in the Skin. William Frick and Frank J. Hall, Kansas City, Mo.

Myomata Cutis. M. L. Heidingsfeld, Cincinnati.

The Cure of Psoriasis. L. Duncan Bulkley, New York City.

Some Conditions of the Skin in Which the High Frequency Spark is Efficacious. Charles W. Allen, New York City.

A Record of Some Unusual Cases. William S. Gottheil, New York City.

Papers will also be read by Drs. Ludwig Weiss, New York City, and Jay F. Schamberg, Philadelphia.

SECTION ON PHARMACOLOGY AND THERAPEUTICS.

CHAIRMAN, THOMAS F. REILLY, NEW YORK CITY; SECRETARY, C. S. N. HALLBERG, 355 DEARBORN STREET, CHICAGO.

The Therapeutic Uses of Thyroid Preparations. Oliver T. Osborne, New Haven, Conn.

The Pharmacology of Digitalis and Its Principles. Robert A. Hatcher, New York.

The Prevention and Cure of Relapsing Fever. Frederick G. Novy, Ann Arbor, Mich.

The Back Swing of the Pendulum. James N. Butler, New York.

The Treatment of Asthma. Delancey Rochester, Buffalo, N. Y.

Normal Peristalsis of the Stomach and Intestines and the Effects of Certain Drugs on It. Results of Experimental Work. F. Pfaff and L. Nelson, Boston.

The Value of Predigested Food Preparations. A. L. Benedict, Buffalo, N. Y.

The Diet in Albuminuria, a Clinical and Experimental Study. Heinrich Stern, New York.

Prescribing versus Dispensing. M. Howard Fussell, Philadelphia.

Methyl-thionin Hydrochlorid in Inoperable Cancer. A. Jacobi, New York.

The Use of Eucalyptus in Actinomycosis and Filariasis. Glentworth Butler, Brooklyn.

Statue of the "Minute Man" at Concord.

Solanin. William F. Waugh, Chicago.
Discussion to be opened by G. F. Butler, Chicago.

Dietetic Treatment of Diabetes Mellitus. Max Einhorn, New York.
Discussion to be opened by J. C. Hemmeter, Baltimore.

Suggestions as to the Revision of the U. S. P. and a Plea for Strong Medical Representation. Martin I. Wilbert, Philadelphia.

The National Formulary in Its Attitude to Pharmaceutical Proprietaries. C. Lewis Diehl, Louisville, Ky.

The Chemistry of the Organic Silver Compounds. W. A. Puckner, Chicago.
Discussion to be opened by Solomon Solis-Cohen, Philadelphia.

The Internal Treatment of Skin Diseases. C. H. Bangs, Lynn, Mass.

Palatable Prescribing. Herman Sheffield, New York.

The External Preparation of the U. S. Pharmacopeia VIII. C. S. N. Hallberg, Chicago.

A Novel Method of Using Strychnin and Hydrastin, Particularly in Vesical and Sexual Weakness. William J. Robinson, New York.

The Quinin Treatment of Cholera. Erskine B. Fullerton, Columbus, Ohio.

Addenda to Therapeutic Measures in Certain Forms of Nephritis. E. M. Johnson, Boston.

Methods and Description of Treatment in a Tuberculosis Dispensary. Edward O. Otis, Boston.
The Bad Results of the Nauheim Treatment. Morris Manges, New York.
Nostrums: Fraudulent Methods of Exploitation. Lyman F. Kebler, Washington, D. C.

Symposium on the Roentgen Rays.

Therapeutic Uses and Dangers. Charles Lester Leonard, Philadelphia.
Application in Treatment of Superficial Lesions. Russell H. Boggs, Pittsburg, Pa.
Treatment of Malignant Disease. Ennion G. Williams, Richmond, Va.
Discussion to be opened by Bray Brown, Boston.

SECTION ON PATHOLOGY AND PHYSIOLOGY.

CHAIRMAN, HENRY A. CHRISTIAN, BOSTON; SECRETARY, WALTER L. BIERRING, IOWA CITY, IOWA.

Experiments on Blood Plates. George T. Kemp, Urbana, Ill.
Motor Activities of the Alimentary Canal After Splanchnic and Vagus Section. W. B. Cannon, Boston.
Address in Physiology. Max von Frey, Würzburg, Germany.
Albumins in Urine. T. W. Hastings, New York.
Urine in Diabetes. Mortimer Warren, New York.
Conditions Under Which Dextrose Appears in the Urine During Experimental Ether Anesthesia. Holmes C. Jackson, Albany, N. Y.
Clinical Report of Examination of Urines Excreted Before and After Ether Anesthesia, Together with an Analysis of the Causes of the "Pseudo" Reduction in Fehling's Test. H. E. Robertson and C. W. L. Hacker, Albany, N. Y.
The Physiology and Pathologic Relation Between Phosphoric and Uric Acids. G. W. McCaskey, Fort Wayne, Ind.
The Elimination of Creatinin, Uric Acid and Phosphorus. Holmes C. Jackson and K. D. Blackfan, Albany, N. Y.
Lactic Acid in Metabolism. Graham Lusk, New York.
A Problem in Physiologic Chemistry. Wm. J. Gies, New York.

Harvard Hall and the Johnston Gateway, at the entrance of Harvard College Yard.

Chairman's Address: Recent American Work in Pathology and Physiology. Henry A. Christian, Boston.
A Study of Acute Leptomeningitis (Streptococcus Pyogenes). E. E. Southard and R. R. Stratton, Boston.
Study in Meningococcus Infections. D. J. Davis, Chicago.
Ehrlich's Theory of Immunity Regarded from the Standpoint of His Experiments. F. P. Gay, Boston.
Lantern Slide Demonstration. (a) Spirillum Obermeieri; (b) Bird Malaria; (c) Insect Trypanosomes. F. G. Novy, Ann Arbor, Mich.
Tuberculosis of an Adenomyoma of the Uterus. R. M. Pearce and J. L. Archambault, Albany, N. Y.
The Blastomyces Group of Organisms. S. B. Wolbach, Boston.
Melanotic Carcinoma. Henry Albert, Iowa City, Iowa.
Mouse Tumors. E. E. Tyzzer, Boston.
A Study of Bone Marrow in the Terminal Stages of Acute Infections. Warfield T. Longcope, Philadelphia.
Cause of Fatigue in Certain Pathologic States. Frederic S. Lee, New York.
The Treatment of Emaciation. L. Breisacher, Detroit.
Experiments on Venous Blood Pressure. Henry Sewall, Denver.
A Physician's Creed, Past and Present, as to the Physiology of the Heart. Wesley Mills, Montreal, Canada.
Lantern-Slide Demonstration of Ultra-Violet Photomicrography. H. C. Ernst, Boston.
The Bacteria of Scarlatinal and Normal Throats. G. F. Ruediger, Chicago.
Studies on Phagocytosis. D. H. Bergey, Philadelphia.
The Cause of Sudden Death Following the Injection of Horse Serum. M. J. Rosenau, Washington.
Studies in Experimental Phagocytosis. Joseph McFarland, Philadelphia.
A Study of Blood in Banti's Disease Before and After Splenectomy. W. L. Bierring and Anfin Egdahl, Iowa City, Iowa.
Relation of Clinical Pathology to the Actual Practitioner. Louis F. Bishop, New York.
An Improved Operative Method of Forming an Experimental Accessory (Pawlow) Stomach on the Dog. John C. Hemmeter, Baltimore.

Studies in Physiology and Experimental Medicine by Winfield S. Hall and Associates.

(a) The Normal Temperature and Closed Inguinal Fold as Compared with the Rectal Temperature. A. H. Parks, Chicago.

(b) How to Detect Abdominal Hemorrhage. H. S. Hollenbeek, Chicago.

(c) Will Blood in the Peritoneal Cavity be Best Absorbed When Left in Clot or When Dissolved in Physiologic Saline Solution? M. Jampolis, Chicago.

(d) Normal and Pathologic Physiology of the Vagus Nerve. R. J. Pickard, Chicago.

Specific Therapy in Typhoid Fever. Mark W. Richardson, Boston.

Pathologic Findings in Two Cases of Mycosis Fungoides. Samuel T. Orton and Edwin A. Locke, Boston.

A paper will also be read by Dr. Alfred Stengel, Philadelphia, the title of which is not received.

PROGRAMS FOR THE GENERAL MEETINGS.

Opening Meeting.

TUESDAY, JUNE 5, 1906, IN MECHANICS HALL.

9:30-10:30 a. m.—Music.

10:30 a. m.—Call to order by President, Lewis S. McMurtry, Louisville, Ky.

Addresses of Welcome:

President Eliot of Harvard University.

President A. T. Cabot of the Massachusetts Medical Society.

Governor Curtis Guild of Massachusetts.

Mayor John F. Fitzgerald of Boston.

The report of the Committee of Arrangements, Dr. Herbert L. Burrell, Chairman.

Revere Beach Reservation. One of the popular seashore resorts which are a part of the Metropolitan Park System. "Wonderland," an amusement enterprise which will rival Coney Island, will be opened on the 30th of May.

Joint Session Medicine and Pathology.

Bacteriology of Pleural Effusion. Lewis W. Ladd, Cleveland, Ohio.

Cytology of Pleural Effusions. Percy Musgrave, Boston.

Introduction and installation of the President-elect, Dr. William J. Mayo, Rochester, Minn.

Annual address of the President.

Adjournment.

Music.

Second General Meeting.

Tuesday Evening, June 5, 7:30 p. m.

The Second General Meeting will be held Tuesday evening in Jordan Hall.

At this meeting the Oration on Medicine, by Dr. F. C. Shattuck of Boston, and the Oration on Surgery, by Dr. Joseph D. Bryant of New York, will be delivered.

Third General Meeting.

Wednesday Evening, June 6, 7:30 p. m.

The Third General Meeting will also occur in Jordan Hall. At this meeting the Address on State Medicine, by Dr. W. H. Sanders of Montgomery, Ala., will be delivered.

OTHER SOCIETIES.

Some Other Medical Bodies to Meet in Boston the Week of the Session.

At or about the time of the session of the American Medical Association the following societies will also hold their meetings in Boston:

Association of United States Pension Examining Surgeons

American Academy of Medicine.

American Gastro-Enterological Association.

American Neurological Association.

American Association of Life Insurance Examining Surgeons.

American Urological Association.

American Medical Editors' Association.

And a number of others, of which the Committee of Arrangements has, as yet, received no notice.

Historic Boston.

A BRIEF DESCRIPTION OF THE MEETING PLACE AND ITS POINTS OF INTEREST.

The selection of Boston as the meeting-place of the American Medical Association in 1906 ensures such a multitude of attractions that already the gathering bids fair to surpass in popularity and in attendance all previous sessions of the Association.

On all sides objects of historical and educational interest will attract the visitor's attention. From the days of the Pilgrim Fathers, until after the Revolution, the Old Colony of Massachusetts was the scene of action for many events which make the history of our country. Here Adams, Franklin, Hancock, Warren and Paul Revere gave each his service to the cause of freedom, and here on the battle-fields of Lexington, Concord and Bunker Hill flowed the blood of the patriots in which our independence was baptized.

As a center of educational and literary achievement Boston has long borne the title of the "Athens of America." It has been the home of our greatest poets, and of many of our most distinguished writers. Memories of Lowell, Longfellow, Holmes, Emerson and Whittier are again and again brought to mind by the scenes that gave them inspiration.

The Boston Art Museum, Copley Square. Special facilities for visiting the Museum will be provided for the members of the Association.

In Cambridge, across the historic Charles River, is Harvard College; that city within a city; where the ivy-covered brick buildings with their revolutionary memories look down through the shades of the elm trees on the green sward of the college yard. The development of Harvard College to its present position as the greatest of the universities of the western world has involved the construction of many splendid buildings, covering a great extent of territory, in Cambridge, Boston, Brookline and other places near at hand, and of these the new medical school buildings are the most recent and most glorious example. This magnificent group of marble buildings, dedicated to the advancement of medical science, and equipped with every facility for instruction and for research, will be thrown open for the first time on the 5th of June for the reception of the members of the American Medical Association, and here the greater number of the section meetings will be held.

It is not on Harvard University alone, however, that Boston is dependent for her reputation in matters educational. The Massachusetts Institute of Technology holds a preëminent position among schools of applied science; the public school system of Boston is a model for many cities, and the Perkins Institute for the Blind, and the School for Crippled and Deformed Children are noted examples of schools for special education.

To the medical profession Boston will always be a city of peculiar interest. The names of Warren, Jackson, Bigelow and Holmes are identified with the early progress of medical science in this country, and the Harvard Medical School, from its beginning in Harvard Hall in Cambridge, to present magnificent accommodations in the new school buildings at Longwood, forms no small part of the history of medicine in America. It is the hospitals of Boston, however, which have contributed most generously to her fame in medicine. They have always been closely associated with her medical schools and they have provided clinical instruction to countless students. The Massachusetts General Hospital has stood for nearly a century as a center for instruction and research in medicine and surgery. In the old operating room under the dome of this hospital, in 1846, Morton first gave to the world the demonstration of surgical anesthesia by the inhalation of ether vapor. The City Hospital, with its splendid department for infectious diseases and its relief station in the down-town district for the care of accident and emergency cases, is a unique example of a Municipal Hospital which has been kept free from the abuses of political control by the enlightened policy of its trustees. The Carney Hospital in South Boston, the Children's Hospital, the Boston Lying-in Hospital, the Infants' Hospital, the Boston Dispensary, the Massachusetts Eye and Ear Infirmary, and many of the smaller institutions will also throw open their doors to members of the Association, and in many cases special programs of demonstrations and operations will be given during the session.

The Boston Medical Library, with its handsome building on the Fenway, its collection of medical books and pamphlets, second only in this country to the library at Washington, and its many relics and treasures in the way of letters, manuscripts, medals and pictures, represents the harmonious devotion of generations of medical men to the common interests of their profession. The spacious halls of the library building serve as meeting places for many of the medical societies of Boston, and at the time of the session of the Association will be set apart for the deliberations of the House of Delegates. The officers of the Boston Medical Library have extended a cordial invitation to the members of the American Medical Association to visit the library during the session and to inspect its valuable collection of books, medals and medical souvenirs.

In the hospitals of Boston and in the laboratories of the Harvard Medical School a complete series of courses of instruction in all the branches of medical science is given every year. The courses which are given during the summer months are intended primarily for the instruction of graduate students, and many members of the Association are already planning to avail themselves of this opportunity to pursue the study of their special subjects by prolonging their visit in the city, or

by establishing themselves with their families at one of the many seashore resorts which are close at hand.

To the stranger in Boston the places of interest are so numerous and embrace such a variety of different subjects that a choice must be made to suit the individual. Opportunities will be given to visit the different places of historic interest under the leadership of competent guides provided by the Committee of Arrangements. The Old State House, Faneuil Hall, Kings Chapel and Old South Church, the Granary Burying Ground, the Common, and many other historic spots may thus be seen. Special facilities will also be given to the members of the Association and their guests to enjoy the treasures of the Museum of Fine Arts, and the wonderful mural paintings of Abbey, Sargent and Chavannes in the Boston Public Library.

The Navy Yard at Charlestown will be thrown open to the members of the Association, and special facilities will be provided for the inspection of its many points of interest. Here the historic frigate *Constitution* lies at rest after the many years of service which gained for her the title of "Old Ironsides." At the time of the session a number of modern warships from the North Atlantic Squadron will be stationed here.

For the benefit of the ladies who will accompany the members of the Association a special series of excursions and amusements will be arranged during the hours of the section meetings. There will be trolley rides to Cambridge, Lexington, Concord, and other places of interest in the vicinity of Boston, and automobile and coaching trips through the wonderful Metropolitan Park System which surrounds the city on every side. Sea bathing may be enjoyed at Revere Beach and Nantasket, the seashore resorts which form a portion of the Park System, or excursions may be made by steamboat down the harbor and along the shores of Massachusetts Bay, to Nahant and Salem, or to Plymouth and Cape Cod. No one need hesitate to bring his wife with him to the Boston session for fear that time will hang heavy on her hands. A committee of Boston ladies has been formed to take in charge the arrangements for the comfort of the visiting ladies, and to provide for their entertainment. A rest room will be set apart for the ladies at the general meeting-place of the Association, where everything will be provided that can contribute to their comfort and convenience.

Longfellow House in Cambridge, the home of the poet Longfellow.

It must not be forgotten that Boston stands at the gateway of the greatest summer playground of the country. Expeditions to the coast resorts of the north or south shores of Massachusetts, to the rugged coast of Maine, or to the woods and hills of the White Mountains, can easily be arranged. There are undoubtedly many members of the Association who will make the Boston session but an incident in a vacation for themselves and their families among the mountains or beside the sea. The Committee on Transportation has succeeded in securing special privileges in the way of an extension of time during which the return tickets will be accepted by the railroads, and many will avail themselves of these advantages. To those who wish to go abroad for their vacation the opportunity is also given by many steamship lines which run from Boston to England and the Continent.

The entertainments which will be offered to the members of the Association and to the ladies and guests who may accompany them are on a most extensive scale. The invitations to the American Medical Association to come to Boston for its session of 1906 were given by the Massachusetts Medical Society and the Harvard Medical School. These invitations, however, have received the unanimous support of the people of New England. Not only by giving financial assistance, but by the expenditure of a large amount of thought and time and trouble the members of the medical profession, the ladies of Boston, and many public spirited men who are not members of the profession, have joined in the preparations for this great convention.

On Tuesday, Wednesday and Thursday afternoons the grounds of the new Harvard Medical School buildings will be devoted to the entertainment of the visitors. There will be music in the central court, and tea and light refreshments will be served by the young ladies of Boston on the terraces. Here the members who have been attending the meetings of their sections in the halls and amphitheaters of the different buildings will spend a restful hour with their friends or wander through the long corridors and spacious laboratories.

On Wednesday evening a reception and promenade concert will be given to the President and to the members and guests of the Association, by the medical profession of New England. This reception will be held in Mechanics Hall, where many thousands of guests can be accommodated. A special attraction which is promised is the singing of a trained chorus of one hundred physicians, which will probably be unique in the annals of the Association.

To complete the arrangements for the comfort and convenience of the members who attend the 1906 session, a special "Guide Book to Boston" has been prepared expressly for this occasion and will be issued gratuitously to every member on registration, together with the official program and the unique and beautiful members' badge which has been designed for the Boston session. The Guide Book contains about two hundred pages and is profusely illustrated with views of historical and modern interest. It will provide information concerning the many places of historical interest in Boston and its suburbs, and special attention has been devoted to hospitals and other places of interest to the medical profession. Four maps and a number of lists of hotels, theaters, restaurants and recreation places will be included. It is hoped that this Guide Book may serve to make the visit in the city more enjoyable, and that it may also constitute an agreeable souvenir of the Boston session of the American Medical Association.

TRANSPORTATION.

Favorable Railroad Rates Secured from All Parts of the United States—Sight-Seeing Opportunities.

The Committee on Transportation of the American Medical Association makes the following announcement:

Arrangements for reduced rates on railroad transportation for the Boston session of the American Medical Association have been secured from nearly all of the passenger associations of the country. These rates will vary according to the different starting points, and the arrangements for each district will be announced in detail. It is hoped, however, that a rate of approximately a single fare, plus a fee of from 25 cents to $1, may be obtained for the round trip, with return extension privileges at a further expense of $1, up to June 30, from all important points.

Satisfactory and complete arrangements will be made at Mechanics Hall, Boston, for the validation of railroad tickets for members of the Association.

JOHN C. MUNRO, Chairman.

NEW ENGLAND PASSENGER ASSOCIATION.

(Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.)

The New England Passenger Association announces: Within a radius of one hundred and fifty miles or less, convention rates. Between the one hundred and fifty miles and the termini (including the termini) of the New England Passenger Association, fare one way, plus 25 cents, for the round trip. No rate to be less than the convention basis applied at the one hundred and fifty mile radius. Tickets to be sold and good going in New England June 2-8 inclusive, good returning June 3-11 inclusive.

An extension of final return limit to June 30, 1906, inclusive on all tickets will be granted, provided they are deposited with the joint agent not later than June 11 and a fee of $1 paid at time of deposit.

On tickets sold from Pacific Coast points by lines in Trans-Continental Passenger Association an extension of final return limit to leave Boston not later than midnight of Aug. 31, 1906, will be granted, provided tickets are deposited with joint agent not later than June 11 and a fee of $1 paid at the time of deposit, and provided further that all other joint agency requirements, form of ticket, etc., are complied with. Further details and form of ticket to be announced later.

The Old State House, State Street, now a museum of Colonial antiquities.

TRUNK LINE ASSOCIATION.

(New York, New Jersey, Pennsylvania, Delaware and West Virginia.)

This association authorizes one first-class fare, plus $1, for the round trip; tickets to be sold and good, going, June 1 to 6; returning, leaving Boston to June 11 inclusive. The extension of return limit is to be under same conditions as above.

CENTRAL PASSENGER ASSOCIATION.

(Ohio, Michigan, Indiana and part of Illinois.)

This association grants the same rates and same conditions of extension. Ironclad tickets to be sold June 2, 3, 4 and 5, passengers not to reach gateways of the New England Passenger Association earlier than June 2, nor to arrive in Boston later than June 8. Tickets via New York allow stopover there.

The Richelieu & Ontario Navigation Company advise that on presentation of rail excursion ticket to agent of R. & O. N. Co. at Toronto, or to purser on board steamer, same will be accepted on payment of following arbitraries: Toronto to Montreal, $6.50; Kingston or Clayton to Montreal, $3.50.

TRANS-CONTINENTAL PASSENGER ASSOCIATION.

(Pacific Coast States.)

Members from Pacific Coast may avail themselves of either or both of the following sets of rates and conditions:

First: Account of Knights of Columbus, New Haven, Conn., June 3-9, 1906, excursion tickets will be sold from California May 25, 26 and 27, and from North Pacific Coast points and Spokane May 24, 25 and 26, to New Haven, Conn., and return, with going transit limit June 9, 1906, and final return limit Aug. 31, 1906, at the following rates and on the following conditions.

Rates from California via direct routes to be made on basis of one thirty-day first-class fare; to points east of eastern terminals of T. C. P. A., rates to be made on basis of one thirty-day first-class fare to T. C. P. A. eastern terminals, added to excursion fares authorized east thereof.

Examples of thirty-day fares from California.

To Chicago	$72.50
To St. Louis	67.50
To Memphis	67.50
To New Orleans	67.50
To Omaha	60.00
To Kansas City	60.00
To St. Paul	70.00

Rates from North Pacific Coast points via direct routes to be made on basis of $10 higher than the lowest first-class limited fare; to points east of eastern terminals of T. C. P. A., rates to be made on basis of $10 higher than the lowest first-class limited fare to T. C. P. A. eastern terminals, added to excursion fares authorized east thereof.

Examples of rates from North Pacific Coast common points: Portland, Oregon, Seattle and Tacoma, Washington, Vancouver and Victoria, B.C.:

To Chicago	$71.50
To St. Paul	60.00
To St. Louis	67.50
To Omaha	60.00
To Kansas City	60.00

Rates from Spokane, Washington to St. Paul, $52.50; Missouri River common points, Omaha to Kansas City inclusive, $52.50; to St. Louis, $60; to Chicago, $64.

Such rates to apply over same diverse routes west of T. C. P. A. eastern terminals, Chicago, St. Louis, Memphis, New Orleans and St. Paul, as the direct routes nine months' tourist rates apply. East of said terminals routing to conform to authority extended by the eastern lines and promulgated by chairman T. C. P. A.

For tickets from California via direct route one way, and via Portland, Ore., in opposite direction (using either Shasta Route or S. F. & P. S. S. Co. between Portland and San Francisco), rates from San Francisco, Tracy, Lathrop, Stockton, Sacramento, Redding and their intermediates, will be $13.50 greater than rates for tickets via direct routes both ways.

Tickets to be good going from starting point only on date of sale. East of T. C. P. A. eastern terminals tickets to be limited going and returning in conformity with regulations prescribed in eastern lines.

If members avail themselves of above they will require to rebuy at New Haven to Boston and return to New Haven, and their trip to and from Boston should be regulated according to the conditions of the New Haven tickets.

Second: Regular nine months' tourist rates, approximating

two cents per mile in each direction, or about one fare and one-third for the round trip, are in effect daily from California and North Pacific Coast common points to Chicago, Kansas City, Mo., Memphis, Minneapolis, New Orleans and St. Louis.

The following are examples of the rates over direct routes from California and North Pacific Coast common points:

From.	To.	Rate.
California and North Pacific Coast and common points	Missouri River points named and return	$ 90.00
California	St. Paul and return	105.00
North Pacific Coast points	St. Paul and return	90.00
California and North Pacific Coast common points	Chicago and return	110.00
California and North Pacific Coast common points	St. Louis and return	102.00
California	Memphis and return	102.00
North Pacific Coast points	Memphis and return	111.60
California	New Orleans and return	102.00
North Pacific Coast points	New Orleans and return	117.00

Proportionately higher rates are made to New York, Philadelphia, Washington, Boston, Montreal, etc.

The nine months' rates apply only to what are known as the eastern gateways of the association, such as those named. Agents will advise as to the eastern points named above to which it will be most advantageous to purchase nine months' tickets in rebuying to place of meeting. These nine months' tourist tickets are sold only from California, Nevada, Oregon, Washington, and west of and including Mission Junction B. C.; also from what are known as Kootenay common points, namely, Nelson, Rossland, Sandon, Kaslo and Grand Forks, B. C.

Reports from the southern passenger associations will be published later.

For special trains, see about the eighth page following this.

THE BOSTON SESSION.

Announcement of Headquarters and List of Hotels, with Prices.

While Boston is liberally supplied with hotels of the first class, many of which are in the immediate neighborhood of the meeting places selected by the Committee of Arrangements for the annual session of the American Medical Association, June 5-8, 1906, the Committee on Hotels deems it wise to bring to the notice of those expecting to attend, the advisability of securing accommodations well in advance, since the time chosen for the session is not far from the commencement days of Harvard, Tufts, Boston University, and the Massachusetts Institute of Technology, and during the same week it is expected that Christian Scientists to the number of some thousands will visit Boston to open a new "temple." The committee urges members of the Association, therefore, not to postpone too long the securing of rooms, and it engages to act in the matter for all who will make their desires known; but the final engagement must be made in all cases by the applicant directly with the hotel managers.

In addition to the hotels included in the list below are many of perfect respectability, but not of such excellence as to entitle them to be rated as of the first class.

Bunker Hill Monument, Charlestown.

LIST OF HOTELS WITH PRICES.

The following are the hotels included in the first class, with terms, and the number for whom it is estimated that there will be accommodations at the time of the session:

ADAMS HOUSE, Washington Street. European plan. Single rooms, without bath, $1.50 to $4 per day; with bath, $2.50 to $4. All rooms cost $1 additional when occupied by two persons. Accommodations, 200.

AMERICAN HOUSE, Hanover Street. European plan, $1 to $4 per day. Accommodations, 200.

BELLEVUE, Beacon Street. European plan. Single rooms, $1.50 to $2.50 per day; with private bath, $3 to $5. Double rooms, $2 to $3 per day; with private bath, $4 to $6. Accommodations, 150.

BRUNSWICK, Boylston Street. American plan. Rooms, without bath, $5 per day; with bath, $6. Accommodations, 300.

The Brunswick has been chosen headquarters for the Section on Surgery and Anatomy.

BUCKMINSTER, Commonwealth Avenue and Beacon Street. American and European plans. American: $4 per day, European, $2. Accommodations, 40.

CARLTON CHAMBERS, 1138 Boylston Street. European plan. Single rooms, without bath, $1.50 per day; with bath, $2. Double rooms, without bath, $3, per day; with bath, $4. Accommodations, 50.

CECIL, Washington Street. European plan. Single rooms, $1 and upward per day; for two persons, $2 and upward; with bath, $1.50 to $4. Double rooms, with bath, $2.50 to $5. Accommodations, 75.

COMMONWEALTH CHAMBERS, Bowdoin Street. European plan. Rooms, with hot and cold water and free public bath, $1 and $1.50 a day for one person; $2 and $2.50 for two persons. Rooms with private bath, $1.50 to $2 for one person, $2 to $2.50 for two persons. Accommodations, 175.

COPLEY SQUARE HOTEL, Huntington Avenue and Exeter Street. European plan. Rooms, $1.50, without bath, to $3 and $4 with bath, according to number of persons. Accommodations, 200.

The Copley Square has been selected as headquarters for the Sections on Obstetrics and Diseases of Women and on Pathology and Physiology.

CRAWFORD HOUSE, Scollay Square. European plan. Single rooms, with two persons in a room, $2 to $3 per day. Accommodations, 75.

ESSEX, Atlantic Avenue. European plan. Single rooms, $1.50 and upward; with bath, $2 and upward.

HEMENWAY CHAMBERS, Westland Avenue. European plan. Single rooms, with bath, $1.50 to $3 per day. Double rooms, with bath, $2.50 and $4.50. Three rooms, with bath, $4 and upward. Accommodations, 75.

LANGHAM, Worcester and Washington streets. European and American plans. European plan, $1 and upward per day. American plan, single rooms, $2 per day; single rooms, with two persons, $3. Accommodations, 100.

LENOX, Exeter and Boylston streets. European plan. Single room, without bath, $2.50, to $3 per day; with bath, $4 and $5. Accommodations, 50.

The Lenox has been chosen as headquarters for the Section on Ophthalmology.

LEXINGTON, 13 Boylston Street. European plan. Single rooms, $1.50 to $2 per day; for two persons $2.50 to $3. Accommodations, 75.

NOTTINGHAM, Copley Square. European plan. Single room, $1 and $1.50 per day; with bath, $2; two persons, without bath, $2 and $2.50; with bath, $3. Accommodations, 150.

The Nottingham has been selected as headquarters for the Sections on Diseases of Children and on Cutaneous Medicine and Surgery.

OXFORD, Huntington Avenue. American and European plans. Singue rooms, $1, $1.50 and $2 per day. Accommodations, 100.

The Oxford has been chosen as headquarters for the Section on Pharmacology.

PARKER HOUSE, School Street. European plan. Single rooms, without bath, $1.50 to $3 per day; for two persons, $2.50 to $4.50. Single rooms, with bath, $2.50 to $4; for two persons, $4 to $6. Accommodations, 75.

QUINCY HOUSE, Brattle Street. European plan. Rooms, $1 per day and upward. Accommodations, 300.

REVERE HOUSE, Bowdoin Square. European plan. Single rooms, $1 per day; for two persons, $1.50; with bath, $2; for two persons, $3, with parlor and bath, for two persons, $5. Accommodations, 200.

SOMERSET, Commonwealth Avenue. European plan. Single rooms, $2.50 per day; with bath, $3. Double rooms, $3.50; with bath, $4. Accommodations, 100.

The Somerset has been chosen as headquarters for the Section on Practice of Medicine.

THORNDIKE, Boylston Street. European plan. Single rooms, with detached bath, $1.50 per day and upward (a few single rooms at $1.00); double rooms, with detached bath, $2 and upward; single, with connecting bath, $2 and upward; double, with connecting bath, $3 and upward; suite of two chambers and bath (or parlor, chamber and bath), $5 and upward. Accommodations, 125.

The Thorndike has been chosen as the headquarters for the Sections on Hygiene and Sanitary Science and on Laryngology and Otology.

TOURAINE, Boylston Street. European plan. Single room, without bath, one person, $3 per day; two persons, $4.50; double, with bath, one person, $4 to $6; two persons, $5.50 to $8. Accommodations, 40.

The Touraine has been chosen as the headquarters for the Section on Nervous and Mental Diseases.

UNITED STATES HOTEL, Beach Street. American plan; two in a room, $2.50 per day and upward for each person. European plan, two in a room, $1.00 and upward, for each. Accommodations, 150.

VENDOME, Commonwealth Avenue. American plan. Single rooms, without bath, $5 per day; with bath, $6. Accommodations, 200.

The Vendome has been chosen as the headquarters for the General Officers.

VICTORIA, Dartmouth Street, corner Newbury. European plan. Single rooms, with use of bath, $2 per day and upward; with private bath, $3.50; double, with use of bath, $3 and upward; with private bath, $4.50 and upward. Accommodations, 50.

WESTMINSTER, Copley Square. European plan. Single rooms, $2 per day; with two persons, $3 and upward; three-room apartments, $9 to $12. Accommodations, 50.

The Westminster has been chosen as the headquarters for the Section on Stomatology.

YOUNG'S HOTEL, Court Square. European plan. Single rooms, without bath. $1.50 to $2 per day; for two persons, $2.50 to $4; with bath, $2.50 to $4.50; double room with bath, $4 to $7.

The Boston Public Library, Copley Square. A reception to the members of the Association will be given by the Trustees of the Library, and special facilities will be provided daily for the benefit of the members of the Association.

The following hotels are within a few minutes' walk of the general meeting places; the others are not more than 15 minutes' distance by trolley cars:

Brunswick.
Carlton Chambers.
Copley Square.
Hemenway Chambers.
Lenox.
Nottingham.
Oxford.
Somerset.
Thorndike.
Touraine.
Vendome.
Victoria.
Westminster.

The following hotels have been selected as headquarters for the general officers and for the sections:

General Officers	Vendome.
Practice of Medicine	Somerset.
Obstetrics and Diseases of Women	Copley Square.
Surgery and Anatomy	Brunswick.
Hygiene and Sanitary Science	Thorndike.
Ophthalmology	Lenox.
Diseases of Children	Nottingham.
Stomatology	Westminster.
Nervous and Mental Diseases	Touraine.
Cutaneous Medicine and Surgery	Nottingham.
Laryngology and Otology	Thorndike.
Pharmacology and Therapeutics	Oxford.
Pathology and Physiology	Copley Square.

ACCOMMODATIONS NEAR OCEAN.

Many members of the Association from the interior states, away from the ocean, may be glad to learn that arrangements have been made, if a suitable number can be got to take rooms, for from three to five hundred members at Winthrop Beach, directly on the ocean, and thirty minutes' ride from Boston by boat and rail or by trolley. The rates will be on the American plan, from $2 to $3.50 a day, according to accommodation, but the secretary of the Hotel Committee must be notified at the earliest practicable moment by those members who wish to obtain these accommodations, for these houses are not ordinarily opened until later in the season, and will have to be opened especially for this occasion. This is an excellent opportunity to enjoy the sea air and view, and yet to be within a few minutes travel of the Association headquarters in the city.

BOARDING AND LODGING HOUSES.

The Committee on Hotels and Transportation has secured a list of 521 private houses where board and lodging can be secured. Many of these houses are in the neighborhood of the general meeting places. These, and many more still to be secured, will soon have been critically inspected and rated. The committee will gladly act for those who desire its assistance in securing rooms and board in these houses. A list of them with rates will be furnished in a later number of THE JOURNAL.

RESTAURANTS.

By reason of the fact that many thousands of persons, residing elsewhere, conduct their business in Boston, the city is unusually well supplied with restaurants, which are equal to all possible demands on them. These are situated in all parts of the city. Naturally the greater number of them are located in the business section, but there are many in the neighborhood of the general meeting places. Ample accommodations will, therefore, be provided in a sufficient variety to suit all.

CHARLES HARRINGTON, Chairman.
DAVID D. SCANNELL, Secretary, 8, the Fenway.
Committee on Hotels and Transportation.

MEETING PLACES.

Ample and Comfortable Quarters Provided for the Various Meetings and Exhibits.

As will be seen by a glance at the following list, the accommodations selected for the meetings of the different sections, for the general sessions of the Association, and for the exhibits, will be unusually comfortable and convenient of access from the railroad stations and the hotels and headquarters of the different sections.

Mechanics Hall, which will be the central meeting place, and which will contain the Bureau of Information and Registration, Postoffice, Telegraph Office, Railroad and Theater Ticket Offices, the Commercial Exhibit, and a special rest room for ladies, is situated on Huntington Avenue, close to the railroad stations and the principal hotels. Here, also, the opening session will be held on Tuesday morning and a reception and promenade concert on Wednesday evening. From this point the other meeting places are all readily accessible; distributed as they are along Huntington Avenue from its junction with Boylston Street at Copley Square to Longwood Avenue, where the new buildings of the Harvard Medical School will provide accommodations for the Scientific Exhibit and for a number of the section meetings. An extra service of

electric cars, both ways, on Huntington Avenue, will be provided for the accommodation of the members of the association.

The large sections on medicine and surgery will hold their meetings in the halls in the vicinity of Copley Square. The section on Obstetrics and Diseases of Women will meet at Chickering Hall, near Massachusetts Avenue, and the other sections in the lecture rooms of the Tufts College Medical School, a short distance further on, or in the new Harvard Medical School. A special restaurant will be opened at Symphony Hall, Huntington Avenue and Massachusetts Avenue, where members may obtain their lunch without returning to their hotels. Jordan Hall, near Massachusetts Avenue, will be used for the evening sessions on Tuesday and Wednesday, and for the first meeting of the section on Surgery and Anatomy on Tuesday afternoon.

Special luncheon restaurant for the A. M. A. ..... Symphony Hall, Huntington and Mass. ave.

SECTIONS.

Practice of Medicine, Y. M. C. A. Hall, Boylston and Berkeley sts. Wednesday a. m. (Joint Session with Surgery), New Old South Church, Boylston and Dartmouth sts.

Obstetrics and Diseases of Women, Chickering Hall, Huntington ave., near Massachusetts ave.

Surgery and Anatomy, Tuesday p. m., Jordan Hall, Huntington ave., near Massachusetts ave.
Wednesday a. m. (Joint Session with Medicine), New Old South Church, Boylston and Dartmouth sts.
Wednesday, Thursday and Friday p. m., Huntington Hall, Walker Bldg., Boylston st.

Hygiene and Sanitary Science ... Tufts College Med. School, Huntington ave.

Ophthalmology ..... New Harvard Med. School, Longwood ave.

Diseases of Children ..... New Harvard Med. School, Longwood ave.

The State House of Massachusetts, on Beacon Hill, overlooking Boston Common.

MEETING PLACES.

	Halls.	Location.
Opening Session	Mechanics' Hall,	Huntington avenue.
Registration and Bureau of Information		
PostOffice, Telegraph and Telephone		
Railroad and Theater Ticket Offices		
Commercial Exhibit		
Clinical Exhibit		
Public Health Exhibit		
Ladies' Rest Room		
President's Reception		
House of Delegates	Boston Medical Library, Fenway.	
General Sessions	Jordan Hall, Huntington ave.	
Army Hospital Exhibit	Huntington ave.	
Scientific Exhibit	New Harvard Med. School, Longwood ave.	
Afternoon Teas	New Harvard Med. School, Longwood ave.	

Stomatology ..... Tufts College Med. School, Huntington ave.

Nervous and Mental Diseases .... New Harvard Med. School, Longwood ave.

Cutaneous Medicine and Surgery. New Harvard Med. School, Longwood ave.

Laryngology and Otology ..... New Harvard Med. School, Longwood ave.

Pharmacology and Therapeutics .. Tufts College Med. School, Huntington ave.

Pathology and Physiology ..... New Harvard Med. School, Longwood ave.

The Boston Medical Library Building on the Fenway, will be set apart for the House of Delegates, and may most conveniently be reached by electric cars to the corner of Massachusetts Avenue and Boylston Street.

The convenience and comfort of the members of the different sections at their several meeting places will be looked after by special reception committees of Boston members of the Asso-

ciation, who will be on hand during the meetings to provide for any unexpected need that may arise.

Special American Medical Association Restaurants.

NEW MEDICAL SCHOOL RESTAURANT.

Arrangements will be made to install a caterer at the new Harvard Medical School buildings, in order that the members who are in attendance at section meetings in these buildings may obtain their luncheon there if they so desire. A table d'hote lunch, costing about 60 cents, will be served on Tuesday, Wednesday and Thursday from 12 to 2 p. m.

SYMPHONY HALL RESTAURANT.

On Tuesday, Wednesday, Thursday and Friday, Symphony Hall, at the corner of Massachusetts and Huntington avenues, will be open to the members and guests of the Association from 12 to 2 o'clock. Light refreshments, beer and light wines will be obtainable and smoking will be permitted.

ENTERTAINMENTS.

Receptions, Concerts, Entertainments, Excursions and Afternoon Teas for the Pleasure of Visitors.

It is the purpose of the Boston Committee to facilitate the entertainment of the members of the Association and their friends in every way during and after the time of the session. Entertainments will be arranged for members in the afternoon and evenings, and for ladies during the entire time of the session.

The afternoon teas at the Harvard Medical School will be held on Tuesday, Wednesday and Thursday afternoons, from 4 to 6 o'clock. On Tuesday evening, after the evening session in Jordan Hall, a reception will be given to the members of the Association by the trustees of the Boston Museum of Fine Arts in the Museum in Copley Square. The trustees of the Boston Public Library have also invited the members of the Association to a reception in the Library Building to meet the Mayor of Boston on Tuesday evening at 9 o'clock.

On Wednesday evening, at the close of the General session in Jordan, Hall, a reception and promenade concert will be given in Mechanics Hall by the medical profession of New England, to the President, members and guests of the American Medical Association from 9 to 12 o'clock. A light supper will be served and there will be dancing. The Commercial Exhibit will be open during the evening on this occasion.

Professor Rosthorn.

Thursday evening arrangements have been made to reserve the theaters of Boston for the members of the American Medical Association, and special performances will be given in a number of them. The "Pop Concert" at Symphony Hall will also be reserved for the members of the Association on Thursday evening, and an orchestra, composed of members of the Boston Symphony Orchestra, will play popular music. Smoking will be permitted and light refreshments may be obtained.

Boston Public Library.

The trustees of the Boston Public Library extend a cordial invitation to the members of the Association to visit the library at any time between 9 a. m. and 5 p. m. during the meeting. A special collection of pictures of medical subjects and portraits will be on exhibition, and arrangements will be made to send personally conducted parties of visitors over the library at hourly intervals throughout the day.

A reception to the members of the Association will also be given by the trustees on Tuesday evening from 9 to 11 o'clock to meet his Honor, the mayor of Boston.

Seeing Boston.

Walking parties, with competent guides, will be made up every day, at frequent intervals, to conduct visitors through the historical portions of Boston, visiting the old State House, the old Granary Burying Ground, King's Chapel, the old South Church, Faneuil Hall, Paul Revere's house, the old North Church, and other points of interest.

Special "Seeing Boston" cars will leave Park Square at frequent intervals, enabling visitors to obtain a comprehensive view of Boston and its suburbs, visiting the oldest parts of the city, Charlestown, Somerville, Cambridge, Back Bay and Brookline.

Automobile and coaching trips through the Metropolitan Park System may be arranged at the Bureau of Information.

Steamboat Excursions.

Harbor excursions by steamboat may be made to the different places of interest in Boston Harbor and Massachusetts Bay. Bass Point and Nahant, Nantasket Beach, Plymouth, Provincetown and Gloucester offer attractive expeditions.

The steamer *Monitor* will visit the various harbor institutions daily and will carry free the members of the Association to the limit of the capacity of the boat.

The battleships of the United States Navy, stationed at the Charlestown Navy Yard, and the ocean steamers of the Cunard line, in East Boston, will be open for inspection by the members of the Association. Bunker Hill Monument, the receiving ship *Wabash*, the new granite dry dock, the naval museum and the frigate *Constitution* offer other attractions in a visit to Charlestown.

Trolley and Rail Excursions.

Norumbega Park at Riverside, on the Charles river, is reached by electric cars in three-quarters of an hour, and is a popular resort for canoeing, boating, and such amusements.

Sea bathing, "Rhode Island clambakes" and fish dinners are provided at Revere Beach, a part of the Metropolitan Park Reservation, which can easily be reached within an hour's time by rail or trolley. "Wonderland," a great amusement enterprise, which rivals Luna Park at Coney Island, will be open at the time of the session.

Excursions to Plymouth, under the supervision of Dr. Myles Standish, will be arranged for each day of the session, and will prove especially attractive to those who are interested in the history of the early settlement of New England and the landing of the Pilgrims.

Lexington and Concord will be reached by special trolley trips, and Newburyport, Salem and Marblehead by rail.

Visits to New England Colleges.

Special arrangements will be made for visits to the New England colleges. At Harvard College, in Cambridge, guides will be provided by the college authorities, and afternoon tea will be served in Phillips Brooks' house, or the Harvard Union, on one of the days of the meeting.

Radcliffe, Tufts and Wellesley Colleges are within easy reach. Yale, Brown, Dartmouth, Williams, Amherst, Clark and Smith Colleges can be visited in a day, and the University of Vermont, Bowdoin, Colby, and the University of Maine in a slightly longer time.

Clambake and Fish Dinner.

A Rhode Island clambake and fish dinner has been planned for the members of the Association in Crescent Park, Providence, R. I., on Saturday, June 9, the members leaving the south terminal station in the morning by a special train and returning in the afternoon.

Excursions to Other New England Resorts.

At the close of the session excursions to Nantucket Island, Newport, R. I., Isles of Shoals, Mt. Desert, the White Mountains, Plymouth and Gloucester, will be provided, and facilities will be given for the arrangement of trips to the other summer resorts of the New England Coast.

American Medical Association Outing Club.

Among the many pleasant trips out of Boston a nine days' tour in New Brunswick, Nova Scotia, Maine and New Hampshire should be among the most enjoyable. The party will visit for a day or two such resorts as St. John, New Brunswick, Digby, Nova Scotia, Bar Harbor, Maine, and Portsmouth, N. H., and touch for a short time the ports of Portland, Eastport and Lubec. Returning by rail the fine coast scenery north of Boston is seen at its best. The deep-sea fishing trip in Nova Scotia will afford unique sport for those members who reside inland.

Send stamp to Dr. Edward R. Campbell, Bellows Falls, Vt., for booklet describing trip.

Banquets.

The Section on Nervous and Mental Diseases has arranged for its annual banquet. "Smokers" have been arranged for the sections on Ophthalmology and on Laryngology and Otology.

Other special section celebrations are to be arranged.

EXHIBITS.

An Unusually Complete Group of Pathologic, Clinical and Hygienic Expositions.

Commercial Exhibit.

The Commercial Exhibit in Mechanics Hall will be of great interest. The exhibits displayed will be of the highest character, and will include only such as conform to the standards of the American Medical Association. Books, apparatus, instruments and therapeutic agents which will be of interest and value to the profession will be shown. A special exhibit, which it is thought will appeal to many members of the profession, will include motor cars and carriages adapted to physicians' use.

Professor Max Joseph.

Scientific Exhibit.

The Scientific Exhibit, the program of which will be found elsewhere, will be housed in the spacious galleries of the Warren Anatomical Museum, and in the adjacent laboratories at the new Harvard Medical School.

Historical Loan Exhibition of Medical and Surgical Instruments.

As a portion of the Scientific Exhibit, a loan exhibit of medical and surgical instruments of historical interest will be collected for the Boston session. Dr. J. Collins Warren is chairman and Dr. Townsend W. Thorndike is secretary of the committee having this matter in charge.

It is felt that there are many instruments and collections of instruments now obsolete which would have great interest for the medical profession if gathered together and arranged in such a way as to show the evolution of the different instruments to-day in use. It is hoped that the instruments gathered for this meeting may serve as a nucleus for a permanent collection.

With the foregoing object in view, the committee extends to the readers of this article a cordial invitation to co-operate with them, either by advice as to where exhibits may be secured or by loaning those that they may have in their possession.

It is requested of those who send their collections to the exhibition for the session of the American Medical Association that they specify whether they desire to have their collections returned to them at the end of the meeting, or whether they will permit the committee to place them in a permanent collection.

All communications should be addressed to the secretary, Dr. Townsend W. Thorndike, 22 Newbury Street, Boston.

Clinical Exhibit.

A special feature of the Boston session will be the so-called Clinical Exhibit. It is proposed to establish in Mechanics Hall a series of demonstrations of the most recent methods of precision in clinical diagnosis, which may here be studied in active operation. Examinations of the blood, urine, sputum and other fluids, methods of diagnosis, bacteriologic and chemical, the use of the sphygmomanometer, the *x*-ray, cystoscopy and many other methods of diagnosis will be shown. At the hospitals, also, special programs of demonstrations and of operations will be provided during the time of the session for the benefit of the members of the Association.

Public-Health Exhibit.

The Public-Health Exhibit will be one of the utmost interest to the general public, as well as to students of hygiene and sanitary science. At Mechanics Hall a special collection of maps, plans, apparatus and other features of importance in sanitary science will be displayed, and this will be further supplemented by the exhibit of the Massachusetts State Board of Health installed in the Museum of Hygiene at the new Harvard Medical School.

Army Hospital Exhibit.

One of the most interesting and instructive features will be a completely equipped field hospital, which will be sent from Washington especially for the session of the Association by courtesy of the Surgeon-General.

The hospital will be equipped with all of the latest appliances known to medical and surgical science, and will be installed and administered by Company A of the Hospital Corps of the United States Army, under the command of Captain H. L. Gilchrist, assistant surgeon, assisted by First Lieutenant William T. Davis, assistant surgeon. This field hospital will be placed on Huntington Avenue, where it can be conveniently visited by members passing to and from their section meetings. It will cover about five acres of ground and will include among its fifty tents six wards, with a total of 108 beds of the latest design, with mosquito-bar attachment; dispensary and operating rooms; kitchen, mess-tents and administrative offices.

Demonstrations will be given of ambulance and first-aid drills, field exercises, and all of the details of the operation of an army hospital in time of war.

A conspicuous feature of this exhibit will be the compactness and portability of the hospital equipment, and the ease and rapidity with which it can be moved from place to place, or expanded to meet the requirements of an emergency.

COMMITTEE OF ARRANGEMENTS.

General Committee.

Dr. Herbert L. Burrell, Chairman, 22 Newbury Street, Boston.
Dr. Robert B. Greenough, Secretary, 8 The Fenway, Boston.

Dr. George B. Shattuck, Dr. David D. Scannell,
Dr. Frank B. Harrington, Dr. J. Collins Warren,
Dr. Reginald H. Fitz, Dr. John C. Munro,
Dr. Elliott P. Joslin, Dr. Charles S. Minot.
Dr. Charles Harrington, Dr. Wm. T. Porter.

Subcommittees.

COMMITTEE ON FINANCE.

Dr. George B. Shattuck, Chairman; Dr. Frank B. Harrington, Secretary; Dr. James B. Ayer, Treasurer.

COMMITTEE ON SECTION MEETING PLACES, GENERAL EXHIBIT, PRINTING AND PROGRAMS.

Dr. Reginald H. Fitz, Chairman; Dr. Elliott P. Joslin, Secretary.

Subcommittee on Section Meeting Places.—Dr. Horace D. Arnold, Chairman; Dr. Ralph C. Larrabee, Secretary.

Subcommittee on Scientific Exhibit.—Dr. W. T. Councilman, Chairman; Dr. Frank B. Mallory, Secretary.

Subcommittee on Historical Loan Exhibition of Medical and Surgical Instruments.—Dr. J. Collins Warren, Chairman; Dr. Townsend W. Thorndike, Secretary.

Subcommittee on Clinical Exhibit.—Dr. Richard C. Cabot, Chairman; Dr. Edwin A. Locke, Secretary.

Subcommittee on Public Health Exhibit.—Dr. Charles Harrington, Chairman; Dr. George B. Magrath, Secretary.

Subcommittee on Commercial Exhibit.—Dr. Joshua C. Hubbard, Chairman; Dr. R. L. DeNormandie, Secretary.

Subcommittee on Printing, Programs and Guide Book.—Dr. Robert B. Osgood, Chairman; Dr. F. C. Kidner, Secretary.

COMMITTEE ON HOTELS AND TRANSPORTATION.

Dr. Charles Harrington, Chairman; Dr. David D. Scannell, Secretary.

COMMITTEE ON ENTERTAINMENTS, BANQUETS, LADIES.

Dr. J. Collins Warren, Chairman, Dr. J. C. Munro, Secretary.

Subcommittee on President's Reception and Promenade Concert.—Dr. Francis S. Watson, Chairman; Dr. Richard F. O'Neil, Secretary.

Subcommittee on Afternoon Teas.—Mr. J. Grafton Minot, Chairman; Dr. Farrar Cobb, Secretary.

Subcommittee on "Pop Concert" and Symphony Hall Restaurant.—Dr. Samuel J. Mixter, Chairman; Dr. Lincoln Davis, Secretary.

Subcommittee on Banquets.—Dr. John G. Blake, Chairman; Dr. John T. Bottomley, Secretary.

Subcommittee on Theaters.—Dr. Morton Prince, Chairman; Dr. Percy Musgrave, Secretary.

Subcommittee on Excursions.—Dr. Harold Williams, Chairman; Dr. G. W. W. Brewster, Secretary.

Subcommittee on Public Library Reception.—Dr. Thomas Dwight, Chairman; Dr. Samuel Robinson, Secretary.

Subcommittee on New Medical School Restaurant.—Dr. Farrar Cobb, Chairman.

LADIES' COMMITTEE.

Mrs. Roger Wolcott, Chairman; Mrs. John C. Munro, Secretary.

COMMITTEE ON REGISTRATION, BADGES, BUREAU OF INFORMATION.

Dr. Charles S. Minot, Chairman; Dr. Wm. T. Porter, Secretary.

Professor Trendelenburg.

REGISTRATION.

Suggestions and Rules for the Guidance of All Who Will Attend the Session.

The registration department will be near the main entrance to the Exhibition Hall, at Mechanics Building on Huntington Avenue.

For admission to the different section meetings, exhibits and entertainments, it will be necessary for every member of the Association to register his name, and those of his guests, and to obtain the official badges provided by the Committee of Arrangements. *No one will be admitted to any meeting or entertainment without a badge!*

The registration department will be open from 8:30 a. m. to 5 p. m. on Monday, Tuesday, Wednesday and Thursday, June 4, 5, 6 and 7, and on Friday, June 8, from 9 to 10 a.m.

Members are requested to observe the following directions:

1. Each physician desiring to register will fill out a registration card.

2. Each member who has paid his annual dues in full will present his pocket card and this registration card at a window marked "Registration by Receipt."

3. The registration of members who have paid their dues, but who have lost their receipts, will require a moment or two extra time, while the records are consulted.

4. Members who have not yet paid their dues will present registration card and make payment at a window marked "Cash."

5. Each applicant for membership will present his registration card at a window marked "New Members Make Application Here," with a certificate that he is a member in good standing in his state society. [Every such prospective member, however, will save himself delay and annoyance by sending in his application before the session. All such letters should be *mailed not later than May 25* to the American Medical Association, 103 Dearborn Avenue, Chicago, as the records have to be packed and shipped to Boston early.]

6. Each member on registration will receive a badge, a copy of the Official Program, a Guide Book, and such other announcements as may be necessary.

7. The guests of members, either ladies or gentlemen, must be registered by name. A special registration card will be provided, to be filled out for each guest. These cards will be presented at a window marked "Guests," but only after the member has completed his own registration. A guest badge will be issued for each guest registered.

8. Members of the Massachusetts Medical Society, who are not yet members of the American Medical Association, will register their names at a special booth marked "Massachusetts Medical Society," in the entrance to the Exhibition Hall, where they will receive a special badge, admitting them to all meetings of the Association. Members of the Massachusetts Medical Society who are not members of the American Medical Association and who desire to become members may fill out registration cards and present themselves at the window marked, "New Members Make Application Here," referred to above. Certificates of membership in the Massachusetts Medical Society will be provided at this window for all members in good standing, and payment of the annual dues to the American Medical Association alone will be required. All members of the Massachusetts Medical Society are urged to avail themselves of this opportunity.

BUREAU OF INFORMATION.

A Bureau of Information will be maintained at the General Meeting Place in Mechanics Hall, where information with regard to hotels, transportation, registration, meeting places, exhibits, entertainments, theaters, etc., may be obtained. In connection with this bureau, the postoffice of the American Medical Association, telegraph and telephone offices, an office for the sale of railroad tickets for excursions from Boston, and an office for the sale of theater and concert tickets will be maintained. An emergency station, for the care of any members of the Association in need of medical attendance will also be placed in close proximity to the Bureau of Information. A large space will be set apart in the vicinity of the registration booths, where desks and tables will be found, and all the conveniences for a writing room.

POSTOFFICE AND TELEGRAPH.

Mail matter and telegrams addressed in care of the American Medical Association, Boston, will be sent direct to the postoffice in Mechanics Hall. Telegrams and special delivery letters will be forwarded from there to the hotels or other stopping-places of those whose addresses are recorded at the Registration Department or the Bureau of Information.

THE FOREIGN GUESTS.

Many Distinguished Medical Men Will Come from Abroad to Speak at Section Meetings.

The American Medical Association is to be honored by the presence of a number of distinguished guests at the Boston session. Many have already accepted invitations, and of some of these we present brief sketches below. Following is a list of the guests as far as now known:

Geh. Hofrat Prof. Dr. von Rosthorn, Heidelberg, Germany, will be the guest of the Section on Obstetrics and Diseases of Women. A photograph of him is given herewith.

Professor Dr. Dührssen, Berlin, Germany, will be a guest of this Section and will also address the Section on Hygiene and Sanitary Science.

Dr. Wesley A. Mills, McGill University, Montreal, Canada, will speak before the Section on Pathology and Physiology.

Dr. Max von Frey, Physiologisches Institut, Würzburg, Germany, will also be a guest of this Section.

Professor Max Joseph, Berlin, Germany, will speak before the sections on Cutaneous Medicine and Surgery and on Hygiene and Sanitary Science. A sketch of him appeared in THE JOURNAL, April 14, page 1125.

Herr Geheimrat Prof. F. Trendelenburg of Leipzig, Germany, will be the guest of the Section on Surgery and Anatomy.

Dr. Simon W. Tunstal, Vancouver, British Columbia.

Dr. Murray MacLaren, St. Johns, New Brunswick.

Dr. James Bell, Montreal, Canada.

Dr. George A. Peters, Toronto, Canada.

Dr. Alexander Primrose, Toronto, Canada.

Dr. George A. Armstrong, Montreal, Canada.

Dr. Francis J. Shepherd, Montreal, Canada.

Dr. Richard A. Reeve, Toronto, Canada, president British Medical Association.

MAX VON FREY.

Professor Max von Frey of Würzburg, Germany, born in Salzberg, Austria, in 1852, is a German of the Germans, of noble birth and courtly bearing. He was educated in the gymnasium of his native city, and carried on his medical studies in Freiburg, Leipzig and Vienna; he supplemented his medical studies with courses in mathematics and mechanics in the Polytechnic School of Munich.

He accepted the call of Leipzig University, where he became the assistant of Karl Ludwig, the physiologist, first as privat docent and then as adjunct professor. In that capacity he directed all of the laboratory work in physiology besides conducting extensive researches.

He was later called to the University of Zurich, in Switzerland, as professor of physiology and was associated with Justus Gaule.

On the death of Adolph Fick, head professor of physiology in the University of Würzburg, the question as to who should be invited to fill his place was no easy one. When they finally chose Max von Frey, the pupil and associate of the great master, Karl Ludwig, the news was received by physiologists the world over with hearty approbation. For the most part his researches and his publications have been on the problems of the circulatory system and the pulse, physiology of the muscular system and the special senses.

ALFRED DÜHRSSEN.

Professor Alfred Dührssen may be regarded as one of the best known modern German gynecologists. Physicians of the whole world are more familiar with his name than that of the older German gynecologists, who together with those of other countries have done the real work in building up this branch of medicine as a special science. There are two achievements which tend particularly to make his name so well known. First, the recommendation of the vaginal route for gynecologic operations, and second, the application of methods of rapid evacuation of the uterus in obstetrics.

It is somewhat difficult to give a sketch of the life of a man who is still in the prime of his years and from whom we may still expect new and progressive ideas. Still Dührssen can reflect with satisfaction on the past in regard to some of the operations devised by him. The rapid evacuation of the uterus in eclampsia, recommended by him among one of the first which lately is frequently put to Bumm's credit, has today invaded the clinics of even the most conservative obstetricians. On the other hand, it would seem wrong to judge the life work of a physician and teacher only by his improvements of operative technic. Dührssen's merit in medical science may be found to a great part in conservative obstetrics.

While teaching obstetrics for many years as first assistant to Gusserow he did his share to transform the municipal hospital, the Charité, into a modern clinic. Grown up in the antiseptic era, he was fortunate to take active part in the great work which the Berlin school of obstetrics aimed at and accomplished so thoroughly, namely, the formulation of exact indications, valid rules for the various obstetric operations, by which the practitioner should be guided. Highly esteemed by his hearers, he has by lecturing for many years to students and physicians, sown seed that has borne manifold fruits. His "Vade Mecum" is a brief but complete exposition of the teachings of the Berlin school of great value to the practitioner in obstetric emergencies.

Out of the great number of literary contributions published by Dührssen only a few can be mentioned here. Together with his teacher, Gusserow, he investigated the nature of the liquor amnii. Recognition of the absolute helplessness of the obstetrician in case of an insufficiently dilated os inspired in him the idea of deep cervical incisions. Confidence in antisepsis and his great gynecologic experience led him to evolve vaginal Cesarean section from the method of cervical incisions. Dührssen's method of iodoform gauze tamponade for combating postpartum hemorrhages has found many admirers.

Graduated in the year 1885 and soon after admitted to the teaching faculty as "privat docent," he received comparatively young the title of professor. The severe criticism to which he was subjected by the influential part of the profession, on account of his retroflexion operations, led him to establish his own policlinic and clinic in Berlin. There he commands a large patronage, which he places in a most liberal manner at the disposal of everyone, also of foreign physicians.

Dührssen has almost as many friends in America as in Germany, and all who have seen him operate or have listened to his lectures, will gladly renew this acquaintance.

Medical science should be international, and visits of eminent medical men from abroad will only further the mutual respect and inspire new ideas. America is the home of operative gynecology and welcomes Professor Dührssen most heartily as one of the foremost German exponents of operative gynecology.

ALFONS EDLER VON ROSTHORN.

Prof. Alfons von Rosthorn of Heidelberg is about 48 years old and is one of the best known and appreciated German gynecologists.

He was born in Vienna, Austria, and there received his

general and medical education. He first contemplated an academic career in the study of natural history, and was for over a year assistant to the well-known zoologist, Professor Klaus. He then took up medicine and served some time as assistant to Professor Langer in anatomy. Later he became *Operationszoegling* in the surgical clinic under Billroth for two years, and then went to Gratz as assistant in surgery to Woeltler. Next he returned to Vienna as assistant to Breisky, and then to Chrobak in obstetrics and gynecology, whence he was called to Prague in 1891 as successor to Schauta. He remained in Prague eight years, during which time a new clinic was built. During this period a considerable number of American physicians visited Prague and became acquainted with him. In 1899 he was transferred to Gratz at his own request, where he remained three years, when he accepted a very flattering call to Heidelberg and the honorary and prized title from the German government of "Geheimrath."

In addition to numerous contributions to the literature of his specialty in the special and general medical journals, Professor Rosthorn has written several books. In co-operation with Professor Chrobak, he has written the book on gynecology in Nothnagel's "System of Medicine." In Veit's "Handbook of Gynecology" and in von Winckel's "Handbook of Obstetrics" he has written important chapters. He has been associated with A. Martin in the publication of the *Monatsschrift fuer Geburtshilfe und Gynaekologie* for the last four years. He has devoted especial attention to normal and pathologic anatomy and is considered the first authority on the structure and diseases of the pelvic connective tissue.

Professor Rosthorn's long training in anatomy has helped to make him a good operator. He has adopted the radical operation for cancer of the uterus, and his large experience, controlled by an unusually careful judgment, make his opinion on this subject of much interest.

As a teacher, Rosthorn has won a reputation approaching that of his own early teacher, Billroth. While very strict and exacting, he inspires an enthusiastic attachment that has created for him a loyal band of disciples. He speaks English perfectly, with a slight English accent, having studied and lived some time in England when a student.

As a scientist and scholar, as an operator and teacher, as a man in close touch with the present achievements and tendencies in German medicine, Professor Rosthorn represents perfectly the best in his specialty in his present home, Germany, and in his native home, Germany-Austria.

MAX JOSEPH.

Max Joseph of Berlin was born Jan. 2, 1860, in Gerdauen, East Prussia. He studied at Königsberg, and there he won a faculty prize for his essay, "Zeitmessende Versuche ueber Athmungsreflexe." He graduated in 1883 and attained his specialistic training with Kaposi at Vienna. Later he became assistant to Westphal and Köbner in Berlin, and became intimately associated with the Berlin Physiological Institute, where he worked for three years under Gad and Fritsch. In 1888 we find him attached to the zoological station at Naples under Dohrn.

Since 1889 he established himself in Berlin as a specialist for skin diseases and soon won enviable reputation in his specialty, both as a teacher and writer. He conducts one of the most popular private clinics and histologic laboratory for skin diseases. The number of patients reaches from 75 to 100 on week days and comes up to the high-water mark of 150 to 200 on Sundays, when the laboring class attends in large numbers. This enormous material, which can compare only with some of the most popular clinics of the Hospital St. Louis in Paris, is amply and systematically utilized by Joseph by individual teaching, which he understands in a masterly way. There are always plenty of Americans attending these, who carry away with them the conviction that they had profited by their attendance at this unique clinic.

In 1898 he was sent to Norway at the expense of the Bose foundation for the study of leprosy, as a result of which he published his essay "On Visceral Lepra."

Joseph is a man of imposing physique, of pleasant address and winning attitude. As to his characteristics, he is modest and unassuming to a fault; sympathetic to his patients, true to his friends, and chiefly, wedded to his specialty. His many friends and admirers tender him herewith a hearty and well-deserved welcome to America.

WESLEY MILLS.

Prof. Wesley Mills of McGill University, Montreal, was born in Ontario, Canada, and received his preparatory education in the schools of that province. In the University of Toronto he took an extensive collegiate course, receiving from that institution the degrees of bachelor of arts and master of arts. He studied medicine at McGill University, from which institution he received the combined degree of doctor of medicine and master of surgery. He also received from the same institution the degree of doctor of veterinary surgery, and from London the degree of L.R.C.P. He is a fellow of the Royal Society (Canadian Branch), and is also a member of many learned societies in Canada.

Dr. Mills has been engaged extensively in medical research in McGill University, and was made professor in that institution in 1886, retiring from general practice at the time he entered on his professorship. Dr. Mills has made extensive contributions to medical literature. The majority of his writings deal with comparative anatomy, physiology and psychology. He has also contributed to the literature on the blood and blood-forming organs.

FRIEDRICH TRENDELENBURG.

Prof. Friedrich Trendelenburg is chief of the surgical clinic at the University of Leipsic, Germany. All who have had the pleasure of making his acquaintance in former years will be delighted to welcome him to our shores; those who will meet him for the first time will be glad to shake hands with the man who devised the world-famous "Trendelenburg posture."

Friedrich Trendelenburg was born in Berlin May 24, 1844. He is the son of Friedrich Adolf Trendelenburg, professor of philosophy at Berlin, who did so much for the advancement of German universities, and was one of the most esteemed scientists of his time. Professor Trendelenburg studied medicine in Edinburgh, Glasgow and Berlin, under Allen Thomson, Bernhard von Langenbeck and others. After taking his diploma as M.D. (1866), with a dissertation, "The Surgery of the Ancient Hindoos," he again visited Glasgow to see Lister. From 1868 to 1874 he was assistant to the surgical clinic at Berlin under von Langenbeck, the renowned surgeon, whose assistants were always in eager demand as professors of surgery at the various universities and clinics of Germany. During this period Trendelenburg devoted much time to experimental surgical research work on a basis of general pathology. Thus he demonstrated the possibility of infecting animals with diphtheria by means of transplanting diphtheritic membranes from the human fauces.

In 1874 he was made chief of the surgical division of the "Krankenhaus am Friedrichshain" in Berlin. In the following year he accepted a call to the University of Rostock to fill the chair of professor of surgery. Seven years later he was called to the University of Bonn, to succeed the famous Wilhelm Busch, also a pupil of von Langenbeck, and since 1895 he has occupied the chair of surgery at the University of Leipsic, succeeding Karl Thiersch, who had then just died, after twenty-eight years of splendid work.

Trendelenburg has contributed largely to surgical literature. Among his more elaborate works may be mentioned: "Diseases of the Neck and Their Operative Treatment," and "Injuries and Surgical Diseases of the Face." His essays, and those published from his clinic by his assistants, are legion. In his "Contribution to the Operations on the Air Passages," he describes his well-known tracheal tampon-canula.

In 1881 he published, through his first assistant, an article fully describing and illustrating the "Trendelenburg posture," (Beckenhochlagerung), which has so greatly facilitated operative work within the small pelvis. The posture was carried out for the first time after its conception at the surgical clinic in Bonn, 1883-84. Since then many operating tables, portable and otherwise, have been constructed here and abroad, provid-

ing for this posture. Trendelenburg himself designed one which was shown at the exhibition connected with the International Medical Congress at Berlin in 1890.

Now Trendelenburg comes to the United States "to learn," as he recently wrote to one of his friends here. He may be sure of a hearty welcome by the medical profession of America.

SPECIAL TRAINS.

Some of the Trains and Routes to Boston and Their Advantages.

NEW YORK CENTRAL SPECIAL.—The New York Central Lines will run a special train through to Boston without change by way of the Lake Shore and Michigan Southern, the New York Central and the Boston and Albany railroads. This train is to be made up with a specially fine equipment similar to that used on the Twentieth Century and the Lake Shore Limited, consisting of observation compartment cars, standard sleeping cars, dining and library cars. The train is to leave Chicago at 10:30 a. m., Sunday, June 3, and to arrive in Boston at 2 p. m., Monday, June 4. There will be allowed stop-overs at Niagara Falls, Put-in-Bay and Chautauqua, N. Y. Additional information may be secured from Mr. L. F. Vosburgh, General Western Passenger Agent, Room 529, La Salle Street Station, Chicago.

CANADIAN PACIFIC.—A combination route over the Wabash to Detroit, thence over the Canadian Pacific, offers an attractive route to Boston, with the advantages of the scenery of the Thousand Islands, Rapids of the St. Lawrence, Toronto, Ottawa, Montreal, Quebec, and the White and Green mountains. A trip through Lake Ontario, the Thousand Islands and the Rapids can be made at a nominal addition to the rail rate as referred to on page 1368. Further particulars may be had from Mr. A. C. Shaw, General Agent of the Canadian Pacific Railway, Chicago.

WABASH SPECIAL.—The Wabash Railroad will run a special train of fine Pullman coaches and dining car through to Boston without change. This will leave Chicago, Sunday, June 3, at 10:30 p. m. and reach Boston Tuesday, June 5, at 7 a. m., having stopped at Niagara Falls for two or three hours. The feature of this train is the fact that although two nights are spent on the road, no extra charge is made for sleeping car, and the arrival in Boston early Tuesday morning will effect a saving of one night's lodging at Boston over other arrangements which anticipate arrival in Boston on Monday. In addition, this service will allow all of Sunday to be spent in Chicago. A special representative of the railroad will accompany the train. Reservations and further particulars may be secured through Mr. F. H. Tristram, Assistant General Passenger Agent, 97 Adams Street, Chicago.

PENNSYLVANIA LINE VIA WASHINGTON.—The Pennsylvania Railroad expects the patronage of many because of the fact that it offers by the Baltimore and Ohio Railroad the opportunity of stop-over at Washington en route to Boston. Further information may be secured from Mr. C. L. Kimball, Assistant General Passenger Agent of the Pennsylvania Railroad, 2 Sherman Street, Chicago.

MISSOURI VALLEY SPECIAL.—A special train will run over the Chicago and Alton, the Grand Trunk and the Boston and Maine Railroad, certain cars of which will leave Kansas City, St. Joe and Omaha May 31. The forenoon of the next day will be spent in Chicago and the departure over the Grand Trunk will be at 3 p. m. on a special train, arriving in Boston, June 4, morning. This trip includes a stop at Niagara Falls, a boat trip down the St. Lawrence River, through the Thousand Islands, and runs through the famous Green Mountain scenery. An optional return trip may be arranged through New York City via Fall River steamboat. Particulars of this train may be obtained from Dr. Charles Wood Fassett, St. Joseph, Mo.

Return Limit Time Extended.

Later announcement is made of arrangements by which an extension of the final limit may be secured so as not to leave Boston till July 15. To secure this it is only necessary for the purchaser of the ticket to deposit it in person with the validating agent at Boston not later than June 18, paying $1.

Stop-Over at New York on Return Trip.

The Trunk Line Association announces: "Stop-over at New York may be obtained on return trip on tickets reading via New York, provided ticket has been validated by validating agent at Boston and is deposited by original purchaser in person with joint agent at New York not later than one day after validation at Boston, and on payment of fee of $1.00 at time of deposit, but in no case shall the stop-over at New York extend beyond July 15. Joint agent at New York will attach stop-over certificate to ticket, which shall not be delivered to passenger earlier than two hours before departure of train on which return trip will begin (except that for trains leaving after 6 p. m. and before 9 a. m. ticket will be delivered to passenger before 6 p. m.). Ticket will not be good leaving New York later than the day following date of leaving Boston unless stop-over certificate is attached by joint agent at New York. Mr. W. F. Holwill is joint agent, 182 Fifth Avenue, New York City. Office hours, 8 a. m. to 6 p. m., week days and Sundays."

SECTION ON NERVOUS AND MENTAL DISEASES.

CHAIRMAN, WHARTON SINKLER, PHILADELPHIA; SECRETARY, T. H. WEISENBURG, PHILADELPHIA.

The following program was received too late to be inserted in its order on a previous page:

Chairman's Address. Wharton Sinkler, Philadelphia.

Manic-depression, Insanity and Visceral Disorder. Henry S. Upson, Cleveland, Ohio.

The Motor Degenerative Sequence in Dementia. H. A. Tomlinson, St. Peter, Minn.

Lucid Intervals in the Insane and Their Medicolegal Importance. D. J. McCarthy and W. W. Hawke, Philadelphia, Pa.

Affections of the Spinal Cord in Epileptics. W. N. Bullard, Boston.

The Pathology of Uremic Hemiplegia. J. H. W. Rhein, Philadelphia.

The Paranoid Group. F. X. Dercum, Philadelphia.

The Blood Pressure in Paresis. G. L. Walton, Boston.

The Anatomic and Physiologic Results of Experimental Nerve Suture. L. Pierce Clark, New York City.

Cases of Basilar Thrombosis. E. E. Southard and N. K. Wood, Boston.

Paralysis of the Pharynx, with Four Years of Feeding with the Tube. S. Weir Mitchell, Philadelphia.

Discussion to be opened by Joseph Collins, New York City.

Unilateral Ascending Paralysis, Its Clinical Varieties, and Their Pathological Causes. Charles K. Mills, Philadelphia.

A Contribution to the Symptomatology and Diagnosis of Spinal Cord Tumors. J. Ramsay Hunt, New York City.

Hydrocephalus as the Result of the Occlusion of the Aqueduct of Sylvius. William G. Spiller, Philadelphia.

Myasthenia Gravis. C. Eugene Riggs, St. Paul, Minn.

Migrainic Psychoses, apropos of Twelve Cases. Alfred Gordon, Philadelphia.

Multiple Neuritis Resembling Progressive Muscular Atrophy, with Report of Cases. Julius Grinker, Chicago.

Collective versus Individualized Treatment of Neuroses and Psychoses. Richard Dewey, Wauwatosa, Wis.

Tumor of the Right versus Tumor of the Left Frontal Lobe of the Brain. W. C. Krauss, Buffalo, N. Y.

Conjugate Deviation of the Eyes and Head and Disorders of the Associated Ocular Movements in Tumors and Other Lesions of the Cerebrum. T. H. Weisenburg, Philadelphia.

Discussion to be opened by William G. Spiller, Philadelphia.

Palliative Operations (Cerebral Decompression) in the Treatment of Tumors of the Brain. William G. Spiller and Charles H. Frazier, Philadelphia.

The Present Status of Brain Surgery. M. Allen Starr, New York City.

A Contribution to the Localization of the Motor Area Derived from a Study of Three Cases of Jacksonian Epilepsy. H. C. Gordinier, Troy, N. Y.

(Continued under The Boston Session on page 1388.)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, MAY 5, 1906.

PREVIOUS BOSTON SESSIONS—A RETROSPECT.

The coming session of the American Medical Association will be the third in the history of the Association held in Boston. Organized in 1847 in Philadelphia, following a preliminary convention in New York City the preceding year, the Association held its first regular session in Baltimore, May 2, 1848. The second annual session convened in Boston May 1, 1849, just fifty-seven years ago. The official minutes show that the Association met in the hall of the Lowell Institute at 11 o'clock on the morning of May 1, and was called to order by the President, Dr. Alexander H. Stevens, president of the Faculty and Emeritus Professor of Surgery of the College of Physicians and Surgeons of New York. Dr. John Collins Warren of Boston, who was elected on the following day as the third president of the American Medical Association, delivered the address of welcome on behalf of the Committee of Reception of the Massachusetts Medical Society.

It is interesting to look over the list of those present at this second session of the new Association. As would naturally be expected, most of the members came from the eastern states and especially from near the place of meeting. In accordance with the provisions of the constitution then in force, the Association was composed of delegates representing state and county societies, medical colleges and hospitals. Those in attendance numbered 658 and were distributed among the various states as follows: Maine, 3; New Hampshire, 53; Vermont, 75; Massachusetts, 160; Rhode Island, 14; Connecticut, 46; New York, 135; New Jersey, 12; Pennsylvania, 50; Delaware, 54; Maryland, 14; Virginia, 6; North Carolina, 1; South Carolina, 6; Georgia, 6; Alabama, 5; Louisiana, 3; Tennessee, 2; Ohio, 5; Indiana, 3; Illinois, 2; Missouri, 2; Iowa, 1. There were only 15 delegates present from west of the Allegheny Mountains, and only 3, those of Iowa and Missouri, from west of the Mississippi River.

Glancing over the list of the Massachusetts delegates, one notices the name of Oliver Wendell Holmes, who sat as a representative of the Medical Department of Harvard University and of the Tremont Street Medical School; of Dr. Samuel Cabot and Dr. Samuel Parkman, representing the Boston Society for Medical Improvement; and of Dr. Henry I. Bowditch, who, with Dr. Warren, represented the Massachusetts General Hospital. In the New York delegation sat Dr. N. S. Davis as a representative of the "New York Medical Association," and Dr. Austin Flint, representing the Buffalo Medical Association and the Buffalo Hospital; from Pennsylvania came Dr. George B. Wood and Dr. Alfred Stillé, representing the Philadelphia College of Physicians; Dr. Samuel Jackson, as a delegate from the University of Pennsylvania, and Dr. Charles D. Meigs, representing the Pennsylvania Hospital. In the Virginia delegation sat Dr. Hugh H. McGuire and Dr. G. Lane Corbin, as representatives of the Medical Convention of Virginia, and Dr. John P. Mettauer, representing the Randolph-Macon Medical College. South Carolina sent Dr. J. Moultrie and Dr. Thomas G. Prioleau. From Ohio came Dr. Reuben D. Mussey, later chosen President of the Association. Illinois had two delegates present, Dr. John F. Sanford, representing the Rock Island Medical School, and Dr. John Evans, representing Rush Medical College.

At this session the following officers were unanimously elected: President, Dr. John C. Warren, Massachusetts; vice-presidents, Drs. John P. Harrison, Hugh H. McGuire, Austin Flint and R. S. Steuart; secretaries, Drs. Alfred Stillé and Henry I. Bowditch.

It is interesting to note that problems confronting the Association at its second session were evidently very similar to those which confront it to-day, and that the changed conditions and the marvelous growth and development of the country in the fifty-seven years which have elapsed since the first Boston session do not seem to have affected in any way the duties or responsibilities of the Association either to its members or to the public. The report of the standing committee on medical education, presented on the afternoon of the last day of the session, was evidently considered and discussed at length. The committee, of which Dr. Stevens was chairman, reported in favor of increasing the requirements for medical students before admission to medical schools; also that the course be increased to six months and that state medical societies be asked to recognize only those physicians who had obtained a degree in medicine or a license from some regular medical body after due examination. Dr. U. Parsons, chairman of the committee appointed at the Baltimore session the previous year, made a report on the subject of adulterated and spurious drugs, and recommended the appointment of a committee, consisting of two delegates from each state, "to note all the facts that come to their knowledge with regard to the sophistication of drugs, medicines, chemicals, etc., and to report at the next annual session." Following the adoption of this report, Dr. J. B. Johnson introduced a resolution providing for the establishment of schools of pharmacy, in the preamble of which he said: "Numberless and important evils result . . . from the universal traffic in patent and secret remedies." Dr. Stevens submitted the following resolution: "*Resolved*, That the American Medical Association recommend medical men in the Association indi-

vidually, by public lecture and otherwise, to enlighten the public in regard to the duties and responsibilities of the medical profession and their just claims to the confidence of the public." The matter of preparing a list of physicians who were recognized as regularly graduated practitioners, as well as the establishment of a bureau on American medical biography, were discussed. It is only this year that these ideas are being put into effect.

The following is also interesting reading at the present time: "Dr. Thomas Wood presented the following resolution, which was adopted: '*Resolved*, That the Committee on Medical Science for 1849 be instructed to inquire into the expediency of establishing a board to analyze the medicines and nostrums now palmed on the public, and to publish their results of their examinations in a newspaper to be established for this purpose; and, further, to append such plain views and explanations thereto as will enlighten the public in regard to the nature and danger of such remedies.'"

Sixteen years later—June 6-9, 1865—the American Medical Association again met in Boston. The country at that time had barely emerged from the confusion of the Civil War, the meeting being held only two months after Lee's surrender at Appomattox. The Association assembled in the Massachusetts State House and was called to order by the President, Dr. N. S. Davis, then of Illinois, who also sat as delegate from Rush Medical College. Dr. Henry J. Bigelow, chairman of the local committee on arrangements, delivered an address of welcome. Roll call showed 616 present, of whom 555 were delegates and 61 were "permanent members," who as delegates to some previous meeting had the right to take part in the proceedings, but not the right to vote, distributed among the various states as follows: Connecticut, 31; Delaware, 1; District of Columbia, 9; Illinois, 6; Indiana, 5; Iowa, 2; Maine, 27; Maryland, 7; Massachusetts, 261; Michigan, 7; Missouri, 1; New Hampshire, 31; New Jersey, 12; New York, 102; Ohio, 9; Pennsylvania, 30; Rhode Island, 19; Tennessee, 1; Vermont, 40, and the Army and Navy, 10. These figures are interesting as showing the unequal representation under the old constitution. Although the Association was made up of delegates elected from county and state societies in the proportion of one to every ten members and of representatives from medical colleges, it necessarily followed that the state in which the meeting was held had an overwhelming proportion of delegates present. At this meeting, for instance, Massachusetts, Connecticut and New York together had 257 delegates, or nearly a majority of the entire voting membership. As the constitution at the preceding meeting in New York City had been amended so that the president elected at each meeting did not assume the chair until the following meeting, Dr. N. S. Davis, who was elected President in June of 1864, retained the chair through both sessions, giving way at the close of the Boston session to Dr. Humphrey Storer of Boston, who was elected President on the last day of the session. It is worthy of note that practically the entire attendance was from the eastern states, immediately contiguous to the place of meeting. None of the southern states were represented, as the entire medical profession of the South had been doing military service for four years past. The representation from the western states was also small, there being only thirty present from west of the Allegheny Mountains, and but three from west of the Mississippi River.

Much of the time was devoted to argument and discussion over two questions: First, The action of the Association in expelling from membership Dr. Montrose A. Pallen of New York, who was accused of complicity in the plot to poison the water of the Croton reservoir. Second, Criticism and arraignment of Surgeon-General Barnes, who was accused of consulting with a homeopath in the case of Senator Seward and his son. In spite of the evident tendency to bitter feeling and plain speaking, which would be expected at such a time, a considerable amount of valuable work was done. A large number of committees reported on various subjects. Among these were the reports of the committee on diphtheria, on spotted fever, on membranous croup, on compulsory vaccination, etc. Dr. T. Antisell of Washington presented a report to the Committee on Medical Education, which was referred to the Committee on Publication without discussion. Among other things, the report states that the committee attempted to obtain new and reliable data regarding medical colleges then in existence. Only thirty-three medical schools could be reached at the time, and of these, twenty replied, representing 3,209 matriculates and 1,001 graduates. The committee estimated that the entire number of medical students of the United States at that time was about 5,000. Of these twenty schools, dissections were required in but twelve, microscopy was taught in six, and pathology in only two. The committee recommended the passage by each state of a medical practice law, establishing a board of examiners, which should be the licensing body, entirely separate from the medical college or graduating body. On the afternoon of the fourth day, Friday, June 9, the Association was addressed by John A. Andrews, governor of the state of Massachusetts.

There are two facts which impress one in reading the reports and transactions of these previous sessions: First, That the American Medical Association in former years drew its attendance from a much smaller section of the country than it does to-day, which, of course, was to be expected; and that the attendance was more strictly limited to the territory immediately contiguous to the place of meeting. Second, That the problems which confronted the Association when it met in Boston in 1849 and 1865 were much the same as those which confront it to-day. Ever since the organization of the American Medical Association, the questions which have been most constantly and prominently

before it have been those connected with medical education, medical licensure and the purity and integrity of the drugs offered to the physicians by manufacturers and dealers. Much progress has been made along all of these lines since the Association last met under the shadow of the Massachusetts State House. It is to be hoped that the coming session will not only be the most successful and enjoyable of any of the annual sessions heretofore held, but that much definite progress will be made in solving the problems which have been of vital importance to the Association ever since its organization.

TUBERCULOUS INFECTION AND IMMUNITY.

Prof. Theobald Smith's lecture on problems in tuberculous infection and immunity[1] contains much of interest to students of tuberculosis, and a restatement and discussion of some of the points considered seem desirable more by way of emphasis than criticism.

The modes of invasion of the body by the tubercle bacillus are now regarded generally as fairly well understood. In most cases the bacilli are inhaled either in the form of dried sputa or as moist particles. This appears to be the case in cattle as well as in human beings. Baumgarten has long championed the view that many cases are the result of congenital infection, the bacilli being carried by the blood to various parts of the body, where they sooner or later give rise to evidences of morbific activity. In this way he explains the occurrence in children of primary tuberculosis of lymph nodes and other internal structures without disease at what would be the portal of entry in case the bacilli entered from without after birth. Based on the results of animal experiments, Baumgarten holds that tubercle bacilli always cause lesions at the point where they enter the body, but this contention is opposed by the majority of the investigators of the localization of primary tuberculous infection in children, notably Harbitz. Theobald Smith's study of bovine tuberculosis from this point of view has led him also to conclude that tubercle bacilli may pass through mucous membranes without being detained. His observations on this point are quite striking. Emphasis may also be put on his conclusion that Behring's theory that tuberculosis starts early in life through the digestive tract is not, as a rule, applicable to the bovine disease, which may enter by way of different channels, the respiratory tract being the most important.

As regards immunization against tuberculosis, Smith's lecture makes it very clear that in spite of the stupendous amount of study given to this subject we are still at the beginning. The relation of the secretions, metabolic products and component elements of the bacillus to the production of immunity has been investigated, with the result that now the attention is being turned to the whole bacillus, more particularly the living attenuated bacillus; in other words, we are going back to the old principle established by Pasteur in 1880 in his protective inoculation against fowl cholera. Unfortunately, the procedure, or its analogue, by means of which cattle may be made resistant to living cultures of bovine tubercle bacilli, namely, the intravenous injection of living human bacilli, is not applicable to man. Smith points out, however, that the high percentage of latent or arrested tuberculosis in human beings indicates that man normally possesses considerable resistance, which probably may be augmented specifically by some form of inoculation. On theoretical grounds he recommends for this purpose early cultures of tubercle bacilli, grown on media resembling as nearly as possible living human tissues, in order to maintain the virulence of the organisms, and killed by heating to 60° C. It may be recalled that A. E. Wright for the same purpose employs ground and crushed bacilli (tuberculin TR) in small doses, measuring the result for guidance as to dosage and proper intervals between the injections by determination of the opsonic index of the patients. The therapeutic results obtained by Wright have awakened great enthusiasm and certainly demand that the method be given a fair and exhaustive trial. In the meantime Theobald Smith's suggestions as to the possible advantages of the killed bacilli should be subjected to experimental test.

In concluding Smith points out that in the case of the tubercle bacillus partial immunization, i. e., increased resistance, can not eradicate tuberculosis, because it would lead to the survival of especially virulent races of bacilli, that in the unprotected probably would cause severe manifestations. Careful isolation of the sources of infection, namely, the sick, so that the actual spread of infection be prevented, combined with protective inoculation, would seem to be the weapons with which to attempt to drive back tuberculosis.

1. This issue of The Journal, page 1345.

LIFE INSURANCE EXAMINATION FEES.

Whether it is because gold has depreciated in value, owing to the increase in its production, or whether it is because of good times resulting from good crops and other good things that tend to prosperity, we do not know, and it does not matter; but, whatever the cause, the prices of all the necessities and luxuries of life—except a few articles whose cost of production has lessened by improved machinery—have enormously increased during the last few years. This is common knowledge. Likewise it is well known that the shoemaker, the bricklayer, the carpenter and artisans of all kinds, as well as the hod-carrier and the day laborer, are receiving from 25 to 100 per cent. higher wages than they did ten or fifteen years ago. The lawyer is not hesitating to charge for preparing a brief double what he charged ten years ago—and he gets it. Even the preachers' salaries are better than they used to be. The doctor is the only breadwinner whose fees have remained

stationary. Where fifty cents for office consultation and a dollar for a visit were the average fees, say, fifteen years ago, the same high remuneration still prevails. This is especially true in the smaller towns. In the larger cities the better men and the specialists have not hesitated to charge more as the incomes of their patients increased, but the fees of average practitioners remain the same. Of course, no one is to blame but those who have been contented to put up with these absurd conditions; it is the doctor's, and not the patient's, fault. It is the same old story; if we do not look after our own interests we can not expect others to do it for us.

Our object now, however, is not to discuss the fee question in its general aspects, important though this question is, but to call attention to the subject as it relates to the examination for life insurance. As many of our readers know to their cost, some old-line companies have recently cut their fees from $5.00 to $3.00, and this without consulting those who did the work—at least not until after the cut had been made. And then the majority of those to whom the new terms were tendered meekly submitted. But what else could they do? They reasoned, undoubtedly, that if they refused to submit some other physician in the same town would accept, and, therefore, that it was better to have the reduced fee than none at all. But did they reason rightly when that reasoning forced them to the conclusion that another physician would take the pittance they were offered if they did not? This is the question to be considered. In the past, when the medical profession was poorly organized, probably they would have been right. Then each physician acted individually, for himself alone, without regard to the result of his action on the profession as a whole. It is different now.

In the greater portion of our country all the good men —and the old-line companies want no others—are in the organization and thus are in a position unitedly to demand their rights—justice. From the fact that these companies moved in the matter at the same time, took exactly the same action, and even used the same verbiage in their circular letters in some instances, it looks very much as though they were united and acted in conformity with a plan mutually agreed on. These wealthy organizations, without consulting those directly interested, said to their medical examiners: "We have reduced your fees 40 per cent.; accept this reduction or we will get some other physician to examine for us." They thought their proposition would be accepted, and we regret to say that they were right in too many instances.

The question arises: Are we now sufficiently united to resist successfully such arbitrary dictation on the part of a combination of wealthy corporations, or shall we continue to submit and to take the pittance that is offered? We certainly believe that we are sufficiently united; at least in most localities, and that we should not submit. As we have recorded from week to week in our news columns, several county societies have already taken action and have refused to accept this new rate. In some instances, every physician in the county has signed an agreement not to examine for the old-line companies for less than the fee received in the past. As one put it, "If we accept this 40 per cent. reduction now, how soon will there be another similar cut?"

We publish in our "Correspondence" columns a protest and a plea on this subject from Dr. J. N. McCormack. Having traveled over the country and having come in close touch with the medical profession, he knows the conditions and the sentiments of the profession, and he believes that a united resistance should be made everywhere. From the numerous letters we have received we believe that he is right and that action should be taken immediately in every county society in the country.

While we are giving attention to the question as it relates to the old-line companies, we should not forget that the prevailing conditions as they relate to the industrial companies and fraternal insurance orders are still worse, one dollar and even less being the usual examination fee for this work. It is absurd, and a reflection on the good common sense of the members of our profession, that we should have put up with this for so long, and, while we are discussing the question as it relates to the old-line companies, let us not forget to take in the industrial and fraternal phase of the question.

The time has come to act.

URIC ACID SOLVENTS.

If we analyze the various remedies that are recommended as uric acid eliminators or solvents, we find that nearly all of them contain two chief ingredients, i. e., alkali and water; the idea being presumably to alkalinize the blood stream, thereby rendering the uric acid more soluble and hence promoting its excretion. This in itself is not a bad idea, although it is an exceedingly difficult matter more than temporarily to change the reaction of the blood by the administration of alkalies by mouth, because the kidneys at once eliminate any excess of alkali. The idea, however, that alkalies given by mouth can in any way aid in dissolving uric acid concretions after they have once formed is, of course, preposterous. One might as well give ether to dissolve the fat of the body in obesity or acids to dissolve the calcium out of osteophytes, on the ground that ether or acids can dissolve fat or calcium salts in the test-tube; in other words, the fact that alkalies are a uric acid solvent *in vitro* does not mean that they can accomplish the same *in vivo*. The amount of ingested alkali, moreover, that could reach uric acid deposits in the circulation would be so infinitesimally small that a solvent effect could impossibly be accomplished.

This criticism applies with particular emphasis to lithium preparations that are so popular in the treatment of uric acid diseases. In the first place so-called

lithia waters[1] contain only a few decigrams of lithium carbonate to the liter; as they always also contain large quantities of other alkalies, only a very minimal amount of uric acid (according to Berthollet's law) would combine with the lithia, the bulk with the sodium and potassium salts, while at the same time most of the lithium would be promptly excreted as chlorid, phosphate and sulphate. Finally, lithium carbonate, which actually does readily dissolve uric acid in the test-tube, is immediately converted in the stomach into lithium chlorid, a salt that possesses only slight uric acid dissolving properties.

Whatever virtues, therefore, the innumerable uric acid remedies and lithia waters may possess, they owe to the alkali that they contain, but this alkali acts only mildly as a uric acid eliminator and not at all as a solvent of urate concretions; it acts chiefly as an antacid in acidosis and possibly as a stimulant to the liver function. The water is probably the most efficacious ingredient of these uric acid remedies, because abundant water drinking combined with a rational diet, the details of which can not be enumerated here, undoubtedly acts beneficially in most disorders in which metabolism is retarded and in which incompletely oxidized waste products accumulate.

Until we understand the real cause of gout and allied conditions, until we know what produces the symptoms that are popularly considered to be manifestations of a hypothetical uric acid diathesis, we can do no better than to treat the gastrointestinal tract and the liver, to promote elimination and give the patient the benefit of certain symptomatic and local treatment.

If alkali and water are to be used, and we know empirically that they are of some benefit, why not order our patients to drink a few quarts of water a day, to which may be advantageously added a teaspoonful or so of baking soda and a pinch or two of precipitated chalk? This would accomplish all that can possibly be claimed for their goods by promoters of a host of expensive mineral waters and the manufacturers of most of our well advertised so-called uric acid remedies.

1. The following quotation from an advertisement of Londonderry Lithia Water is taken from a daily paper:

> There are several Elements produced from Food that in sufficient quantities will eventually destroy your Body the chief one is called by learned scientists Uric Acid
>
> Now Uric Acid is just a Poison—
>
> And when Uric Acid gets into the System from the Food you eat, it usually goes straight for the Blood—the great highway of Health and Disease in the Body.
>
> Now Uric Acid is one of the hardest things in the world to dissolve
>
> Some metals are easier to dissolve than Uric Acid—
>
> And the Blood, which can usually dissolve almost everything, has no effect on it whatever—
>
> Consequently the Uric Acid remains in the Blood as Uric Acid—and clogs or impedes the circulation of the Blood just as Ashes clog your Stove draughts.
>
> Now Uric Acid clogs the circulation because primarily it makes the Arteries smaller—that it does this is an acknowledged scientific fact.

In this connection, it may be interesting to know that an analysis of [illegible] water showed that it contained only a trace of lithia.

THE BOSTON SESSION.

Considerable space is given this week to Boston and the coming session of the American Medical Association. But we make no apologies, for, if we mistake not, the session, in a month from now in the chief city of the old Bay State, will be the largest gathering of medical men ever held in this or in any other country. And not only will it be the largest, but it will bring together the leading men of our profession from the United States, as well as many from abroad. The preliminary programs of the Sections printed in this issue indicate in part what will be the character of the scientific work; but only in part. Aside from the scientific exhibit, which promises to be unusually attractive and instructive, there will be demonstrations of the application of scientific methods in practice that will be appreciated both by those who already have, as well as by those who have not, a good knowledge of such methods. But, aside from the scientific work and attractions, the social entertainments promise a season of enjoyable relaxation that will make the gathering one of pleasure as well as of profit. Under the indefatigable leadership of Dr. H. L. Burrell, Chairman of the local Committee of Arrangements, the physicians and surgeons of Boston have been working for months to make the visit of their professional brethren one of enjoyment. The whole Boston profession has been, and is, working unitedly and unselfishly to make the session a memorable one. Provisions have been made for seeing the historic spots in and around Boston, and excursions to other New England points undoubtedly will be arranged. While there will be a very large attendance, the committee promises to find good comfortable accommodations for all. But we suggest that those who expect to go should write to the hotel committee in advance, and not wait until their arrival and then expect a large corner room with bath prepared for them.

THE CALIFORNIA FUND.

Reports received from San Francisco show that there will be abundant need for the money which physicians are contributing to the fund for the California physicians. A large number—how many is not known—lost all their property, including house and office furniture, instruments, etc., and, in addition to this, their practice—at least for some time to come. They are true to their professional instincts, however, for they are working without compensation among the sick and injured, overseeing sanitation and aiding in the prophylactic measures which are so necessary under the present circumstances. While it is gratifying to note the response to the appeal to physicians in behalf of their suffering brethren, it is hoped that all who have not yet done so and are able to contribute will feel it a privilege to make some contribution, however small. The opportunity is a rare one, and no one will have cause to regret the philanthropy shown. We publish on another page the list of contributions thus far received, and we trust that still further and more generous response is forthcoming from the more fortunate brothers of those in distress.

THE REGENERATION OF LIMBS.

The anticipation of Dr. Morgan, in his article[1] in this issue of THE JOURNAL, seems almost as extreme as the alleged prophecy of a distinguished foreign surgeon, that synthetic chemistry would yet produce living, sentient and thinking beings. There is a great deal of faith in scientific men—some might call it credulity—as to the results of their labors. The suggestion of Dr. Morgan, however, has a better basis than have some of the others. It merely asserts the probability in the highest vertebrates of a process that is well known in the lower vertebrates and is still more frequent throughout the invertebrate kingdom. Nearly all the tissues in vertebrates, including even the bones, tend, when destroyed, to reproduce themselves to a greater or less extent, and the suggestion of Tornier (quoted by Dr. Morgan) that the double limbs sometimes found in human embryos may have their origin in injuries to the fetal periosteum is perhaps not unworthy of consideration. It would seem at first sight still more probable that some of the abortive limbs or parts (for example, fingers growing out of the shoulder joint) might be the result of some such process attempting to make up for a lost member. We should expect such things more in the cartilaginous fetus than in the further advanced organism, and this is supported by the facts observed in the embryonal stage of the frog. We can not even say that mammals do not have this tendency to reproduce lost parts. A recent observation by Oldfield Thomas[2] of the tendency to regeneration of the tail of the dormouse is a case in point. The facts of paraffin prothesis are also suggestive, indicating, as they do, that very extensive bone lesions can be compensated for if we only give a proper support on which the soft tissues can reproduce themselves. A prominent Belgian physician visiting this country is quoted as saying that among his colleagues at home amputation is almost ignored as a surgical necessity unless the joints are involved. It may be a very long time before we see the realization of Dr. Morgan's prediction, and it seems improbable enough, but it can not be said to be an altogether impossible thing.

Medical News

CALIFORNIA.

Accident.—Drs. Charles Sexton and Charles Freedman, Los Angeles, were thrown from their carriage in a runaway accident, April 11, and rendered unconscious.

Plague at Oakland.—Dr. N. K. Foster, secretary of the State Board of Health, reports that there is no doubt of the diagnosis of the case of bubonic plague recently discovered at Oakland.

Personal.—Dr. Henry J. Kreutzmann and family, San Francisco, have returned from a European trip.——Dr. Francis L. Newton, Woodland, has been made president of the local board of health.——Dr. Charles E. Parent, San Francisco, sailed for Europe, April 6.——Dr. Louis C. Deane, San Francisco, has returned from Europe.——Dr. William J. Caesar, San José, has been appointed member of the local board of health, vice Dr. E. D. Moffit, resigned.

CONNECTICUT.

New Internes.—As a result of the examination for internes at Hartford Hospital, the successful applicants out of the 13 who took the examination were Drs. J. D. Blake, A. C. Rowley, R. S. Risley and C. J. Griswold.

Communicable Diseases.—During March 25 cases of smallpox were reported in one town, Putnam; 686 cases of measles in 63 towns; 193 cases of scarlet fever in 46 towns; 17 cases of cerebrospinal meningitis in 9 towns; 148 cases of diphtheria in 32 towns; 112 cases of whooping cough in 20 towns; 30 cases of typhoid fever in 19 towns, and 56 cases of tuberculosis in 17 towns.

Personal.—Dr. W. Matthew Kenna, police surgeon of New Haven, has resigned.——At the meeting of the New Haven County Medical Society, April 19, the following were appointed delegates to the Connecticut Medical Society: Drs. Gustavus Eliot, Frederick N. Sperry, E. Herman Arnold and Henry C. Swain, New Haven; Thomas M. Bull, Naugatuck, and Henry G. Anderson and Frederick G. Graves, Waterbury. Dr. Charles J. Foote, New Haven, was re-elected councilor.——Dr. Frank E. Beckwith, New Haven, expects to start for Switzerland, July 1.

ILLINOIS.

Fever Closes School.—On account of the prevalence of scarlet fever in Deer Creek, and to prevent further spread of the disease, the public school in that village has been closed.

Personal.—Dr. Albert M. Beal, Moline, has been elected president of the board of education.——Dr. Harry R. Lemen, Alton, left for San Francisco, April 22.

Hospital Internes Named.—The names of the successful candidates for interneship in the Cook County Hospital were certified April 26 by the civil service commissioners. The following are the names of the successful applicants and their marks: Lawrence W. Smith, 90.8; R. L. Burns, 90.7; Fred Epplen, 90.5; C. A. Katherman, 90.5; E. P. Oldham, 90.5; Eagan N. Fishinam, 89.9; James T. Churchill, 87.6; Evan S. Evans, 87.6; M. J. Moes, 85.5; M. T. Easton, 85.4.

Chicago.

Personal.—Dr. Marie W. Walker sailed for Europe on the *Deutschland*, April 28.——Dr. and Mrs. Alexander Hugh Ferguson have returned from a southern trip.

Hospital Appeals for Help.—The directors of the Chicago Charity Hospital have made an appeal for $5,000 in aid of the institution which, so far as its capacity of 30 beds will allow, is free to the poor.

Hospital for Ravenswood.—The trustees of the Ravenswood Hospital have purchased a tract of land at Winchester and Wilson avenues, 192x152 feet, on which a modern hospital building will be erected.

Ask for Ambulance Physicians.—The health commissioner and the chief of police have asked the finance committee to recommend to the city council the transfer of the ambulance service from the police to the health department and to authorize an appointment of a police surgeon to have charge of each ambulance.

Examination of Candidate Medical Officers.—An examination of candidate medical officers for the National Guard will be held at Senn Hall, Rush Medical College, May 5. The examining board consists of Lieutenant-Colonel George Paull Marquis, assistant surgeon general; Major and Surgeon Charles Adams; Captain and Assistant Surgeon Samuel C. Stanton; First Lieutenant and Assistant Surgeon Truman W. Brophy.

Deaths of the Week.—The total deaths from all causes for the week ended April 28 was 621, 24 less than for the preceding week and 94 more than for the corresponding week of 1905. The mortality of the week is equivalent to an annual death rate of 15.80 per 1,000. Pneumonia still heads the list of death causes with 117, followed by consumption with 81; heart disease, with 48; nephritis, with 47; suicide, including violence, with 43; cancer, with 33; acute intestinal diseases, with 28, and nervous diseases, with 22. Scarlet fever caused 11 deaths; typhoid fever, 9; measles, 5; diphtheria, 4, and whooping cough, 2.

INDIANA.

The Afflicted.—Dr. James A. Comstock, Greenfield, has been compelled to abandon practice on account of illness.——Dr. Ernest R. Sisson, Maxwell, has been ill for a year, but is now improving.

Personal.—Dr. Patrick Jameson, Indianapolis, more than 57 years in practice, celebrated his eighty-second birthday anniversary April 18.——Dr. Benjamin L. W. Floyd, Evansville, sailed for England on the *St. Paul*, April 21.——Dr. Marion Thrasher of San Francisco, Cal., formerly of Fayette County, reports himself and family safe, but that everything in the way of property was lost.

1. This issue of THE JOURNAL, page 1327.
2. Zool. Soc. London Nature, Jan. 11, 1906.

IOWA.

Restore Meeting Date.—The officers of the Iowa State Medical Society, who changed the date of meeting from May 16-18 to May 9-10, have announced that the meeting will be held on the dates originally fixed, namely, May 16, 17 and 18.

Protest Against Abolition of Registrars. The physicians of the state have received with great disfavor the recent act of the legislature abolishing registers of births and deaths, and doing away with the issuance of burial permits after July 1.

Personal.—Dr. Theodore Engle, State Center, has been elected delegate from the Marshall County Medical Society to the Iowa State Medical Society, and Dr. Winfield S. Devine, Marshalltown, has been chosen as alternate.——Dr. Newton J. Rice has been appointed city physician of Council Bluffs.——Dr. and Mrs. James E. Conn, Ida Grove, will spend a portion of the summer on the Atlantic seaboard.——Dr. P. Alfred Bendixon, Davenport, sailed from New York, April 24, for Naples.

KENTUCKY.

Druggists May Sell Liquor.—An ordinance to prohibit the granting of retail liquor licenses to retail druggists of Louisville was defeated at a meeting of the general council, April 25. The ordinance specified that no druggist in Louisville should sell whisky or alcohol except on the prescription of a practicing physician.

Prohibit Medicine Sample Distribution.—The Louisville board of aldermen has adopted an ordinance prohibiting the distribution of the samples of "patent medicines," preventing the promiscuous throwing of samples of medicine into yards, and stipulates that whenever samples are distributed they must be given to some responsible person of the household.

MARYLAND.

Tuberculosis Commission.—The governor has appointed the following on the state tuberculosis commission: Drs. Lillian Welsh and William Sidney Thayer, Baltimore, and Messrs. John M. Glen and Daniel W. Hopper.

Milk Exhibit.—The State Board of Health, encouraged by the success of the tuberculosis exhibit two years ago, is preparing to hold a public milk exhibit at McCoy Hall, Johns Hopkins University, Baltimore, May 7 to 14. This is the culmination of the course of lectures recently delivered on the same subject and in the same hall. In arranging this exhibit the board has called to its aid many other boards and societies. The exhibit will embrace the following: Chemistry of milk; pathology and bacteriology of milk and milk products; statistics of milk; morbific, infectious and anomalous milk; medical milk commissions and milk dispensaries; modified milk; model dairies; dairy utensils and dairy rations; sophistications and adulterations of milk; manufactured milks and milk foods; technical uses of milk; dairy customs of foreign countries; the culinary uses of milk; literature of milk and dairy products. The contributors to the exhibit will include the United States Department of Agriculture, state food and dairy departments, sanitary live stock boards, agricultural experiment stations, boards of health, medical milk commissions, charitable agencies, research laboratories, and a selected list of commercial concerns.

Baltimore.

Hospital Report.—The report of the dispensary physician, University of Maryland Hospital, shows 28,028 cases treated during the year ended April 1, namely, 7,163 new and 20,865 old cases.

Smallpox has been discovered in the southwestern part of the city. Two white women and two white children are now at quarantine and it is expected that others will follow. Five or six other cases have been discovered in the western suburbs, and a general diffusion of the disease seems imminent there, as from the mildness of the disease its nature was not suspected and there was no attempt at isolation.

MASSACHUSETTS.

Personal.—Dr. William T. Councilman of Harvard University Medical School has been elected president of the Southern Society of Boston.

Emergency Hospital Closed. The Emergency Hospital, Springfield, which was started five years ago on the certificate principle of $1 a year for treatment, has surrendered its lease and its affairs are being closed.

New French Medical Society. A medical society has been organized at Fall River, known as the "L'Union Medicale de Fall River, Mass.," with 20 members and the following officers: President, Dr. Samuel J. Kelly, and treasurer, Dr. F. de Borgia Bergeron.

Bradford in Cleveland.—Dr. Edward H. Bradford, Boston, was the guest of honor at a complimentary dinner at the Hollenden, Cleveland, April 20, and later addressed the Academy of Medicine on "Muscle and Tendon Transference and the Relation of General to Orthopedic Surgery."

Hospital Debt Liquidated.—The liquidation of the $22,000 debt of the Springfield Hospital has been assured by the receipt of $2,460 from a benefit concert and three additional contributions of $1,000 each. The amount now pledged is $23,300, which will free the hospital from debt and leave a good nucleus for a surplus fund.

District Society Meeting.—The Hampden District Medical Society held its annual meeting in Springfield, April 17. The following officers were elected: President, Dr. Edgar M. Guild, Springfield; vice-president, Dr. Daniel F. Donoghue, Holyoke, and secretary-treasurer, Dr. Frederick S. Ward, Springfield. Drs. Daniel E. Keefe, Springfield; Arthur L. Damon, North Wilbraham, and Walter R. Weiser, Harvey W. Van Allen and James E. Marsh, Springfield, were appointed censors; Drs. Daniel E. Keefe, Walter A. Smith, Theodore S. Bacon, Everett A. Bates, Robert P. M. Ames, Frederick W. Chapin, Frederick B. Sweet, Harry C. Martin and Charles F. Lynch, Springfield; J. Philip Schneider, Palmer; Charles W. Jackson, Thorndyke; George H. Janes, Westfield, and Locero J. Gibbs, Chicopee Falls, were chosen as councilors, and Dr. James W. Hannum, Ludlow, was appointed commissioner of trials.

MICHIGAN.

Personal.—Dr. J. F. Munson, who has been assistant to Dr. Victor C. Vaughan, Ann Arbor, for the past two years, has been appointed resident pathologist at the Craig Colony for Epileptics, Sonyea, New York.——Dr. Willit J. Herrington, Bad Axe, who has been suffering from septicemia, due to an operation wound, was operated on a few days ago and is now improving.——The medical section of the Wayne County Medical Society has elected Dr. F. L. Newman, chairman, and Dr. Walter J. Wilson, secretary.——Dr. Alexander H. Scott, St. Joseph, is seriously ill with heart disease.——Dr. George W. Orr, Lake Linden, has been appointed township health officer. ——Dr. Elliott K. Herdman, Ann Arbor, has been re-elected city physician.——Dr. Charles G. Jennings, Detroit, has been elected president of the board of health.——Dr. Walter T. Parker, Fowlerville, has returned after a year in Germany.

MISSOURI.

Will Not Grant Pardon.—The governor has declined to interfere in the case of Dr. Jefferson Goddard, who is serving a ten years' sentence in the penitentiary for the murder of Fred Jackson, a laundryman of Kansas City.

Commencement.—The Ensworth-Central Medical College, St. Joseph, held its twenty-ninth annual commencement exercises, April 21, when a class of 37 received diplomas. The faculty address was delivered by Dr. O. Beverly Campbell, and Dr. James W. Heddens conferred the degrees.

Fined for Illegal Practice. "Dr." J. M. Davis, Shelbyville, who was arrested, tried and found guilty of practicing medicine without a license in Scotland County, Mo., and who appealed to the Supreme Court, has had judgment rendered against him, the decision confirming the decision of the lower court. He was fined $50.

Board of Health Sustained.—The Supreme Court on March 30 decided that the State Board of Health has the right to revoke the license of a physician for unprofessional conduct and to order a physician before it for trial. The case in point was that of Dr. S. M. McAnnally, Marble Hill, against Dr. Robert H. Goodier, Hannibal, and other representatives of the State Board of Health. Dr. McAnnally was charged by the citizens of Marble Hill with selling liquor in quantity, and also with selling liquor to minors.

Personal. Dr. Paul Y. Tupper, St. Louis, has resigned as a member of the State Board of Health.——Dr. R. M. James, Joplin, has been elected secretary of the Jasper County Medical Society.——Dr. J. Thomas Pittam, Kansas City, has been commissioned lieutenant in the medical department of the state and assigned to Battery B, Kansas City Light Artillery. ——Dr. John Young Brown, superintendent of the City Hospital, St. Louis, has returned from a trip to Texas and Mexico. ——Dr. Anselm C. Robinson, St. Louis, police physician, has been appointed police surgeon at a salary of $2,000 a year. ——Dr. H. Wheeler Bond has been appointed health commissioner of St. Louis, succeeding the late Dr. Snodgrass.——Dr. J. N. Barger, Darlington, has been elected delegate to the State Medical Association from the Gentry County Medical Association. ——Dr. A. J. Campbell, Sedalia, has been appointed

local surgeon for the Missouri Pacific Railway.——Dr. Richard L. Sutton, United States Navy, retired, and Mrs. Sutton, who have been abroad for several months, have gone to Northern Germany for the summer.

NEW HAMPSHIRE.

Appropriation for Hospital.—The Nashua city council, at its meeting March 27, appropriated $2,500 to the Nashua Hospital.

Compromises Claim.—The city government of Nashua has compromised for $911 the claim of Dr. Charles E. Congdon of about $1,800 for services during the smallpox epidemic in 1902 and 1903.

Personal.—Dr. Eugene F. McQuesten, Nashua, on March 26, completed 40 years of practice in medicine.——Dr. Timothy G. Herrick, formerly of Manchester, is reported to be critically ill in Aiken, S. C.

Consumption.—The State Board of Health has issued for gratuitons distribution a pamphlet entitled "Consumption, Its Prevalence, Cause, Restrictions and Prevention," in which it gives statistics of deaths from tuberculosis in the state.

Graduation Exercises.—The graduation exercises of the Dartmouth Medical School were held in the auditorium of Dartmouth Hall, Hanover, March 31. Dr. William T. Smith, dean of the faculty, presided. The doctorate address was delivered by Dr. Ira J. Prouty, Keene, and a class of 10 was graduated.

NEW YORK.

Personal.—Dr. Albert Van der Veer, Albany, has been made a member of the board of regents of the State University.

New Head of Lunacy Commission.—Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital, Poughkeepsie, has been appointed president of the state lunacy commission to fill the vacancy created by the resignation of Dr. William Mabon, appointed superintendent of the Manhattan State Hospital.

Examiners of Alien Insane.—Governor Higgins has permitted to become a law without his signature, Senator Raines' bill defining the powers of the board of three examiners of alien insane at the port of New York, and increasing the salaries of two of the examiners so as to make the salaries of each of the three $5,000 a year.

To Vote on Medical Ethics.—The Medical Society of the State of New York is taking a vote by mail as to whether "The Principles of Medical Ethics of the American Medical Association, being suggestive and advisory, shall be the guide of members in their relation to each other and to the public." The polls will be closed at the expiration of ten days after the submission of the question, which occurred April 27.

Bills Passed.—A bill has been passed by the senate making it a misdemeanor for anyone in authority in any city hospital to refuse admittance to any patient brought by ambulance, or to order his removal to another hospital while he is in a dangerously sick condition.——Assemblyman Hackett's bill has been passed appropriating $1,000,000 for an additional public hospital on Manhattan Island between Twentieth and Seventieth Streets.——Assemblyman Agnew's bill has been passed providing for a commission to consider means for protecting the waters of New York Bay against pollution.

"Patent-Medicine" Bill Passed Senate.—Senator Stevens' bill, providing for the proper labeling of medicinal preparations containing alcoholic, narcotic or other potent drugs and for their inspection, analysis and regulation of manufacture, passed the senate April 27 by a vote of 30 to 15. In making his plea for the passage of the measure Senator Stevens produced a letter containing the astounding statement that "patent-medicine" interests had sent $100,000 to Albany to defeat a similar measure last year, and had succeeded. In discussing the opposition to the measure, Senator Stevens said:

> There are three distinct forces against this measure: the manufacturer of "patent medicine," the retail druggist and the country newspaper. The manufacturer whose "patent medicine" contains alcohol or some potent drug in such percentage as to result ultimately in creating a drug habit is afraid his medicine will not be in demand; the retail druggist has opposed the measure because it applied to stock on hand, but his opposition has been largely withdrawn as the result of an amendment. Finally, the small newspapers are opposed and have flooded me, and I dare say every other member of this body, with circulars urging me to defeat the measure. The proprietors of these papers admit that if the measure is passed their profits will be greatly curtailed, for probably the greatest fraction of the revenue of country newspapers comes from this source. Nearly all the contracts for advertising of this sort, I am informed, have been made containing a clause specifying they shall be binding so long as no adverse legislation is passed by the State Legislature. This is, of course, only a species of blackmail by which the newspapers are permitted to retain the patronage so long as they prevent adverse legislation.

New York City.

Personal.—Dr. Minas S. B. Gregory sailed for Europe, April 26.——Dr. Thomas Darlington will make the address at the graduation exercises of the Training School for Nurses of St. Mark's Hospital.

Seaside Hospital.—The seaside hospital and park bill was signed by Mayor McClellan. This enables the city to spend $2,500,000 for land near the seashore, and it is likely that the site will be purchased at Far Rockaway, where there are four miles of beach front.

OHIO.

Forgot the Appropriation.—The legislature passed a bill creating a commission of six to secure a site for a State Hospital for Criminal Insane at Lima, but failed to make an appropriation for the erection of the building.

Found Guilty of Criminal Malpractice.—Dr. David P. Maxwell, Cleveland, charged with having caused the death of Celia Ritzer by a criminal operation, was found guilty, April 19. The penalty for the crime is imprisonment for from one to seven years.

Personal.—Dr. C. E. Sawyer, Marion, has associated with him in business his son, Dr. Carl W. Sawyer.——Dr. Floyd Swimley, Forrest, who was injured in the blowing up of an acetylene machine, has gone to Columbus for treatment of his eyes.——Dr. A. Per Lee Pease, Massillon, returned from Europe on the *Minneapolis*, April 22.——Dr. A. S. Rochester, Columbus, has been offered an appointment as surgeon in the army of Guatemala.——Dr. Sterling B. Taylor, Columbus, is suffering from septicemia, due to an operation wound, and may lose the middle finger of his right hand.——Dr. Frank Graham, Lisbon, is seriously ill with pneumonia.

PENNSYLVANIA.

Crusade Against Typhoid.—The state commisioner of health has issued a statement urging local boards of health throughout the state, and physicians, nurses and attendants on persons afflicted with typhoid fever to use the greatest care in disinfection and other means of prophylaxis.

Staff Appointments.—The following appointments have been made on the staff of the Taylor Hospital: Surgeons, Drs. John L. Griffith, Taylor, and Stephen S. Watson, Moosic, and John W. Houser, Taylor; physicians, Drs. James S. Porteous, William H. Olmstead, John J. Timlin and W. W. Myers, and consulting surgeon, Dr. Addison W. Smith, Scranton.

New Medical Inspectors.—Dr. Samuel G. Dixon, state commissioner of health, has appointed Dr. Andrew A. Cairns, chief medical inspector of the Philadelphia bureau of health, and Drs. Charles B. Penrose, Norton Downs and Alfred C. Wood, special medical inspectors for Montgomery County. The duties of the special inspectors will be to investigate all cases of contagious disease reported in the county and to inspect the streams of the county with a view to preventing pollution.

Endorse Council on Pharmacy.—At the April executive meeting of the Allegheny County Medical Society the following resolutions were unanimously adopted:

> Whereas, It appears that at the present time there is a greater and more widespread awakening than ever before on the part of the profession and the public generally through the land to a realization of the danger and impropriety of using secret or "patent medicines;" therefore be it
>
> *Resolved*, By the Allegheny County Medical Society, that:
>
> 1. It highly commends the action of the American Medical Association for the comprehensive and well-planned campaign which, by means of its JOURNAL and Council on Pharmacy and Chemistry, it is conducting against non-ethical pharmaceutical preparations.
>
> 2. It commends the *Ladies' Home Journal* and *Colliers' Weekly* for the clear, intelligent and persistent way in which they are setting forth to the public the dangers which attend the use of "patent medicines" for purging their own columns, from "patent medicine" advertisements and for exposing the shameless and utterly selfish and mendacious manner in which these nostrums are exploited.
>
> 3. It recognizes in its honored member, Dr. Adolph Koenig, the great merit which belongs to him in that, as editor of the *Pittsburg Medical Review* and later of the *Pennsylvania Medical Journal*, he steadily and persistently refused to admit to their advertising columns any unethical preparation whatsoever, a position which was for many years higher than that taken by any other medical journal in the United States; that it felicitates Dr. Koenig on the fact that THE JOURNAL of the American Medical Association has finally come to adopt the position regarding its advertising columns which he, with his co-editors, adopted for the *Pittsburg Medical Review* many years ago; at the same time it commends THE JOURNAL of the American Medical Association for this righteous, if somewhat tardy, stand which it is now taking; finally, Dr. Koenig's course with regard to advertising in the *Pennsylvania State Medical Journal* is commended to the present editor of that journal.

4. It is considered by the Allegheny County Medical Society to be highly unethical and improper for a physician to prescribe for internal use or external application any preparation of a secret character or to recommend any sanitarium or hospital where it is known that such preparations are employed.

5. It directs the committee on public policy and legislation to report to the society at the regular January meeting of each year a list of such unethical preparations advertised to the profession as shall have come to its notice.

6. The committee on legislation of the Pennsylvania State Medical Society is requested to endeavor to secure the enactment by the legislature of this state of a law providing that all manufacturers of "proprietary" or "patent" medicines shall be compelled to print on each bottle or package an exact formula of the contents; that the commonwealth shall provide for the analysis of all such medicines sold within its borders, and that a heavy fine be imposed for the publication of a fraudulent formula.

7. It directs its secretary to send a copy of these resolutions to the Editor of THE JOURNAL of the American Medical Association and to the editor of the *Pennsylvania State Medical Journal;* to send a copy of section 2 of these resolutions to the editors of the *Ladies' Home Journal* and *Collier's Weekly,* and that until otherwise directed it is ordered that section 4 of these resolutions be printed on every notice of the regular meetings of this society.

Philadelphia.

Society Entertained.—Dr. L. Webster Fox entertained the Ophthalmological Society of the Medico-Chirurgical College, named in his honor, at the University Club, April 28.

New Branch Society Organized.—The petition for a Northwest branch of the Philadelphia County Medical Society, which was signed by a large number of representative physicians residing north of Huntington Park Way and east of Old York Road, was favorably acted on at the business meeting of the society, April 18.

Personal.—Dr. and Mrs. Harry K. Carey have sailed for England.——Dr. Charles Mitchell sailed for Europe, April 28. ——Dr. John H. Musser addressed the graduating class of nurses of the Harrisburg Hospital, April 17.——The home of Dr. T. Mellor Tyson in Rosemont was destroyed by fire April 23.——Dr. DeForest Willard, professor of orthopedic surgery in the University of Pennsylvania, is seriously ill at his home with pneumonia.——Dr. Ross V. Patterson, assistant chief resident physician of the Philadelphia General Hospital, has resigned.

To Aid San Francisco Physicians.—The Philadelphia County Medical Society held a special meeting, April 25, and formulated plans for the relief of San Francisco physicians, and appropriated $200 to the relief fund and appointed the following committee to further the movement: Drs. James M. Anders, J. F. Schamberg, William S. Wray, John H. Musser, Hobart A. Hare, Albert M. Eaton, John B. Turner, Thomas H. Fenton and C. L. Bower.——The Philadelphia Homeopathic Medical Society took similar steps and appointed a committee to further the movement.——The Alumni Society of the University of Pennsylvania and Jefferson Medical College have also taken steps to help their destitute brothers in the stricken city.

Health Report.—The total number of deaths reported for the week reached 587. This is an increase of 9 over the number reported last week, and an increase of 35 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 27; measles, 8; pertussis, 6; diphtheria, 17; meningitis, 5; consumption, 76; cancer, 26; apoplexy, 14; heart disease, 57; acute respiratory disease, 79; enteritis, 34; Bright's disease, 50; accidents, 28, and marasmus, 4. There were 332 cases of contagious disease reported, with 48 deaths, as compared with 357 cases and 27 deaths in the preceding week. There were 216 new cases of typhoid fever reported, with 27 deaths, as compared with 222 cases and 20 deaths reported in the previous week.

RHODE ISLAND.

Smallpox. Two cases of smallpox have been discovered in pupils of the Darlington school, Pawtucket.

Isolation Hospital Burns.—Fire, which destroyed the Isolation Hospital, Woonsocket, April 8, caused a loss of about $4,700.

Sixty Years of Practice. Dr. James W. C. Ely, dean of the medical profession of Providence, was the guest of honor at a dinner given by his fellow practitioners, April 27, in honor of the sixtieth anniversary of his entry into the practice of medicine.

Hospital Staff Changes.—Dr. Joseph C. Maranda has been appointed physician to the Woonsocket Hospital, vice Dr. Joseph Hils, deceased. Drs. William F. Barry, Elisha D. Clarke, J. Edgar Tanguay and Joseph T. Roswell have been appointed members of the staff of the hospital.

SOUTH CAROLINA.

Alumni Election.—The Alumni Association of the Medical College of the State of South Carolina, Charleston, held its annual meeting April 11, at which the following officers were elected: Dr. Robert S. Cathcart, Charleston, president; Drs. T. H. Tuten, Crockettsville; J. R. Bell, Due West; Henry Horlbeck, Columbia, and Arthur F. Doty, Sumter, vice-presidents, and Dr. C. Bunting Colson, Charleston, secretary and treasurer.

Insurance Fees.—Dr. William Weston, Columbia, S. C., sends us a copy of the following resolutions, which were adopted at the meeting of the State Medical Association, held in Columbia, April 17:

WHEREAS, Many of the life insurance companies have notified their medical examiners of a reduction of the examining fee from $5 to $3; and

WHEREAS, We, as physicians, realizing the responsibility incident to proper examination of the individual, believe such reduction to be unjust; therefore be it

Resolved, That in the House of Delegates, in session assembled, we do hereby declare such reduction to be unjust and respectfully request that no physician legally authorized to practice medicine in South Carolina accept such reduction of fee; and further that any physician accepting such reduction be guilty of a breach of professional courtesy.

Resolved, That it is the sense of the House of Delegates that hereafter in each examination for life insurance in which urine analysis is required the minimum fee shall be $5 and that when no such analysis is required the minimum fee shall be $3.

Resolved, That the several component societies forming this state association be requested to adopt these resolutions.

VIRGINIA.

Established Club Rooms.—The Newport News Medical Society has established headquarters in the Coleman Building, which will be open at all times, and where the current issue of medical journals, books of reference and other literature of value to the profession will be found on file.

SAN FRANCISCO CATASTROPHE.

Present Conditions in California—Needs of Physicians—The Work of Relief and Aid—List of Uninjured Physicians.

Report largely by telegraph from Dr. Philip Mills Jones.

The sanitary condition of the city is excellent considering the very limited water supply and the fact that all house toilets are ordered closed. Latrines and closets over sewers and manholes are generally used, and the latrines are covered with lime daily. No new cases of communicable diseases have been reported since the fire, and the deaths have been only 352, or about double the normal number. No cases of typhoid have yet been reported, although every preparation has been made to treat the disease should it occur. A typhoid hospital capable of holding 1,200 patients has been erected in Golden Gate Park. There are at present 47 cases of contagious disease in the city, mostly measles and scarlet fever. All are in quarantine and all were ill prior to April 18. All cases of tuberculosis have been sent to the San Francisco City and County Hospital, and all other cases to the contagious ward of the Children's Hospital or to the Emergency Contagious Disease Hospital at Harbor View.

The city has been divided into three sanitary districts in charge respectively of Drs. J. Henry Barbat, John M. Williamson and Charles E. Jones. Each of these districts is divided into eight subdistricts with from 15 to 20 physicians assigned to each. House-to-house inspection is made almost daily. Instructions are given to boil all water and milk, to cook all vegetables, and not to use the house closets, and the military authorities see that the orders of the sanitary inspectors are carried out.

Dr. E. C. Dalton, Salem, Ore., was one of the first to come to the city with supplies and established an emergency hospital which is doing most excellent work. Among others who came early to the assistance of the city are Dr. J. F. Shiels, New York City, and Dr. P. J. H. Farrell, Chicago, with about 30 other physicians. The health authorities report that there is now no necessity for outside medical aid, but that there is urgent need of medical supplies, drugs, medicines and minor surgical instruments.

Dr. Jones also says: "Please announce that it is almost impossible to get private telegrams from San Francisco east, as the press is monopolizing all lines. Also announce that there will be destitution among San Francisco physicians, and that as county officers can not be found, remittances should be sent to Dr. Frank Adams, ex-president of the Medical Society of the State of California, 1230 Telegraph Avenue, Oakland, or to myself, at the same address, and all funds will be turned over by us to the officers of the county society as soon as possible.

"The *California State Medical Journal* for May, of four pages only, is now on the press.

"No one not here can have the faintest idea of the situation. Please publish my thanks for many telegrams as regards my personal safety and for many offers of help."

Dr. D. W. Montgomery has notified THE JOURNAL that the following physicians and their families are saved and uninjured: Drs. William C. Riley, Joseph Bayer, E. F. Donnelly, George H. Powers, A. Barkan, Philip Collischonn, Dr. Barndt, Dr. Hadely, S. Cleary, A. B. Grosse, René Bine, A. P. O'Brien, H. M. Sherman, S. J. Hunkin, W. H. Barbat, W. W. Kerr, John Gallwey, Douglass W Montgomery, W. B. Lewitt, Morris Herzstein, W. S. Thorne, W. Thorne, Lucia M. Lane, Virginia Smiley, Emma Sutro Merritt, Edna Field, George W. Merritt, and Victor Vecki. Dr. J. N. Williamson received a scalp wound from a falling brick, but was otherwise uninjured. Dr. Rether's family is safe.

The St. Louis Medical Society to May 1 had collected $464 for the physicians of California who need aid as a result of the earthquake and fire.

The Norfolk District (Mass.) Medical Society, at a special meeting, April 24, voted to omit the usual dinner on the occasion of the annual meeting, and instead, to contribute $300 for the medical fraternity of California.——The Suffolk District Medical Society has appropriated $500 for the same purpose.

A benefit for the women physicians of San Francisco will be given by the women physicians of Philadelphia in the Broad Street Theater, May 29.

THE CALIFORNIA FUND.

Subscription List Opened for Relief of Physicians in Need.

As announced last week, the Board of Trustees has authorized that the columns of THE JOURNAL be opened for subscriptions to a fund for the relief of those physicians who have been left in destitute circumstances through the California earthquake and fire. The local committee in Chicago to have supervision of the fund in behalf of the American Medical Association consists of: Dr. Frank Billings, Treasurer of the American Medical Association, Chairman; Dr. M. L. Harris, Resident Trustee of the American Medical Association; Dr. C. S. Bacon, Chairman of the Section on Obstetrics and Diseases of Women, and President of the Chicago Medical Society; Dr. R. B. Preble, Chairman of the Chicago Medical Society Committee, and Dr. George H. Simmons, Editor of THE JOURNAL of the American Medical Association.

Subscriptions are solicited from those who feel able to give. Make checks payable to the American Medical Association, marking the check "California Fund." Send to the American Medical Association, 103 Dearborn Avenue, Chicago, marking the envelope in lower left-hand corner, "California Fund." An acknowledgment will be made in THE JOURNAL of each contribution. Local or county societies that wish to make a contribution as a body and prefer to send it through the American Medical Association Fund, may do so and credit will be given to the society and the names of the individual contributors will also be printed.

The question regarding the acceptance of contributions from those not members of the medical profession was discussed by the committee representing the American Medical Association, and it was agreed that such contributions already made he accepted with thanks. The committee decided, however, that as this fund is for physicians only and intended as a donation by the profession to its brethren in need, that outside contributions hereafter be declined.

The following contributions, not acknowledged last week, have been received up to 9 o'clock Wednesday morning:

INDIVIDUAL CONTRIBUTIONS.

J. F. Jenkins, Tecumseh, Mich.	$ 5.00
Frank C. Todd, Minneapolis	10.00
C. H. Vinton, Wernersville, Pa.	5.00
N. H. Kern, Thawville, Ill.	2.00
G. L. Greenawalt, Fort Wayne, Ind.	10.00
W. C. Wightman, Wayne, Neb.	5.00
J. F. Burnham, Lawrence, Mass.	2.00
Henry Belt, New York	5.00
W. Q. Spilling, Lonaconing, Md.	2.00
R. J. Curdy, Kansas City	5.00
W. C. Kelley, Morgantown, W. Va.	5.00
Frederick Peterson, New York	25.00
D. D. Monroe, Hillrose, Colo.	2.00
C. A. Kirkley, Toledo, Ohio	15.00
F. B. Harrington, Boston	25.00
R. G. Cook, Rochester, N. Y.	5.00
C. B. Turner, Bluemont, Va.	1.00
Physicians' Defense Co., Fort Wayne, Ind.	200.00
T. J. Happel, Trenton, Tenn. (additional)	5.00
W. A. Chamberlin, Waseca, Minn	5.00
C. C. Stephenson, Little Rock, Ark.	5.00
S. W. Woodyard, Greeneville, Tenn.	2.00
W. J. Judy, Dunlevie, W. Va.	1.00
Wm. Jacobsohn, New York	1.00
O. S. Werner, Lindstrom, Minn	$ 1.00
B. W. Hale, Tallula, Ill.	5.00
E. F. Cushing, Cleveland, Ohio	50.00
T. E. Holland, Hot Springs, Ark.	25.00
J. N. and A. T. McCormack, Bowling Green, Ky	100.00
	529.00
Acknowledged last week	342.00
Total	$871.00

CHICAGO MEDICAL SOCIETY CONTRIBUTIONS.

The following amounts have been received through the committee appointed by the Chicago Medical Society since the list of last week:

Abt, A. I.	$25.00
Abt, J. I.	5.00
Alcorn, S. J.	5.00
Allport, W. H.	10.00
Anderson, J. A.	5.00
Anonymous	1.00
Armstrong, J. B.	5.00
Babcock, Robert	25.00
Baker, W. E.	2.00
Bannister, H. M.	4.00
Barnes, Walter S.	10.00
Barrett, C. W.	10.00
Bass, G. E.	10.00
Banmann, E. S.	4.00
Baumrucker, O.	1.00
Beck, E. G.	5.00
Benz, F. A.	5.00
Best, John E.	3.00
Bettman, Boerne	5.00
Betz, H. E.	2.00
Bevan, A. D.	50.00
Blankinl, A.	5.00
Bieringer, W. A.	5.00
Billig, G. W.	5.00
Boehm, P.	10.00
Borucki, F. M.	1.00
Bray, H. T.	3.00
Braylon, S. H.	5.00
Brinckerhoff, C. E.	5.00
Bronillet, R. J.	2.00
Brown, Janetta I.	3.00
Brown, R. R.	2.00
Brumback, A. H.	10.00
Bushnell, Charles H.	10.00
Butterman, W. F.	10.00
Cameron, A. M.	5.00
Casselberry, W. E.	5.00
Champlin, S. A.	2.50
Chandler, F. E.	10.00
Chenoweth, C.	5.00
Chicago Society of Internal Medicine	309.00
Christie, E.	10.00
Christoph, E. O.	5.00
Clark, Jennie B.	5.00
Cleveland, G. W. H.	10.00
Cobb, J. P.	10.00
Conley, T. J.	5.00
Contributions received by John S. Davis.	21.00
Courtright, C. W.	5.00
Corbett, M.	5.00
Crotan, A. C.	5.00
Cuthbertson, Wm.	5.00
Dal, J. W.	5.00
David, F. E.	5.00
Davis, N. S.	5.00
Davis, T. A.	25.00
Decker, Adolph	2.00
Delamater, N. B.	5.00
Delprat, J. C.	10.00
Detlefsen, F.	5.00
Dewey, Richard	5.00
Dewitz, O. J.	2.50
Dinet and Delfosse	25.00
Duncan, Wm. E.	5.00
Edgar, George J.	5.00
Ehrmann, F. J. E.	15.00
Evatt, William	2.00
Faber, Paul J.	10.00
Faith, Thomas	10.00
Fisher, F. A.	5.00
Fischkin, E. A.	5.00
Fishman, L.	2.00
Fowler, J. V.	10.00
Framed, A. K.	3.00
Frankenthal, Lester	25.00
Froom, A. E.	5.00
Frothingham, H. H.	5.00
Gaebler,	5.00
Galloway, G.	5.00
Glenn, F. L.	5.00
Goldsmith, A. A.	5.00
Goldsnohn, A.	15.00
Goodkind, M. L.	50.00
Gowen, Guy A.	10.00
Graves, Robert	5.00
Hagens, G. J.	5.00
Hardy, H. T.	5.00
Harnisch, F. C.	5.00
Hartman, F. S.	25.00
Harvey, P. F.	10.00
Head, G. P.	5.00
Heineck, A. P.	10.00
Hengotin, Fernand	50.00
Hequembourg, J. P.	5.00
Herrick, J. B.	$25.00
Hess, F. A.	5.00
Hess, J. H.	5.00
Hillemeyer, W. A.	2.00
Hobson, Sarah M.	5.00
Holmes, E.	2.00
Hosmer, A. B.	5.00
Howland, E. D.	3.00
Hunt, J. S.	5.00
Hunt, Marie L.	2.00
Hyde, James N.	15.00
Jennings, J. A.	10.00
Johannes, A. D.	3.00
Johnson, Frank S.	20.00
Jones, C. S.	2.50
Kales, J. D.	5.00
Karl, Herz	3.00
Kauffman, J. S.	5.00
Kercher, John	5.00
Kerr, Ellis K.	5.00
King, C. B.	5.00
Kreissl, F.	10.00
Krueger, J. H.	2.00
Lackner, E.	10.00
Lagorio, Antonio	5.00
Lawrence, Robert	4.00
Leonard, R. L.	5.00
Loeb, Ludwig M.	5.00
Loew, Alex.	5.00
Loew, Arthur	10.00
Luckhardt, Albert E.	2.00
Ludwig, H. M.	5.00
Lyons, John A.	5.00
McArthur, L. L.	25.00
McEwen, E. L.	5.00
McGrath, M. H.	10.00
McGrory, J. J.	5.00
Maclay, O. H.	5.00
McLaughlin, A. W.	5.00
MacLellan, Chas.	4.00
McQuarrie, J. K.	5.00
Maguy, F. A.	5.00
Marquis, G. P.	25.00
Martin, William	25.00
Maschek, F. J.	5.00
Matthei, O. H.	5.00
Memelsdorf, A.	3.00
Merrill, J. D.	5.00
Mettler, L. Harrison	10.00
Miller, J. L.	5.00
Mitchel, O. L.	5.00
Mix, C. L.	5.00
Mochen, Sidney B.	5.00
Moessner, F. R.	1.00
Monasch, J. F.	5.00
Moore, M. T.	5.00
Motter, Thomas I.	10.00
Moyer, H. N.	25.00
Mueller, Frederick	10.00
Nash, T. Wylie	1.00
Nelson, Daniel T.	5.00
Nelson, Engelbrecht	5.00
Novak, Anna F.	5.00
O'Brien, A. G.	5.00
Ochsner, Albert J.	25.00
Ochsner, E. H.	10.00
Parks, William R.	25.00
Patera, F. J.	10.00
Patton, E. P.	4.00
Pech, Albert	5.00
Pickard, W. S.	5.00
Pierron, A. J.	10.00
Pletrowicz, S. R.	5.00
Pigall, Joseph S.	10.00
Plummer, S. C.	5.00
Porter, John L.	5.00
Podstata, V. H.	5.00
Porter, Robert H.	10.00
Pusey, William Allen	10.00
Quirk, T.	10.00
Quirk, John	10.00
Raymond, Henry I. (Columbus, Ohio)	8.00
Reading, A. H.	5.00
Reading, E. M.	10.00
Redlich, H.	5.00
Reis, Emil	25.00
Reise, John A.	2.50
Renn, T. H.	5.00
Rezanka, G. W.	5.00
Rhodes, J. E.	10.00
Roan, C. F.	5.00
Roehler, H. B.	2.00
Root, Eliza H.	5.00
Rosenberg, A. J.	5.00

Sanderson, E. T.	$10.00	Thometz, J. J.	$ 5.00
Salisbury, J. H.	5.00	Train, J. A.	5.00
Sanford, W. C.	5.00	Trowbridge, E. G.	6.00
Schroeder, W. E.	10.00	Urheim, J. L.	5.00
Schultze, M.	5.00	VanDellen, R. L.	5.00
Schwab, Leslie W.	3.00	Wallace, John R.	5.00
Scott, W. F.	5.00	Walls, F. X.	25.00
Seufert, Edward C.	5.00	Vanderhook, H. W.	5.00
Sharp & Smith	50.00	Wagner, Carl	10.00
Shears, Geo. F.	25.00	Williams, J. F.	5.00
Shockey, G. C.	1.00	Weatherford, Franklin A.	5.00
Simon, Ludwig S.	10.00	Webster, E. M.	5.00
Small, Arthur A.	15.00	Webster, G. W.	10.00
Smith, Julia H.	5.00	Webster, J. Clarence	100.00
Smith, Robert A.	5.00	Wendtt, C. D.	10.00
Stearns, William G.	10.00	Wenzlick, Wm.	5.00
Steele, D. A. K.	25.00	Whalen, C. J.	5.00
St. John, Leonard	25.00	Whise, Melchior	2.00
Stolp, B. C.	25.00	White, W. S.	10.00
Storer, W. D.	10.00	Whitford, William	5.00
Stubbs, J. Chase	5.00	Wild, Theo.	5.00
Swenson, Carl G.	5.00	Wild, Theo. Jr.	5.00
Tallaferro, A.	5.00	Wilkinson, L.	5.00
Thilo, G.	10.00	Worthington, Harry C.	5.00
Thome, A. G.	5.00	Young, L. M.	5.00

	2,350.00
Acknowledged last week	1,023.00
Total Chicago Med. Soc. contributions	3,373.00
Total individual contributions	871.00
Grand total	$4,244.00

GENERAL.

No Longer Members of the Proprietary Association.—The Purdue Frederick Company asks us to announce that the firm is no longer a member of the Proprietary Association of America.

National Tuberculosis Association.—The second annual meeting of the National Association for the Study and Prevention of Tuberculosis will be held at the New Willard Hotel, Washington, D. C., May 16-18. Among the papers to be read are: "Immunity in Tuberculosis," Dr. Simon Flexner, New York; "Tuberculosis Nostrums," Samuel Hopkins Adams, New York; "Industrial Sickness Relief Associations and Tuberculosis," Dr. Arnold C. Klebs, Chicago; "The Kidneys in Tuberculosis," Dr. Joseph Walsh, Philadelphia; "Common Errors in the Technic of Examining Sputum for Tubercle Bacilli," Dr. Charles L. Minor, Asheville; "Therapeutic Use of Tuberculin Combined with Sanatorium Treatment of Tuberculosis," Dr. Edward L. Trudeau, Saranac Lake. Others speakers will be Drs. Frank Billings, John S. Fulton, J. W. Irwin, M. P. Ravenel, Vincent Y. Bowditch, Karl von Ruck, L. Hektoen, Theobald Smith, Norman Bridge, Sherman J. Bonney, S. A. Knopf, Robert G. Le Conte, Charles H. Mayo, Joseph Bloodgood, W. P. Northrup, A. Jacobi, John Lovett Morse, J. P. Crozer Griffith, etc. A round-trip rate of one and one-third fares on the certificate plan has been granted by the Trunk Line Association, and other associations are expected to do the same.

FOREIGN.

Increase of Pulmonary Tuberculosis Among School Teachers in Great Britain.—It is stated on reliable authority that phthisis is greatly on the increase among school teachers in Great Britain. It has been shown that by far the greater number of such cases occurred among those who had entered the teaching profession within the past few years. It is also said that the habits of the teachers have had much to do with this condition of things, as they stayed in the vitiated atmosphere of the schools too long.

Organization of the Profession in Austria.—It is regarded as remarkable that the 900 country practitioners of lower Austria have so solidly united in their attempt to obtain more just remuneration from the authorities for vaccinating the poor and similar official duties. Their "passive resistance," as they call it, the first effort at organization of the profession in Austria has presented a solid front without a single backslider. The physicians in Vienna not only officially endorsed their stand, by resolutions and appropriations voted in the medical societies, but a personal canvass has been made to obtain the signed statement of individual physicians that they would not interfere or take the place of any of the resisting physicians under any circumstances. An unexpected but welcome result of this concerted action is that the numerous warring factions of physicians, representing various political parties, etc., have all been brought together and fused into one general committee for sustaining the organized action of their colleagues in lower Austria. The "passive resistance" was described in these columns on page 970. All signs point to a speedy and satisfactory outcome of the struggle.

The Boston Session

(*Continued from page 1377.*)

Faradization of the Motor Cortex of the Human Brain. James Hendrie Lloyd, Philadelphia.

Discussion to be opened on last two papers by Morton Prince, Boston.

Trauma as a Cause of Insanity. Charles W. Burr, Philadelphia.

The Serum Treatment of Exophthalmic Goiter. J. J. Putnam and G. A. Waterman, Boston.

The Pathology of Paralysis Agitans, with a Report of 12 Cases of Necropsy. C. D. Camp, Philadelphia.

Personal Experience in the Treatment of Tabes by Coördinative Exercise. E. W. Taylor, Boston.

Multiple Neuritis, Non-diphtheritic, in Children. H. M. Thomas and H. S. Greenbaum, Baltimore.

A Hypothesis of the Iris Reaction in Convergence, and a Method of Testing this Reaction Clinically. William Pickett, Philadelphia.

Landry's Paralysis, with a Report of Four Cases. J. N. Hall and S. D. Hopkins, Denver.

Clinical Physiopathology: The Need of a New Classification of the Diseases of the Nervous System. L. H. Mettler, Chicago.

Attacks of Hysterical Aphonia Occurring in a Patient Subject to Typical Epileptic Seizures. Theodore Diller, Pittsburg, Pa.

The Gradual Cure of Hysterical Paralysis. Howell T. Pershing, Denver.

Neurasthenia as Modified by Modern Conditions and Their Prevention. Thomas C. Ely, Philadelphia.

The Borderland of Insanity in Its Clinical Aspects. John Punton, Kansas City, Mo.

A Further Study of Association Neuroses. John E. Donley, Providence, R. I.

Prolonged Periods of Unconsciousness in Epileptic and Allied States. Harold N. Moyer, Chicago.

The Therapeutic Outlook in Epilepsy. W. P. Spratling, Sonyea, N. Y.

The Remedial Value of the Prolonged Warm Bath in Cerebrospinal Irritability. Edward B. Angell, Rochester, N. Y.

Correspondence

INSURANCE EXAMINATION FEES.

A Protest from Dr. McCormack, and a Plea That Physicians Stand Together in Opposition to a Gross and Unnecessary Injustice.

Bowling Green, Ky., April 30, 1906.

To the Editor:—The simultaneous and uniform reduction of fees for medical examinations recently made by the Mutual Life of New York, the Equitable and several other old line life and accident insurance companies, and the other information bearing on the same point, leaves little room for doubt that this was done as the result of a carefully prearranged and concerted understanding. Sprung on us midway between the meetings of our national and state associations, without even the courtesy of a notice, or an opportunity for conference or protest, as employers would not now attempt to do in dealing with miners or bricklayers, the profession was taken completely by surprise. Expecting some official action by their organizations, many quietly put the formal acceptance of the reduction requested by the companies in the waste-basket, while many others, without advisors, and not knowing what their competitors would do, reluctantly and resentfully signed and returned the agreement. It was all an adroit and well devised plan of the companies to deal with the isolated and individual physician instead of with the organized profession.

And there were abundant reasons for believing that it would succeed. Eleven years before the New York Life, the original and arch sinner against the best interests alike of their policyholders and the profession in this regard, had cut its fee in the same unceremonious and discourteous way, and probably a majority of leading physicians in all sections of the country failed to resent the recognized indignity. At that time we

had no real organization anywhere, the profession was living in more or less suspicion and discord in most communities, and many felt that it would be useless to offer single-handed resistance to this then respected and powerful corporation. But it is far different now. We already have societies in over 2,400 of the 2,830 counties in the United States, with a total of 60,000 members, embracing nearly all of the more progressive and intelligent elements of the profession, and our organization is fresh in its infancy. The counties not yet organized are in the sparsely settled regions, and most of those outside of the membership where societies exist want to come in and co-operate with us for the promotion of their own and the common welfare.

In most states many individual county societies have acted promptly in this matter, even without the leadership and concert of action so much needed, while in several states steps have been taken to secure uniform resistance to the injustice. The society of Pike County, Illinois, pledged its members to make no examinations for old line companies for less than $5, or for industrial or fraternal orders for less than $2 or $3, and has requested every other county society in the state to join in the movement. I have been present at meetings almost daily for four weeks where this request met with a most cordial response. A similar policy has been inaugurated in Kentucky and other states and can easily be made general, as the feeling is widespread, not only that the profession was most unjustly and unkindly treated in this matter, but that it was done in such a disdainful and discourteous manner that we can not submit to it without loss of prestige and dignity.

The requirements of medical examiners have always been exacting. It is now necessary that they should have had four years of special training and several years of practical experience before they are permitted to undertake this important duty. Their selection has always been made with care and from the highest class of the profession. This is eminently proper. Cheap and incompetent doctors are likely to prove as dangerous to the best interests of policy-holders in mutual insurance affairs as they have always been as family physicians. And now this large class of specially trained, selected and loyal men, without the common courtesy of notice or even so much as a "By your leave," are asked to submit to a uniform reduction of fees amounting practically to 40 per cent., as most examinations are for small policies. All this is done, too, under the specious and misleading plea of economy, under the leadership of such eminently worthy men as Mr. Paul Morton, who, without a day of training for his duties, was taken from a position of high honor, with a salary of $8,000, and put at the head of the Equitable on a salary of $80,000, and Messrs. Peabody and Orr, similarly lacking in special training, who have been made presidents respectively of the Mutual and New York Life on salaries of $50,000 each, the latter being equal to that paid to the President of the United States. These gentlemen succeeded to offices of which they are no doubt in every way worthy because of the scandal and popular outcry, never before equaled in the financial history of this country, at least partly due to the inordinate and disproportionate salaries paid their predecessors. On the false assumptions that their own compensation had been largely reduced, these still high salaried officials had scarcely warmed their new seats before they began to institute reforms at the expense of their medical subordinates, a popular and long-favored pastime with lay officials of almost every class. It is true that a reduction was made in other departments, in many of which there had been more or less scandal, of 20 per cent., but the medical department, against which, to the honor of our profession be it said, there has never come even a breath of suspicion, having no friends at court to make a plea for it, was summarily reduced 40 per cent. This would have been bad enough if our officials had been given a hearing in our behalf, but I submit that the manner in which it was all done was far more humiliating and hurtful than the financial loss and that it should provoke a manly and dignified resentment at the hands of every lover of his profession.

It is suggested that examiners who have not agreed to accept the reduction go on making examinations whenever requested to do, charging full fees in every instance, and bringing suit when not paid wherever legal service can be had on agents. It is advised that others who have formally accepted the reduction, under the impression that there would be no uniform resistance, write at once, recalling the same. Our friends are advised not to resign, but simply to "stand pat." In addition, it is urged that every medical man in this country begin at once, actively and persistently, to throw his influence to the Northwestern, Mutual Benefit, Massachusetts Mutual and other well-known and stable companies which have been more honestly and economically managed, and which have also refrained from this unkindness to our already underpaid profession.

If our friends are willing to give the time and trouble to this work which its importance demands, we can easily control the situation in several states and in a majority of counties in a few months, can demonstrate what organized medicine stands for in a small field, where no charity or sentiment is involved, and at the same time protect ourselves from injustice from other sources, and encouraged by what seemed would be our tame submission to this great wrong. It is almost equally important, while engaged in this work, to free our members once for all from the large and almost gratuitous work done for industrial and fraternal orders. This has been in the hands largely of the poorest and humblest in the profession, those least able to protect themselves, and for concerns which relatively sell insurance at the highest price. Their examination requirements are tedious and exacting, and we should insist that their fees be so regulated as to give our less fortunate brethren reasonable compensation.

It has been in my mind to suggest that examiners in every county in the United States secure the proxies of all policy-holders in their respective jurisdictions, in the name of the president, secretary or some designated representative of the Association, but it does not seem advisable to do this at present, if at all. It would be easy for the profession to become an important if not a determining factor in the reorganization of most of the companies. Our best interests and those of the policy-holders are mutual and inseparable. Old examiners have the names of all policy-holders in their respective jurisdictions on their ledgers, they know them personally, and on assurance that our representative will co-operate with the state insurance commissioners and others who are conservatively striving to free these corporations from the evils so long involving them, there should be no great difficulty in securing nearly every proxy in most counties. This would be greatly assisted by the fact that the legislature of New York has recently canceled all outstanding proxies and postponed the election of new directors until October. This is only a tentative suggestion which came into my mind, and it will not be pressed without the official sanction of the House of Delegates at Boston. It is important that all matters of grave concern like this should be managed in the broad, conservative and statesman-like way which will commend itself to all right-thinking people in and out of the profession.

State and independent journals are respectfully requested to give this a place in their columns, with such editorial comment as may be deemed proper. It is the duty of our organization, and especially of its official organs, intelligently and conservatively to guard every interest of the rank and file of the profession. The chief agency in doing this, and the source of all power for doing it, is in our system of county societies. Most of them have all the machinery ready at all times; they can be called together on short notice, and it is urged that they take such action everywhere as will best safeguard the rights and dignity of their members.

Speaking two or three times every day, and being on the road most of the time when not speaking, this communication has been prepared under great difficulties, and is very imperfect. I am not engaged in practice, will probably never make another insurance examination, and consequently have no personal interest in the matter. My reason for taking up the work was that I found our friends at sea about it, indignant and resentful, but without a plan for securing the concert of action so manifest in the policy of those who had visited this unnecessary and unmerited injustice on us, and after all, it

seemed to come more naturally to my department than any other. I found also that many of those to whom we are accustomed to look for guidance are busy men in other fields, not even indirectly connected with this interest, and hence it is difficult for them to appreciate its importance to the rank and file of the profession.

Since this was written it has been suggested by one of my best personal friends, who is equally interested in one of the great life insurance companies and our profession, that we ought to be estopped from resistance in this matter because we so long submitted to the same injustice from some of the other old line and all of the industrial and fraternal orders. As I have said, we were unorganized then and could only act as individuals. Whether old or new, acute or chronic the complaint is the same, and my suggestion is that the same remedy is indicated for all of the companies which have adopted this policy at any time, and that it be uniformly applied.

J. N. McCORMACK.

Marriages

WALTER W. HULL, M.D., to Miss Ruth Jones, both of Kearney, Neb., April 19.

LUCIAN DEMENT LEE, M.D., to Miss Nora Lawrence, both of Centre, Ala., May 1.

RALPH RAYBURN COBLE, M.D., to Miss Lucile Bowman, both of Spencer, Ind., April 23.

CHARLES L. RESONER, M.D., to Miss Marie Anderson, both of Hartford City, Ind., May 1.

HARRY K. CAREY, M.D., Philadelphia, to Miss Constance M. Beddoe of Bedford, Ind., April 26.

ALBERT SETTLE, M.D., Kansas City, Mo., to Miss Beatrice Norman of Lawton, Okla., April 25.

CHESTER HARLAN CLARK, M.D., Beloit, Wis., to LENNA EMELINE JONES, M.D., of Chicago, April 27.

GEORGE S. ARMSTRONG, M.D., Spokane, Wash., to Miss Mary Agnes Meeds of Zanesville, Ohio, April 25.

STEPHEN B. SIMS, M.D., to Mrs. Sarah Guernsey, both of Frankfort, Ind., at Los Angeles, Cal., April 21.

H. M. IMBODEN, M.D., Clifton Springs, N. Y., to Miss Edith Sprecher Grabill of Lancaster, Pa., April 20.

DAVID GALEN MCCAA, M.D., Lancaster, Pa., to Miss May Estella Yeiser of Meyerstown, Pa., April 25.

MARTIN F. M. HARMANN, M.D., St. Louis, to Miss Margaret Elizabeth Johnson of Charleston, Mo., April 17.

MAURICE OSTHEIMER, M.D., Philadelphia, to Miss Martha Gibson McIlvain of Downingtown, Pa., April 18.

ALBERT S. THOMPSON, M.D., Mount Horeb, Wis., to Miss Marie Anderson of Minneapolis, Minn., April 18.

DARWIN E. BROWN, M.D., Diamondville, Wyo., to Miss Margaret Anneta Greer of Fort Madison, Iowa, April 10.

JOSEPH GOLDBERGER, M.D., assistant surgeon, United States Public Health and Marine-Hospital Service, Washington, D. C., to Miss Mary Farrar of New Orleans, April 19.

Deaths

Rhoades Stansbury Sutton, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865; surgeon to Terrace Bank Hospital for Women, Allegheny, from 1883 to the present date; chief surgeon of the Second Brigade, Third Division of the First Army Corps in the Spanish-American War; ex-president of the American Academy of Medicine, Mississippi Valley Medical Association, and Pittsburg Obstetrical and Gynecological Society; in 1884 chairman of the Section on Obstetrics and Gynecology of the American Medical Association; for many years vice-president of the American Gynecological Society and president of the Pittsburg Gynecological Society; member of the British Medical Association; British Gynecological Society, and International Gynecological Society; for a long time proprietor of a hospital in Allegheny, known by his name; eminent as a gynecologist and abdominal surgeon, and a frequent contributor to the medical journals, especially those connected with surgery and gynecology, died suddenly from heart disease on a street car in Pittsburg, April 21, aged 65.

John C. Pegram, Jr., M.D. Harvard University Medical School, Boston, 1897; of Providence, R. I.; a member of the American Medical Association, American Academy of Medicine, Massachusetts Medical Society, Rhode Island Medical Society, Amos Troop Medical Club, Providence Medical Association and Friday Evening Medical Club; medical examiner for the city of Providence; visiting surgeon to the Rhode Island Hospital; orthopedic surgeon to St. Joseph's Hospital and the Rhode Island Catholic Orphan Asylum; demonstrator of anatomy in Brown University; consulting surgeon to Butler Hospital for the Insane; assistant surgeon of the First Rhode Island Light Infantry, died at the Corey Hospital, Brookline, Mass., April 26, from complications following an operation for appendicitis, a week before, aged 34.

George W. Beggs, M.D. Rush Medical College, Chicago, 1862; major and surgeon of the One Hundred and Sixth Illinois Volunteer Infantry during the Civil War; a member of the Iowa State Medical Society, Woodbury County Medical Society, and Association of Military Surgeons of the United States; for many years local surgeon to the Illinois Central and Chicago, Milwaukee & St. Paul railways, and for ten years president of the Sioux City College of Medicine, died at his home in Sioux City, April 10, from kidney disease, after an illness of two years, aged 68.

David B. Devendorf, M.D. Geneva (N. Y.) Medical College, 1845; for fifty years a practitioner of Walworth County, Wis.; assistant surgeon of the First Wisconsin Volunteer Infantry; later surgeon of the Nineteenth Wisconsin Volunteer Infantry, then chief surgeon of the Fourth Brigade, Eighteenth Army Corps; medical inspector under General Smith, and finally medical purveyor of the Army of the James under General B. F. Butler; physician for the Deaf and Dumb School at Delavan, died at his home in that city, April 24, from senile debility, aged 86.

Daniel David Quillian, M.D. Atlanta (Ga.) Medical College, 1889; a member of the American Medical Association and the Medical Association of Georgia; for seven years sanitary inspector and attending physician to the Georgia State Normal School, Athens; one of the most prominent physicians of Clark County, Ga., died at his home in Athens, April 17, from pneumonia, after an illness of one week.

Charles Fred Moulton, M.D. Dartmouth Medical School, Hanover, N. H., 1890; assistant ophthalmic surgeon to the Boston City Hospital; member of the American Academy of Medicine and Massachusetts Medical Society; a member of the medical staff of the Massachusetts Eye and Ear Infirmary, died at his home in West Roxbury, Boston, from tubercular meningitis, April 24, aged 40.

Thomas Jacob Garrigan, M.D. New York University, Medical Department, 1879; a member of the Massachusetts Medical Society and one of the founders of the Brookfield Medical Club; for many years a selectman and member of the board of trade of North Brookfield, Mass., died at his home in that city, April 20, from valvular heart disease, aged 51.

Frank L. Tozier, M.D. Bellevue Hospital Medical College, New York City, 1896, of Batavia, N. Y.; formerly of Washburn, Maine; surgeon to the New York State School for the Blind, Batavia, and member of the Genesee County Medical Society, died at the German Deaconess' Hospital, Buffalo, April 21, after an operation for appendicitis.

Thomas T. Beveridge, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1862, for many years a member of the staff of St. Elizabeth Hospital, Appleton, Wis., of which he was one of the founders, died at his home in Appleton, April 20, from catarrhal pneumonia, after an illness of three weeks, aged 63.

William R. Marsden, M.D. New York University, Medical Department, New York City, 1881; a member of the Medical Society of New York, the Oneida County Medical Society, Utica Medical Library Association and Utica Medical Club, died at his home in Utica, April 25, from acute nephritis, aged 52.

Benjamin Henry Burrell, M.D. Eclectic Medical Institute, Cincinnati, 1878; of Boston; from 1882 to 1884 professor of anatomy and physiology in Bates College, Lewiston, Maine; a member of the Massachusetts Medical Society, died suddenly at the home of his daughter in Denver, Colo., April 23, aged 53.

Hallet W. Thompson, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1900, a member of the American Medical Association, and a young practitioner of great promise, died at his home in Plantersville, La., March 5, it is supposed, from poison, accidentally administered.

Lorenzo Dow Glazebrook, M.D. Rush Medical College, Chicago, 1857; deputy revenue collector for the Ninth district of

Indiana for three years; in 1872 and 1885 representative in the General Assembly, died at his home in Knox, Ind., after an illness of six months, from senile debility, aged 76.

Benjamin Pennebaker, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1872; for 13 years physician-in-chief of the House of Correction; physician to the County Prison, Holmesburg, and to the Frankford Arsenal, died at his home in Philadelphia, April 25, aged 66.

William N. Cline, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, for many years a practitioner of Illinois, died at his home in Rialto, Cal., Nov. 29, 1905, from prostatic hypertrophy and resultant kidney complications, after an illness of seven years, aged 84.

Edward W. Lane, M.D. Oglethorpe Medical College, Savannah, Ga., 1857; University of Louisville, Medical Department, 1859, of Butts, Ga.; once president of the Georgia Medical Association, and in 1890 and 1891 a state senator, died at the home of his son in Millen, Ga., April 15, aged 82.

Louis C. Blitz, M.D. University of Louisville, Medical Department, 1897, a member of the faculty of his alma mater and a member of the Louisville Academy of Medicine, died at the Jewish Hospital, Louisville, April 25, from meningitis following an operation for mastoiditis, aged 34.

John Fruit, M.D. Jefferson Medical College, Philadelphia, 1881, physician in charge of the Hazelton (Pa.) Hospital during the smallpox epidemic, 1891, died at his home in Hazelton, April 16, from carcinoma of the stomach, after an illness of eight months, aged 46.

Jacob C. Spohn, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1868, for forty years a practitioner of Rochester, Ind., but for the last ten years in St. Louis, died in a hospital in that city, April 19, after a surgical operation, aged 66.

Hugh W. McReynolds, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1848, for many years a prominent physician of Bloomsburg, Pa., and for one term treasurer of Columbia County, died at his home in Bloomsburg, April 25, aged 84.

Mauricio Flores y Fernandez, M.D. Howard University, Medical Department, Washington, D. C., 1903; a native of Havana, Cuba; a member of the Dauphin County Medical Society, died at his home in Harrisburg, Pa., February 2, from heart disease, aged 40.

Aaron J. Bates, M.D. Indiana Medical College, Indianapolis, 1873, a veteran of the Civil War, and for several years a member of the pension board of Kokomo, Ind., died at his home in that city, April 24, from pneumonia, after an illness of two days, aged 59.

Charles H. Tilghman, M.D. University of Maryland School of Medicine, Baltimore, 1866, a surgeon in the service of the Red Cross Society during the Franco-German War, died suddenly at his home in Baltimore, April 25, from angina pectoris, aged 60.

T. L. H. Cook, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1880, of Artesia, Miss., who was brought to Columbus, Miss., April 14, suffering from alcoholic insanity, died suddenly in the Columbus jail, April 17.

Charles Bradley, M.D. Jefferson Medical College, Philadelphia, 1875, formerly president of the Norristown board of health and coroner's physician of Montgomery County, Pa., died at his home in Norristown, April 25, aged 58.

Orrin F. Burroughs, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1869, a practitioner of Galesburg, Mich., for nearly fifty years, died at his home in that place, April 16, from senile debility, aged 79.

Joseph Hedges, M.D. College of Physicians and Surgeons in the City of New York, 1853, a member of the Medical Society of the State of New Jersey, died at his home in Newton, N. J., April 14, after a protracted illness, aged 76.

Charles W. Hilton, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1887, a member of the Tri-State Medical Society, died at his home in Monroe, La., April 20, after an illness of three weeks, aged 44.

Frank Donaldson, M.D. University of Maryland School of Medicine, Baltimore, 1883, of Los Angeles, Cal., for a time acting assistant surgeon, United States Army, died at San Francisco, April 12, from consumption, aged 49.

James M. Young, M.D. University of Louisville, Medical Department, 1860, surgeon in the Confederate service throughout the Civil War, died at his home in Bloomfield, Ky., April 19, after a lingering illness, aged 69.

Isaac Farrar, M.D. University of Vermont, Medical Department, Burlington, 1862, for thirty-five years a well-known lecturer, died at his home in Dorchester, Boston, April 23, after a lingering illness, aged 76.

Charles Miller Booth, M.D. Vermont Medical College, Woodstock, 1851, a noted expert on microscopy and botany, of Rochester, N. Y., died at his home in that city, January 8, from senile debility, aged 75.

Samuel L. Marston, M.D. Rush Medical College, Chicago, 1863, assistant surgeon of the Twelfth Wisconsin Volunteer Infantry during the Civil War, died at his home in Hartford, Wis., April 22, aged 78.

James Lindsay Trader, M.D. Jefferson Medical College, Philadelphia, 1871, twice coroner of Fayette County, Pa., died at his home in Connellsville, April 23, from cerebral hemorrhage, aged 59.

Israel T. Buckbee, M.D. Albany (N. Y.) Medical College, 1841, a member of the New York State Medical Society for 45 years, died at his home in Fonda, N. Y., April 25, aged 86.

Daniel B. Wise, M.D. Cleveland College of Physicians and Surgeons, 1874, died suddenly at his home in Mount Eaton, Ohio, April 16, from valvular heart disease, aged 55.

Emil Hertel, M.D. Jefferson Medical College, Philadelphia, 1883, died at his home in Wilmington, Del., from chronic fibroid pneumonia, after an illness of two years, aged 50.

George Owen Willis, M.D. Royal College of Physicians, Edinburgh, Scotland, 1876, died suddenly in his apartment, in Grass Valley, Cal., April 14, from cirrhosis of the liver.

Samuel C. Allaband, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865, died at his home in Philadelphia, Sept. 18, 1905, aged 63.

Caroline M. Niemann, M.D. Hering Medical College and Hospital, Chicago, 1900, died at her home in Chicago, Aug. 22, 1905, from pulmonary tuberculosis, aged 37.

Robert S. Peyton, M.D. Jefferson Medical College, Philadelphia, 1852, died at his home in Pinckneyville, Ill., Jan. 16, 1905, from cancer of the stomach, aged 75.

William W. Pierce, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876, died at his home in Findlay, Ill., Aug. 17, 1905, from hepatic colic, aged 71.

Preston Minor, M.D. University Medical College of Kansas City, 1900, died at his home in Sheridan, Wyo., April 20, from typhoid fever, aged 34.

Thomas H. Johnson, M.D. Cincinnati College of Medicine and Surgery, 1854, died at his home in Clarksburg, Ind., April 22, after an illness of several weeks, aged 79.

Amos G. Driver, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1899, died at his home in Carrollton, Ill., January 30, aged 29.

Ida Dole Nicholson, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1899, died at her home in Los Angeles, Cal., Jan. 1, 1905, aged 42.

Charles M. Shiltneck, M.D. College of Physicians and Surgeons, Baltimore, 1880, died at Burkittsville, Md., April 24, from internal hemorrhage, aged 46.

J. G. Porter, M.D. Chicago Homeopathic Medical College, 1899, of Clinton, Ill., died in Hahnemann Hospital, Chicago, April 24, after a surgical operation.

William T. Roberts, M.D. Harvey Medical College, Chicago, 1905, died at his home in that city from rupture of an aortic aneurism, Sept. 17, 1905, aged 30.

Granville, I. Smart, M.D. Dartmouth Medical College, Hanover, N. H., 1880, formerly of Blue Earth, Minn., died recently at his home in Ontario, Cal.

Herman Kirschstein, M.D. University of Breslau, Germany, 1862, one of the oldest German physicians of Chicago, died at his home, April 29, aged 77.

John E. Coyle, M.D. University of Tennessee, Medical Department, Nashville, 1892, formerly of Paducah, Ky., died recently at Wewaka, I. T.

Thomas P. Lark, M.D. Rush Medical College, Chicago, 1871, died at his home in Ruma, Ill., Aug. 8, 1905, from valvular heart disease, aged 63.

Elkanah Alonzo Thoman, M.D. Eclectic Medical Institute, Cincinnati, 1875, of Bucyrus, Ohio, died at his home in Los Angeles Cal., April 25.

Edwin J. Bertenshaw, M.D. Miami Medical College, Cincinnati, 1893, of Elk City, Kan., died recently at Bartelsville, Kan., aged 37.

E. Collins Blaisdell, M.D. Albany (N. Y.) Medical College, 1858, died at his home in Quincy, Ill., Dec. 22, 1905, from paralysis.

Daniel P. Dailey, M.D. Hospital College of Medicine, Louisville, 1890, died at his home in Birds, Ill., Aug. 16, 1905, aged 48.

Colmore Harris, M.D. (Years of Practice, Illinois), 1878, died at his home in Boos Station, Ill., May 7, 1905, from tumor, aged 77.

Franz Baeumer, M.D. American Medical College, St. Louis, 1875, died at his home in New Athens, Ill., in January, aged 64.

Frank W. Gross, M.D. Eclectic Medical Institute, Cincinnati, 1860, died at his home in Chrisman, Ill., Jan. 28, 1905, aged 69.

George W. Hyde, M.D. Eclectic Medical Institute, Cincinnati, 1876, died at his home in Clinton, Ill., Sept. 5, 1905, aged 76.

John W. Rawlins, M.D. Medical College of Indiana, Indianapolis, 1888, died at his home in Jewett, Ill., February 4.

D. M. Stewart, M.D. Iowa Medical College, Keokuk, 1869, died at his home in Denton, Texas, April 19, aged 81.

William H. Phillips, M.D. (Years of Practice, Pennsylvania), died at his home in California, Pa., April 22, aged 67.

George Shamhart, M.D. (Years of Practice, Illinois), 1877, died at his home in Latona, Ill., January 24, aged 84.

Job Sweet, M.D. (Years of Practice, Massachusetts), died at his home in New Bedford, Mass., April 22, aged 78.

Francis McGuire, M.D. Rush Medical College, Chicago, 1868, died recently at his home in St. Cloud, Minn.

Jacob F. Stough, M.D. (Examination, Ohio), died at his home in Warren, Ohio, April 14, aged 73.

Death Abroad.

Lionel Smith Beale, M.B. London, 1851; M.R.C.P. London, 1856; F.R.C.P. London, 1859; Baly Medal R.C.P. 1871 Croonian Lecturer, Royal Society, 1865; Lumleian Lecturer, R.C.P., 1875, has died in London from pontine hemorrhage, aged 78. In 1896 he had a slight attack of cerebral hemorrhage or thrombosis. Born in London, the son of a doctor, he was educated at King's College. His career was remarkable. A year after taking his degree he established a private chemical and microscopic laboratory for teaching and original research. In 1853, though only 25 years of age, he was appointed professor of physiology and general and morbid anatomy at King's College, a post for which the late Professor Huxley was a candidate. He soon established a reputation as a learned and lucid teacher. He was a great worker and incessantly wrote papers for the Royal Society on original microscopic investigations. At the age of 25 he published the first edition of his most successful book, "How to Work with the Microscope." He afterward published a work, "The Microscope in Medicine." He was constantly engaged in controversies with those who sought to give a purely physical explanation of the phenomena of life, and in his book on "Protoplasm of Life, Matter and Mind," strenuously maintained that vital action transcended physical and chemical phenomena. In 1876 he was appointed professor of principles and practice of medicine and was made consulting physician to King's College Hospital. He soon established a reputation as a practical physician and his powers are shown in his most useful work, "Slight Ailments: Their Nature and Treatment." He possessed an extraordinary power of diagnosis by facies. At the age of 29 he received the great distinction of fellowship in the Royal Society. Of the many papers he read at the society perhaps the most important was on "The Ultimate Nerve Fibers Distributed to the Muscles and to Some Other Tissues." His publications on clinical medicine were numerous. They included books on "The Liver," "Kidney Diseases, Urinary Deposits and Calculi," "The Mystery of Life," "Our Morality and the Moral Question."

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE AUTOMOBILE FOR THE PHYSICIAN'S USE

DR. I. J. KERR, Cleveland, O., writes: "I have read your articles on 'Automobiles for Physicians,' and find them very valuable, giving the opinions of so many men from their various standpoints and in their different locations. I think you have conferred a great favor on the physicians of the United States in collecting and publishing these series of opinions. I am especially interested now in the subject of purchasing an automobile."

DR. ROBERT ALGIE, Lima, Kan., writes: "I have had a good deal of trouble, especially with tires. I notice that Dr. Collins speaks of four-inch solid tires. Now I want something of that kind. All of the solid tires I have seen listed are smaller than pneumatics, and as my wheels are very low, I want something that will, if possible, make them higher."

DR. J. D. SOUTHARD, Fort Smith, Ark., says: "I predict that this issue of THE JOURNAL will increase the sale of autos more than any other one thing that has ever happened. Thank you for taking the matter up in the splendid way you did."

DR. E. P. STIMSON, Tiverton, R. I., writes: "Since your announcement that you would issue an automobile number I have been looking forward to it to learn whether I should purchase an auto or not. There is one point which was not, as I noticed, touched on: If business slacks up and you do not have full draft on your horses, the expense goes on just about the same for food, while if the auto is idle, it costs only interest on investment."

DR. AUGUSTUS A. ESHNER, Philadelphia, writes: "I want to congratulate you on your automobile number. I am sure it will be instructive to many who are undecided or are novices. I shall try to interest the agent for the sale of the machine I have, with the hope of securing special interest for cars for medical men You should now be able to obtain a generous amount of advertising from automobile manufacturers, for physicians are good patrons, and the market is a constant one for a good and needed article."

DR. A. G. COUMBE, Vienna, Va., writes: "I congratulate you on the issue of April 21, as the motive power for physicians is of the greatest importance to us all, and the auto must receive our consideration. I have used a car for two years with more or less unsatisfactory results—not so much the car refusing to work, but the dirt and grease which I am compelled to get on my hands when I get caught, which has prevented me from operating frequently."

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending April 28, 1906:

Powell, Wm. A., asst.-surgeon, left Jefferson Barracks, Mo., for St. Louis, to accompany medical supplies to, and for temporary duty at San Francisco.

Butcher, B. H., asst.-surgeon, reported for temporary duty at Army General Hospital, Washington Barracks, D. C.

Gilchrist, H. L., and Davis, Wm. T., asst. surgeons, left General Hospital, Washington Barracks, D. C., with Co. A, Hospital Corps, en route to San Francisco, for temporary duty.

Chidester, W. C., asst. surgeon, leave of absence extended to June 5, 1906.

Hathaway, L. M., asst.-surgeon, left Fort Thomas, Ky., en route to St. Louis, for duty with medical supplies to and for temporary duty at San Francisco.

Hoff, John Van R., asst.-surgeon-general, and Johnson, R. W., surgeon, appointed members of an Army retiring board, to meet at the call of the president of the board, for the examination of such officers as may be ordered before it.

Bevans, James L., asst. surgeon, granted ten days' leave of absence to take effect on the completion of his examination for advancement.

Byars, Caspar R., contract surgeon, relieved from duty at Fort Sam Houston, Texas, and ordered to Jefferson Barracks, Mo., for duty.

Newton, Ralph W., contract surgeon, ordered to duty with troops in the Yosemite National Park.

Wing, Franklin F., dental surgeon, left Fort Omaha, Neb., and arrived at Fort Washakie, Wyo., for duty; is ordered thence to Fort Robinson, Neb., and Fort Meade, S. D., and thence will return to Fort Riley, Kan.

Koyle, Fred T., contract surgeon, returned to Fort Bliss, Texas, from leave of absence.

McMillan, Clemens W., contract surgeon, left Fort Michie, N. Y., and arrived at Fort Crook, Neb., for duty.

Porter, Elias H., Grieger, Hubert, Hogan, David D., contract surgeon, arrived at San Francisco, April 26, on transport *Sherman*, for leave of absence from the Philippines Division.

Tuttle, George B., contract surgeon, arrived at San Francisco, April 26, on transport *Sherman*, for station in the United States.

Springwater, Samuel A., contract surgeon, arrived at San Francisco, April 26, on transport *Sherman*, for annulment of contract.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending April 28, 1906.

Old, E. H. H., asst.-surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Training Station, San Francisco.

Cordeiro, F. J. B., surgeon, discharged from treatment at the Naval Hospital, New York, and ordered to Washington, D. C., May 2, for examination in conformity with Title 15, Chapter 3, Revised Statutes, and thence home to wait orders.

Hoyt, R. E., P. A. surgeon, detached from the Naval Academy and ordered to the *Newark*.

Reed, E. C., asst surgeon, ordered to the *Charleston*, May 1.

Dessez, P. T., asst. surgeon, detached from the *Charleston* and ordered to the *Severn*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending April 25, 1906:

Nydegger, J. A., P. A. surgeon, granted seven days' leave of absence, from April 23, under the provisions of Paragraph 191 of the Regulations.

Blue, Rupert, P. A. surgeon, relieved from special temporary duty at Reedy Island Quarantine, and directed to report in Washington, D. C.

Blue, Rupert, P. A. surgeon, temporarily relieved from duty at Norfolk, Va., and from temporary duty in the Hygienic Laboratory in Washington, and directed to proceed to San Francisco for special temporary duty, on completion of which to rejoin temporary station at Washington, D. C.

Oakley, J. H., P. A. surgeon, directed to proceed from Port Townsend Quarantine Station, Port Townsend, Wash., to San Francisco, Cal., reporting to the medical officer in command for temporary duty.

King, W. W., P. A. surgeon, directed to proceed to Missoula, Mont., for special temporary duty, on completion of which to rejoin station in Washington, D. C.

McCoy, G. W., P. A. surgeon, relieved from duty in the Philippine Islands, and directed to return to the United States, reporting arrival in San Francisco by wire.

Burkhalter, J. T., P. A. surgeon, granted leave of absence for seven days under Paragraph 191 of the Regulations.

Burkhalter, J. T., P. A. surgeon, granted seven days' extension of leave of absence under Paragraph 191 of the Regulation.

Ebert, H. G., asst.-surgeon, directed to proceed from Seattle, Wash., to San Francisco, reporting to the medical officer in command for temporary duty.

Steger, E. M., asst.-surgeon, granted leave of absence for one month and twenty-three days, from May 17, 1906.

Goldsborough, B. W., acting assistant surgeon, granted leave of absence for three days, from April 24, 1906.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for five days, from April 25, 1906.

Nute, A. J., acting asst.-surgeon, transferred from Port Huron, Mich., to Ellis Island, N. Y.

Schug, F. J., acting asst.-surgeon, granted leave of absence for 15 days, from May 3, 1906.

Watters, M. H., pharmacist, directed to proceed to San Francisco, Cal., reporting to the medical officer in command for temporary duty.

McBride, Charles R., pharmacist, relieved from duty at Manila, P. I., and directed to proceed to Cebu Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended April 27, 1906:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, April 7-14, 2 cases.
California: Los Angeles, April 7-14, 5 cases.
Delaware: Wilmington, April 7-14, 2 cases.
Georgia: Augusta, April 9-23, 6 cases.
Illinois: Chicago, April 14-21, 2 cases.
Indiana: Indianapolis, April 15-22, 6 cases.
Louisiana: New Orleans, April 7-14, 21 cases (8 imported).
Maryland: Baltimore, April 14-21, 2 cases.
Michigan: Detroit, April 14-21, 2 cases.
New Jersey: Jersey City, April 15-22, 1 case; Passaic County, to April 10, 75 cases.
New York: Middletown, April 24, 4 cases; New York, April 14-21, 2 cases.
Ohio: Cincinnati, April 13-20, 17 cases.
Oregon: General, March 1-31, 23 cases.
Pennsylvania: Pittsburg, April 7-14, 1 death.
Tennessee: Memphis, April 7-14, 16 cases.
Texas: Houston, April 14-21, 4 cases.
Utah: General, March 1-31, 157 cases.
West Virginia: Wheeling, April 14-21, 3 cases.
Wisconsin: Appleton, April 14-21, 3 cases; Marinette, April 7-14, 4 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, March 3-10, 4 cases, 1 death.

SMALLPOX—FOREIGN.

Africa: Cape Town, March 3-17, 18 cases.
Brazil: Bahia, March 3-24, 20 cases, 3 deaths; Pernambuco, March 1-15, 11 deaths.
Canada: Toronto, March 24-April 14, 10 cases.
Chile: Antofagasta, April 10, 14 cases, 6 deaths; Coquimbo, 12 cases, 4 deaths; Iquique, March 17-24, 8 cases, 4 deaths.
China: Hongkong: March 3-10, 13 cases, 11 deaths; Shanghai, 2 deaths.
Ecuador: Guayaquil: March 31-April 7, 5 deaths.
Germany: Stettin, March 30, 3 cases, 1 death.
Gibraltar: April 1-8, 2 cases.
Great Britain: Bristol, March 31-April 7, 2 cases; Liverpool, 1 case.
Greece: Athens, March 23-30, 1 death.
India: Bombay, March 20-27, 22 cases; Calcutta, March 10-17, 140 deaths; Karachi, March 18-25, 42 cases, 18 deaths; Madras, March 17-23, 40 deaths; Rangoon, March 10-17, 69 deaths.
Mexico: Tuxpam, April 4-11, 1 death.
Russia: Moscow, March 17-31, 49 cases, 4 deaths; St. Petersburg, March 24-31, 3 cases, 2 deaths.
Straits Settlements: Singapore, March 14, epidemic.
Turkey: Alexandretta, March 24-31, 1 case, 1 death.

YELLOW FEVER—FOREIGN.

Ecuador: Guayaquil, March 31-April 7, 23 deaths.

CHOLERA—INSULAR.

Philippine Islands: Provinces, Feb. 24-March 10, 139 cases, 113 deaths.

CHOLERA—FOREIGN.

India: Bombay, March 20-27, 802 deaths; Calcutta, March 10-17, 32 deaths.

PLAGUE—FOREIGN.

Australia: Brisbane, March 10, 1 case.
Chile: Antofagasta, March 19-April 2, 5 cases.
China: Hongkong, March 3-10, 15 cases, 10 deaths.
India: Bombay, March 20-27, 802 deaths; Calcutta, March 10-17, 134 deaths; Karachi, March 18-25, 68 cases, 59 deaths; Madras, March 17-23, 1 death; Rangoon, March 10-17, 65 deaths.
Peru: Callao, March 6-April 1, 2 cases, 1 death; Chiclayo, 4 cases, 3 deaths; Eten, 2 cases, 2 deaths; Lambayeque, 1 case, 2 deaths; Mansefu, 2 cases; Mollendo, 5 cases, 1 death; Paita, 10 cases; Pisco, 1 case, 2 deaths; Reque, 11 cases, 5 deaths; Trugillo, 49 cases, 17 deaths.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

Oklahoma Medical Association, Oklahoma City, May 8.
Indian Territory Medical Association, Oklahoma City, May 8.
Utah State Medical Association, Salt Lake City, May 8-9.
Nevada State Medical Society, Reno, May 8-9.
Louisiana State Medical Society, New Orleans, May 8-10.
Arkansas Medical Society, Hot Springs, May 8-10.
Montana State Medical Association, Butte, May 9-10.
Kansas Medical Society, Topeka, May 9-11.
Ohio State Medical Association, Canton, Ohio, May 9-11.
American Climatological Assn., Atlantic City, N. J., May 12-14.
American Assn. of Physicians, Washington, D. C., May 15-16.
Missouri State Medical Association, Jefferson City, May 15-17.
Iowa State Medical Society, Des Moines, May 16-18.
North Dakota State Medical Association, Fargo, May 16-17.
New Hampshire Medical Society, Concord, May 17-18.
Amer. Assn. of Path. and Bacteriologists, Baltimore, May 18-19.
American Gynecological Society, Hot Springs, Va., May 22.
Illinois State Medical Society, Springfield, May 15-17. (Note change of time back to date originally planned.)
Connecticut State Medical Society, New Haven, May 23-24.
Indiana State Medical Association, Winona Lake, May 23-25.
Michigan State Medical Society, Jackson, May 23-25.
Med. Soc. of State of North Carolina, Charlotte, May 29-31.
Rhode Island Medical Society, Providence, May 31.
American Dermatological Assn., Cleveland, May 30-June 1.
American Pediatric Society, Atlantic City, May 30-June 1
American Surgical Association, Cleveland, May 30-June 1.
American Laryngological Assn., Niagara Falls, May 31-June 2.
American Assn. of Genito-Urinary Surgeons, New York, June 1-2.
American Academy of Medicine, Boston, June 2-4.
Amer. Assn. of Life Insurance Exam. Surgeons, Boston, June 4.
American Gastro-Enterological Assn., Boston, June 4.
American Urological Assn., Boston, June 4-5.
American Proctologic Society, Boston, June 5-6.
American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-13.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springs, June 20-22.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The 108th Annual Meeting, held at Johns Hopkins University, Baltimore, April 24-26, 1906.

The President, DR. SAMUEL T. EARLE, in the Chair.

Society in Good Condition.

The reports showed that the society is in a flourishing condition financially. It possesses a library of 15,275 volumes, valued at $45,000, and portraits worth $5,000. Funds for the purchase of new books are provided by the Frick fund, the Baker fund, and the Book and Journal club. The library was used by a large number of people during the year and many duplicate volumes were given away to help other libraries. There are at present 921 members, of whom 434 are country members and 495 Baltimore members. During the year there were 8 deaths. The fund for the relief of widows and orphans of deceased members now amounts to $918.56; during the year one appropriation was made in the case of an aged widow whose only support was a son who was ill with typhoid fever.

Advocate Improved Medical Laws.

The secretary of the State Board of Medical Examiners reported that the answers to questions asked at the state board

examination showed a lack of proper training in the candidates. Resolutions were passed approving the minimum standard of requirements adopted by the American Medical Association, in July, 1905, and directing the committee on legislation to arrange for such changes in the medical laws of the state, to be presented at the next meeting of the legislature, as shall bring the laws into full conformity with these requirements. A committee was appointed to investigate the dispensary abuse and to devise ways of correcting it.

Approve Movement for Pharmaceutic Reform.

A resolution was also passed endorsing the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry for the investigation of non-official drugs, endorsing the plan of action proposed by the council, and approving the change in the advertising columns of THE JOURNAL of the American Medical Association, and expressing the hope that THE JOURNAL will soon be free of all advertisements which may in any sense be considered objectionable.

Message of the President.

In his presidential address, Dr. Earle spoke of the imperative need of organization, and said that only a beginning has been made. He said that efforts should be made to have every physician in the state in the organization, and that the conditions of entrance should not be too rigid, but that every honorable and upright physician should be welcome, no matter what his sentiments. Dr. Earle urged allegiance to the profession and care in the selection of officers generally.

The Role of Pure Cow's Milk in Infant Feeding.

The annual oration was delivered by Dr. Jacobi. He stated that cow's milk is not a proper substitute for mother's milk, and no matter how it is modified it can never become so. He called attention to the fact that there was no artificial feeding in antiquity; artificial feeding of infants was first practiced, so far as we know, in 1500 A. D. It is only, he said, when a woman has no milk that the use of modified cow's milk is permissible, and only then when the more appropriate asses' milk is not obtainable. He mentioned in some detail the various disorders arising from a diet of cow's milk in young infants and the sequels to be expected such as rickets and allied conditions. He spoke of the advantages of buttermilk and said that too great uniformity in food is not to be desired. He urged the use of cane sugar in preference to milk sugar in the preparation of the cow's milk mixtures and dwelt strongly on the importance of copious dilution of the food, stating that this is best effected by the addition of cereal decoctions in place of mere water. He also referred to methods of preparing infant foods.

(To be continued.)

AMERICAN CONFEDERATION OF RECIPROCATING, EXAMINING AND LICENSING BOARDS.

Meeting held at Columbus, Ohio, April 25, 1906.

The President, DR. W. A. SPURGEON, in the Chair.

Report of Secretary.

The secretary, Dr. B. D. Harison, reported that the following states are members of the confederation: Ohio, South Carolina, New Mexico, District of Columbia, Wisconsin, Iowa, Kentucky, Indiana, Nebraska, Michigan, Georgia, Illinois, Kansas, Maryland, Oklahoma, Nevada and North Dakota.

The following states reciprocate under Qualification I: Illinois, Ohio, New Jersey, North Dakota, Virginia, Wyoming, South Carolina. Under Qualification II: Michigan, Wisconsin, Indiana, Iowa, Kansas, Nebraska, Maryland, Minnesota, Vermont, Missouri, Nevada, Maine, Georgia, District of Columbia. A number of these states are not members of the confederation, but have adopted its basis of reciprocal registration.

During the past year 699 reciprocal registrations were made by 12 of the states from which a report was obtained. Of this number 147 were issued under Qualification II and 452 under Qualification I. No report was received from 10 other reciprocating states.

Report of Committee on Modifications in Reciprocal Qualifications.

The committee recommended the substitution of the following for the requirements now in force:

PREREQUISITE CREDENTIALS.

As a prerequisite to reciprocal registration the applicant therefor shall file, in the offices of the boards of the state of which he is a licentiate and of the state where reciprocal registration is sought, such evidence of good moral and professional character as may be demanded by said boards, and such evidence, at the discretion of either board, may include proof of membership in a recognized medical society, and such membership may be considered in connection with the other evidences of character presented.

QUALIFICATION I.

A certificate of registration showing that an examination was less than that prescribed by the state in which an average grade of not less than 75 per cent. was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the state where reciprocal registration is sought, may be accepted, in lieu of examination, as evidence of qualification. Provided, that in case the scope of the said examination was less than that prescribed by the state in which registration is sought, the applicant may be required to submit to a supplemental examination by the board thereof in such subjects as have not been covered.

QUALIFICATION II.

A certificate of registration, or license issued by the proper board of any state, may be accepted as evidence of qualification for reciprocal registration in any other state. Provided, the holder of such certificate had been engaged in the reputable practice of medicine in such state at least one year, and also provided that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the state in which reciprocal registration is sought, and that the date of such diploma was prior to the legal requirement of the examination test in such state.

The report was adopted.

Report of Committee on Uniform Entrance and Graduation Requirements.

The committee recommended as a substitute for the requirements adopted at Indianapolis, April 17, 1905, that, after July 1, 1906, the minimum requirement for registration in a medical college shall be a recognized diploma for a four-year high-school, college, academy or university, or a recognized equivalent certificate, such diploma or certificate having the following minimum standard: Academic work and examinations, 60 counts (a count represents one recitation a week for the school year). Required, 30 counts (after 1906, 35 counts), as follows: English, 10 counts; mathematics, 10 counts; Latin, 5 counts (10 counts after 1906); physics, 5 counts. Elective, 30 counts (after 1906, 25 counts), be chosen from the following: English, 10 counts; French, 10 counts; German, 10 counts; Spanish, 10 counts; Greek, 10 counts; drawing, 3 counts; history, including civics, 10 counts; botany, 5 counts; zoology, 5 counts; biology, 5 counts; chemistry, 5 counts; trigonometry, 2 counts; physical geography, 5 counts; physiology and hygiene, 5 counts. Conditions may be allowed not to exceed a total of 15 counts.

The report was adopted.

Report of Committee on Advanced Standing.

The committee suggested that the first clause of the present requirements be amended to read as follows:

Graduates holding degrees of A.B., B.S., or equivalent qualifications from a reputable college or university may be given credits not exceeding one year. Provided that the applicant for such credit shall produce evidence which will satisfy the state board of medical examiners of the state in which such credit is asked that he has done within 10 per cent. of all the work embraced in the minimum standard of requirements of the confederation in the following subjects: Histology, embryology, osteology, anatomy, physiology, chemistry and toxicology and bacteriology; and provided that any literary college which shall undertake this work shall in its catalogue announce the fact that it will give this first year of the medical course.

The report was adopted.

Primary Examination.

The following resolution was offered by the Ohio Board:

Resolved, That a certificate issued by a board covering credits received in a primary or junior examination held by said board may be received and given credit by the board of another state; provided that the primary examination shall only include the following subjects which must have been completed to the end of the second year, at least, in a recognized medical college in accordance with the standard medical curriculum of the confederation: Anatomy, physiology, chemistry and toxicology, histology, embryology and bacteriology.

The resolution was adopted.

Report of Committee on Uniformity of Forms.

The committee recommended a uniformity in reciprocal license applications blanks, and that the following require-

ments at least be considered essential: (a) A question which will reveal the past conduct and proposed attitude toward engaging in itinerant practice or objectionable advertising business. (b) A comprehensive physical description sworn to by the applicant and endorsed by those who make affidavits, as to his moral and professional standing; affidavits by applicant to be positive instead of "to the best of his knowledge and belief." Intended residence not necessarily required. (c) A certified copy of license which is used as a basis for reciprocity. (d) A detailed statement of preliminary and medical college education.

The report was adopted.

President's Address.

The president, in his closing address, emphasized the point that the work of the confederation was purely educational, and its resulting standards, qualifications and regulations were merely suggestive and intended as a guide and in the interest of uniformity rather than mandatory on boards who held membership in the confederation. The boards, however, were naturally expected to live up to the ideals of the confederation in as far as their laws and local conditions permitted. He acknowledged the indebtedness of the confederation to the very valuable assistance rendered by the Ohio State Medical Board, the Faculty of the Ohio State Medical University, and the visiting deans of other medical colleges throughout the country in contributing to the success of the meeting by their presence and advice. He also especially referred to the great assistance rendered the confederation by Prof. Charles F. Wheelock, representing the New York Board of Regents, and Dr. Fred C. Zapffe, Secretary Association American Medical Colleges.

Officers Elected.

The present officers were re-elected for the ensuing year: President, Dr. W. A. Spurgeon, Muncie, Ind.; secretary, Dr. B. D. Harison, Detroit.

MEDICAL ASSOCIATION OF GEORGIA.

Fifty-seventh Annual Meeting, held at Augusta, April 18-20, 1906.

The President, DR. W. Z. HOLLIDAY, Augusta, in the Chair.

(*Continued from Page 1292.*)

Is There a Continued Fever Other than Malarial or Typhoid?

DR. J. W. PALMER, Ailey, said that from a clinical standpoint he believes all questionable cases of continued fever are a variety of mild, uncomplicated cases of typhoid fever, except occasionally they may be malarial.

The General Practitioner as a Factor in Surgery.

DR. R. R. KIME, Atlanta, said the physician bears a threefold relation to surgery. The first, and most important, is the prevention of the necessity for surgery. Second, the physician may be a causative factor in developing directly or indirectly conditions that require operative procedures. Third, the physician is often called on to use his judgment and advise his patient either for or against operative procedures. To secure the best results and place surgery and medicine on a higher scientific basis, the work of the physician and surgeon should be more closely associated and combined with that of the anatomist, the physiologist, and the pathologist.

Suprarenal Tuberculosis.

DR. WILLIAM CLIFTON LYLE, Augusta, reported a case of Addison's disease which came to postmortem. The special points were the freedom of the sclerotics and roots of the nails from pigment; the dark lines at the juncture of the skin and mucous membrane of the lips and in the creases of the palms. The hemophilia, acetonuria, the atrophy of the suprarenals, uncommon in persons of that age (55), and the decided improvement consequent to the administration of suprarenal substance. In this disease, even when marked improvement takes place, the patient's life, owing to the abolished function of the suprarenal glands, is extremely precarious, and all patients who have greatly improved or apparently recovered, should lead inactive lives. They should be warned that they are not cured; that the morbid conditions are still present, and that any overexertion or undue exposure liable to depress the heart may be attended with grave danger.

Intussusception.

DR. MARION M. HULL, Atlanta, believes that early operation is the only rational treatment. High irrigation may be used with advantage to aid in reducing the intussusception.

Appendicitis.

DR. FLOYD W. MCRAE, Atlanta, presented some general observations and statistics up to date regarding this disease. He emphasized the point that appendicitis is first, last and all the time a surgical disease, though not always under all conditions an operative one. Early diagnosis and prompt surgical intervention in all cases will reduce the mortality to less than 2 per cent.

Needed Legislation on Pure Food Laws for Georgia.

DR. O. H. BUFORD, Cartersville, said that it devolves on the medical profession to educate the masses to see the importance of having wholesome food to build strong bodies, so that they may withstand the inroads of disease. The medical profession of the state can wield great power for good if they would realize that they are the watchmen on the towers. The author made an eloquent plea for more stringent laws with regard to pure food.

DR. O. L. HOLMES, Covington, reported a case of vaginal sarcoma in an infant, seven months of age. He presented a study of all similar cases found in the literature.

DR. C. R. ANDREWS, Atlanta, described a method of staining *Spirochæta pallida*.

DR. J. E. SOMMERFIELD, Atlanta, reported a case of typhoid fever followed by an abscess of the liver. On aspiration, pus was found. Recovery followed operation.

(*To be continued.*)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Tuberculosis.

In speaking of the dietetic and medicinal treatment of tuberculosis, Bjorkman, in *Merck's Archives*, states that the condition of the stomach and intestinal canal must be carefully watched, even more carefully than the lungs, because if failure of these organs takes place the case will be lost. The patient, consequently, should never eat heartily at any time, nor should liquid foods be taken in too large quantities. Small meals and of the highest caloric value, he states, should be partaken of frequently. The patient should be allowed, as a rule, to choose the articles of food he relishes most, and no food that does not meet with his approval should be served.

Fats in the form of butter and cream are important articles of diet. Cod-liver oil is of value when it agrees with the patient. Whenever fever is present the patient should be put to bed in the open air and should remain at rest as long as the fever continues; at the same time he should be fed to the maximum.

Raw eggs in increasing amounts are recommended, also milk and whisky in small amounts and oft repeated. If the patient can bear wine or beer in small quantities at meal times they are permissible, but should never be given in doses large enough to irritate the stomach.

Excellent results may be expected from change of climate if the case is not too far advanced, and providing that the patient remains long enough at an altitude where he can enjoy pure air and out-of-door life.

In advanced cases Bjorkman condemns any change of climate which would take the patient away from his friends.

Individuals with weak heart, arteriosclerosis, diabetes and emphysema should not be sent to high altitudes, but rather

to a low, dry, sunny climate, where the air is pure and the fluctuations of temperature not great.

In the medicinal treatment, it should be the aim to raise the physiologic activity of the cells as nearly to normal as possible, in this way facilitating the destruction of tubercle bacilli and assisting in eventual cicatrization. While Bjorkman places no specific value in the following medicinal combinations, they are recommended according to the certain requirements and value in correcting digestive, bronchial and nutritive disturbances:

℞ Creosoti ..... m. lxxv 5
Mucil. acaciæ ..... ʒiiss 10
Pulv. althææ rad. q. s.

M. Ft. pil. No. c. Sig.: Two pills after each meal, gradually increasing the dose to five pills after each meal.

The foregoing may be continued for several months. Or:

℞ Creosoti ..... ʒi 4
Tinct. nucis vomicæ ..... ʒii 8
Mucil. acaciæ ..... ʒi 30
Syrupi hypophos. q. s. ad ..... ʒiv 120

M. Sig.: One teaspoonful after each meal.

Guaiacol is recommended as follows:

℞ Guaiacol. carb. ..... gr. iii-viii |20-.50

M. Ft. chart. No. i. Sig.: One such powder morning and night, gradually increasing the amount to 75 grains (5.00) a day. Or:

℞ Guaiacoli ..... gr. xxx 2
Olei amygd. dulcis ..... ʒv 20
Pulv. acaciæ ..... ʒiiss 10
Ft. emulsio et adde
Aquæ dest. q. s. ad ..... Oii 1000

M. Sig.: Eight ounces to be injected by the bowel once daily.

If digestive disturbances arise creosote may be administered by the bowels as follows:

℞ Creosoti ..... ʒss-i 2-4
Olei amygdalæ dulcis ..... ʒiiss 75
Vitelli ovi ..... No. i
Aquæ dest. ..... ʒviss 195

M. Ft. emulsio. Sig.: The entire amount to be introduced into the rectum through a high rectal tube.

As an inhalation the following is recommended:

℞ Iodoformi ..... gr. xv 1
Creosoti ..... m. iv |25
Olei eucalypti ..... m. viii |50
Spts. chloroformi ..... ʒss 2
Spts. vini rect.
Spts. etheris, ää ..... ʒss 15

M. To be used as an inhalation. Or:

℞ Resorcini resublim. ..... gr. viii-xvi |50-1
Aquæ dest q. s. ad ..... ʒiv 120

M. Sig.: To be used in a steam inhaler.

In the treatment of the cough the sweet cough syrups and elixirs should be avoided, as they tend to quickly disturb the digestion. For the relief of the cough the following is recommended:

℞ Apomorphinæ hydrochlor ..... gr. ss |03
Acidi hydrochlor. dil ..... m. viii |50
Aquæ dest. ..... ʒiv 120
Syr. althææ ..... ʒi 30

M. Sig.: One tablespoonful every two hours.

In extreme cases in which other agencies have failed the following combination is recommended:

℞ Ext. hyoscyami ..... gr. iv |25
Morphinæ hydrochlor. ..... gr. iss |09
Aquæ amygdalæ amari ..... ʒss 15

M. Sig.: From twelve to fifteen drops in water several times a day.

In the treatment of diarrhea the following combinations are recommended:

℞ Pulv. plumbi acetatis
Pulv. althææ rad., ää ..... gr. lxxv 75
Syrupi simplicis q. s. ad massam

M. Ft. pil No. l. Sig.: One pill four or five times a day. Or:

℞ Pulv. opii ..... gr. ss |03
Acidi tannici ..... gr. i |06
Saccheri lactis ..... gr. xii |50

M. Ft. chart. No. x. Sig.: One powder three times a day.

Acute Conjunctivitis.

In conjunctivitis the following outline of treatment is recommended by the *Med. News:*

As an antiseptic lotion the following:

℞ Hydrargyri cyanidi ..... gr. ii |125
Aquæ ..... Oi 500

M. Sig.: To be used as an eye lotion, alternating with the following combination:

℞ Zinci sulphatis ..... gr. v |30
Aquæ ..... ʒiiss 10

M. Sig.: To be instilled into the eye once daily.

When the conjunctivitis is purulent and due to the gonococcus a solution of silver nitrate should be employed locally:

℞ Argenti nitratis ..... gr. v |30
Aquæ ..... ʒiiss 10

M. Ft. lotio. Sig.: To be applied locally to the conjunctivæ, and followed immediately by a saline solution as follows:

℞ Natrii chloridi ..... gr. xxx 2
Aquæ ..... ʒiiss 10

M. Sig.: Apply locally to the conjunctivæ to counteract the effect of the silver nitrate solution.

In keratitis the same outline of treatment may be carried out as in conjunctivitis and the following ointment inserted into the eye as an antiseptic:

℞ Iodoformi ..... gr. v-x |30-.65
Lanolini ..... ʒiiss 10

M. Ft. unguentum. Sig.: A small piece to be placed on the conjunctivæ and massage given to the eyeball. Or:

℞ Hydrarg. oxidi flavi ..... gr. i-v |06-.30
Lanolini ..... ʒiiss 10

M. Ft. unguentum. Sig.: A small piece to be inserted into the eye once daily, followed by massage of the eyeball.

In cases of iritis in which the condition is acute and the pain intense, it is recommended that from four to six leeches be applied to the temporal region and the following ointment applied locally:

℞ Ext. belladonnæ ..... gr. xv 1
Ung. hydrargyri ..... ʒiiss 10

M. Ft. unguentum. Sig.: Apply locally to the region above the eye.

If the condition is very acute the following is recommended:

℞ Atropinæ sulphatis ..... gr. i |06
Cocainæ hydrochlor ..... gr. iv |25
Sol. adrenalini (1-1,000) ..... m. xxx 2
Aquæ ..... ʒiiss 10

M. Sig.: One drop into the eye every three hours.

In cases of glaucoma the following is recommended after iridectomy is performed:

℞ Pilocarpinæ hydrochlor. ..... gr. ii |12
Physostigminæ sulphatis ..... gr. 1 5 |012
Solutio adrenalis (1-1,000) ..... ʒi 4
Aquæ ..... ʒi 4

M. Sig.: As an instillation into the eye four or five times daily.

In cases of granular conjunctivitis the following is recommended:

℞ Cupri sulphatis ..... gr. i |06
Acidi salicylici
Cocainæ hydrochlor., ää ..... gr. ii |12
Lanolini ..... ʒiiss 10

M. Sig.: Apply locally to the conjunctivæ at night, and wash it off in the morning with a warm boric acid solution.

Rheumatism.

In the treatment of rheumatism or tonsillitis the following combination is recommended by Dr. E. S. McKee in *Merck's Archives:*

℞ Codeinæ sulph. ..... gr. iv |25
Acetanilidi ..... gr. xlv 3
Sodii salicylatis ..... ʒiiss 10
Alcoholis ..... ʒss 15
Syrupi rubi ..... ʒi 30
Glycerini ..... ʒss 15

M. Sig.: One teaspoonful every three hours in water.

The alcohol is used to dissolve the acetanilid, and the raspberry syrup and glycerin aid in rendering the mixture more palatable.

Medicolegal

Members of State Board of Health Can Not Sue.

The Supreme Court of Georgia holds, in Woodward vs. Westmoreland, that the act of that state of 1903 creating the state board of health, not declaring that board to be a corporation and not conferring on the board as such, nor its members, the right to sue, no suit can be brought, in the names of the members of the board, in alleged representative capacity, relating to matters within the jurisdiction of the board. It says that the board is created simply as an agency of the state government, to have supervision and control over all matters relating to the public health. There are always a number of these agencies for the control of certain matters relating to public affairs, and the authority of such agencies, or of the individuals composing the same, to bring suit in behalf of the public, depends upon the terms of the act creating the agencies and defining their limits and powers. If the act creating the board does not declare it to be a corporation, and does not in terms authorize a suit to be brought by it or its members, then suits cannot be brought by the members in their individual capacity.

No Damages for Physical Injury from Mental Anxiety.

The Appellate Court of Indiana, Division No. 1, says, in the case of Kagy vs. Western Union Telegraph Co., that it is now the rule of law in Indiana, in harmony with the weight of authority elsewhere, that damages can not be recovered for mental anguish alone, caused through the negligent failure of a telegraph company to deliver a telegraphic message. But the question presented here was: In a case where the direct effect of the defendant's negligence is mental anxiety and distress, for which alone no damages are recoverable, however real and manifest the mental disturbance be, may there be recovery for physical consequence of such mental hurt? The court, however, is unable to find any reason for allowing a recovery of damages for physical injury resulting from mental anxiety and suffering, occasioned by negligence, which would not require it to hold the defendant to liability where the consequence of such negligence is mental suffering alone. Every serious mental shock or tension has physical sequence of varying severity and duration, which is immediately connected with, and naturally dependent on, the mental disturbance as the cause thereof. If mental injury of such character is so obscure and incapable of satisfactory investigation in a court of justice that it is wise policy not to submit the matter to a jury, the physical depression or irregularity reasonably to be expected therefrom is ordinarily not less difficult of being intelligently apprehended as a matter of damages. Moreover, in this case the alleged consequence was the rupture of an intestine by the plaintiff, who was sick with typhoid fever, and the court follows the statement of that fact with the declaration that even where damages are allowed in such cases, as in some jurisdictions, for mere mental suffering, it is said that they "ought not to be enhanced by evidence of any circumstances which could not reasonably have been anticipated as probable from the notice received by the telegrapher."

Standard for Village Physician.

The Supreme Court of Iowa says, in the malpractice case of Ferrell vs. Ellis, that the defendant was a physician residing in the village of Powersville, Mo. He was called to attend the plaintiff, who lived about three and one-half miles distant, and who had fallen from a ladder and dislocated the radius of his arm at the elbow. Whether it was a forward or a backward dislocation was in dispute. The defendant testified that it was a backward dislocation; that he brought the head of the radius in opposition with the external condyle and dressed the arm extended; that it healed as well as usual in such cases. The arm was examined by other physicians some months afterward, and about seven months after the accident was operated on by a physician of Centerville, assisted by two other physicians. According to their testimony the head of the radius had slipped forward, and after breaking the adhesions they set the arm and dressed it, flexed, or at right angles. The trial court instructed the jury that: "The standard of skill and learning required in any case is that reasonable degree of skill and learning ordinarily exercised by the members of the profession at the time of the treatment in question, having regard to the advanced state of the profession at the time." This, the Supreme Court holds, was erroneous in not limiting the degree of skill and learning to that ordinarily possessed by physicians and surgeons practicing in similar localities. The presumption that prejudice resulted was in no way obviated by the record. No physician other than the defendant, residing at Powersville, testified. Surgeons of more or less experience from Lineville, Corydon, Allerton and Centerville, places varying in population, according to the last federal census, from 690 to more than 5,000 inhabitants, testified; while the village of Powersville was too small to find place in the enumeration. Judicial notice is taken of the population of towns and cities. The Supreme Court has here done so, not to sustain an error, but in order to ascertain if possible, that an error committed might not have been without prejudice. No other debatable question was raised by the record. For the error pointed out a judgment in favor of the plaintiff must be and is reversed.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 21.

1 Condition of the Air of the New York Rapid Transit Subway. G. A. Soper, New York.
2 Explosion of a Radium Tube. R. Abbe, New York.
3 *X-Ray Therapy. A. D. Rockwell, New York.
4 Memoranda Anent the Treatment of Gangrene in the Diabetic. H. Stern, New York.
5 *Laryngeal Edema. H. Smith, New York.
6 *The Three-Glass Catheter Test of Urethral and Bladder Detritus in Urethritis. A. L. Wolbarst, New York.

3. **X-Ray Therapy.**—Rockwell reports the history of a number of cases and gives a summary of his results. There is one case of melanotic sarcoma in which 32 exposures were made with no benefit; one case of osteosarcoma with 40 exposures and no benefit; two cases of epithelioma with 45 and 47 exposures respectively, with recovery in both cases; one case of Basedow's disease, with no benefit from 16 exposures; one case of carcinoma of the tongue with 16 exposures but no benefit; one case of carcinoma of the mouth in which 24 exposures were given with no benefit; two cases of carcinoma of the neck, with 24 and 25 exposures respectively, followed by no benefit; on the contrary, both were stimulated to increased activity of growth; one case of alopecia areata subjected to 22 exposures with no benefit; one case of lupus vulgaris, with 45 exposures, terminating in recovery; one case of lupus erythematosus, with 36 exposures, but no benefit; one case of tuberculous glands in which there was decided benefit, but the treatment was abandoned because of sudden and severe dermatitis; one case of scirrus of the breast, treated by 24 postoperative exposures, in which there was no evidence of return after three years; one case of rheumatoid arthritis with 24 exposures but no benefit; one case of nevus with 36 exposures followed by recovery.

5. **Laryngeal Edema.**—Smith's treatment of these cases is as follows: In the acute stage the external measures consist of cold compresses to the throat, and leeches. Internally a brisk purgative, or even emesis, will abstract some of the accumulating serum. Bits of ice, benzoin vapor, adrenalin by spray to the larynx, and 10 drops of the same solution every hour internally are important therapeutic agents. Venesection is also of value in these cases. Scarification or puncture, whenever feasible, is valuable. If all local measures fail, tracheotomy is the one most effective measure. When edema is secondary to a neighboring abscess, evacuation of pus will generally relieve it.

6. **Three-Glass Catheter Test of Urethral and Bladder Detritus.**—Wolbarst advocates the use of the following test: The anterior urethra is washed out carefully until the washings

come out clear into glass No. 1; this shows the condition of the anterior urethra. A soft, sterile catheter of small caliber is now passel into the bladder, and the bladder contents are drawn off into glass No. 2; this shows the bladder urine plus any possible drippings from the posterior urethra, or any possible urethral detritus carried in by the catheter; with the catheter *in situ*, the bladder is washed out thoroughly, until the washings come out clear; this shows that the bladder is empty of all pus or shreds. About eight ounces of clear fluid are now injected into the bladder, and the catheter is withdrawn; the anterior urethra and the bladder have been thoroughly washed out. The patient now passes two ounces of the fluid into glass No. 3; this shows the condition of the posterior urethra. The separate urines from the three parts of the urinary tract have, therefore, been mechanically obtained. If the physician decides to go into further detail he may massage the prostate and have two ounces of fluid passed into glass No. 4; this will show the prostatic condition after massage.

New York Medical Journal.

April 21.

7 Clinical and Microscopic Variations of Chorioepithelioma from a Practical Standpoint. (To be concluded.) R. T. Frank, New York.
8 Renal Calculus; Symptoms and Treatment. E. Eliot, Jr., New York.
9 *Bile Acids as a Remedy. A. C. Croftan, Chicago.
10 *Brow Ague; Frontal Sinus Congestion with Periodic Headaches. F. Woodbury, Philadelphia.
11 Chemistry of Toxemias in Pregnancy. C. G. I. Wolf, New York.
12 Association of Adenoids and Beginning Deafness in Young Children. P. D. Kerrison, New York.
13 Medical Society of Kingdom Come. W. C. Gardner, New York.
14 Case of Melena Neonatorum. B. E. Helprin, Brooklyn.

9. **Bile Acids as a Remedy.**—According to Croftan, bile acids may be employed with propriety chiefly in three conditions that are causally related to each other, namely, intestinal putrefaction, hepatic insufficiency, gallstone disease, and the various syndromes known to be consecutive to these states. Croftan employs glycocholic acid, in the form of the sodium salt, because it is more readily procurable and cheaper than taurocholic acid. The dose varies according to the exigencies of the case. Croftan has been in the habit of giving half-grain doses at frequent intervals until the desired effect is produced. He says that there is never any danger of giving too much because the sodium glycocholate in no way deranges the stomach, and, if given in very large doses, merely occasionally produces a little diarrhea which promptly carries off the surplus. Aside from the clinical results obtained there are three chemical indices that enough is being given: 1, The disappearance of sulphids from the stools; 2, the disappearance or great reduction of the aromatic sulphates (of which indican is the prototype) from the urine, and 3, the appearance of bile acids in the urine.

10. **Brow Ague.**—The practical feature of Woodbury's paper consists in calling attention to the importance of careful local examination in cases of frontal periodic headache instead of simply dismissing them with prescriptions without such examination. In cases of brow ague the discovery of the local tumefaction directly leads to its removal by methods in common use and the prompt relief of the symptoms. Woodbury says that it has happened in cases of frontal headache that after a course of unsuccessful treatment the patient spontaneously expelled some foreign body or living larvæ which caused the local pain and which would have been recognized at the beginning if a proper examination had been made.

Lancet-Clinic, Cincinnati.

April 21.

15 Use of the Obstetrical Forceps. L. S. Colter, Cincinnati
16 Tuberculosis of the Cervical Lymphatics and Its Treatment. H. C. Sharp, Jeffersonville, Ind.
17 Diagnosis and Treatment of Gallstones. J. G. Albers, Fulda, Ohio.

St. Louis Medical Review.

April 14.

18 X Ray Burn of the Abdomen. A. D. Mewborn, New York.
19 Lycanthropy (Continued). J. Knott, Dublin, Ireland.
20 *Visit to the Mayos at Rochester, Minn. A. C. Bernays, St Louis.

20. **Visit to the Mayos.**—Bernays states that a visit to the Mayos at Rochester, Minn., will convince any one that the home treatment of disease, acute or chronic, is unsatisfactory, and that its results are in every way inferior to hospital or institutional treatment. This being granted, the example set by the Mayos will be followed. Hospitals will be built by aggregations of specialists financially backed by capitalists. The money invested will earn legitimate dividends, and the physicians and surgeons, as well as the men conducting the special departments, will be paid. He can thus see the easy solution of many questions that now perplex and retard professional aims and ends. There will be united effort, and the miserable, petty, personal interests will yield to the greater interests and exalted rivalry between fully equipped scientific institutions. The medical profession, as well as the public, will be better served; both will be elevated and benefited by the division of labor among men trained for the special lines of research; and the business management may perhaps be left to a large extent in clerical hands.

Annals of Surgery, Philadelphia.

April.

21 *Value of the Differential Leucocyte Count in Acute Surgical Diseases. C. L. Gibson, New York.
22 Fibrolipoma of Jaw and Neck. L. W. Rose, Rochester, N. Y.
23 *Discission of the Pleura in the Treatment of Chronic Empyema. J. Ransohoff, Cincinnati, Ohio.
24 Movements of the Stomach and Intestines In Some Surgical Conditions. W. B. Cannon and F. T. Murphy, Boston, Mass.
25 Technic of Gastrojejunostomy. W. J. Mayo, Rochester, Minn.
26 *Relative Value of Cecostomy and Appendostomy in the Treatment of Amebic Dysentery by Irrigation and the Colon. H. C. Curl, U. S. N.
27 *Use of Silver Wire for the Cure of Large Herniæ. J. Wiener, Jr., New York.
28 *Primary Tumors of the Urinary Bladder. L. Davis, Boston.
29 Ischemic Muscular Atrophy, Contractures and Paralysis. A. H. Ferguson, Chicago.

21. **Value of Differential Leucocyte Count.**—Gibson claims that the differential blood count and its relation to the total leucocytosis is to-day the most valuable diagnostic and prognostic aid in acute surgical diseases that is furnished by any of the methods of blood examination. It is of value chiefly in indicating fairly consistently the existence of suppuration or gangrene, as evidenced by an increase of the polynuclear cells disproportionately high as compared to the total leucocytosis. The greater the disproportion the more sure are the findings, and in extreme disproportions the method has proved itself practically infallible. As the relative disproportion between the leucocytosis and the percentage of polynuclear cells is of so much more value than the findings based on a leucocyte count alone, this latter method should be abandoned in favor of the newer and more reliable procedure. The negative findings showing no relative increase or even an actual decrease of the proportion of the polynuclear cells while of less value, shows with rare exceptions the absence of the severer forms of inflammation. In its practical applications the method is of more frequent value in the interpretation of the severity of the lesions of appendicitis and their sequel. In order to have some standard to measure disproportion of the polynuclear percentage, it is suggested that a trial be made of a chart which is tentatively recommended under the arbitrary designation of standard.

23. **Discission of Pleura in Chronic Empyema.**—Ransohoff urges that every operation on the thorax for pleuritic effusions of any kind should be done with the patient on his back or slightly resting on the sound side. An incision should be made above the fistulous opening and a piece of one or two ribs removed in order that the cavity may be subjected to inspection and to touch. According to the size of the cavity thus determined, multiple subperiosteal rib resections are to be made either through a number of parallel incisions, through the U-shaped Schede incision, or through a trapdoor incision, a method favored by the French surgeons. It matters little which of these methods be practiced, provided that the resections be ample and that the thickened parietal pleura be excised. Attention should then be given to the diaphragm and to the pulmonary pleura. If the thickened pleura can be removed easily by decortication, it is, perhaps, preferable. If ample expansion of the lung does not ensue an incision in the groove of reflection of the costal and pulmonary pleura must

be made. The condition of the patient should be carefully watched lest too much be done at one sitting. When the cavities are large, repeated operations are necessary for the safety of the patient.

26. **Cecostomy and Appendostomy in Amebic Dysentery.**—In intermediate cases in which treatment is not controlling the dysentery, but in which the patients still have a reasonable amount of strength, Curl claims that the operation of cecostomy, with irrigation of the colon with quinin solution, is indicated. Cecostomy is preferred to appendostomy because of less sloughing and an easier closure of the fistula. The appendix should be removed at the time of fastening the cecum in the abdominal wound. A rapid improvement usually follows the beginning of irrigation, but convalescence is slow, and at times difficulty is experienced in closing the fistula. The after-treatment,—irrigation, etc.,—is tedious, and the patients are offensive cases to have in a ward. And in all, it is the lesser of two evils, it saves lives in selected cases.

27. **Silver Wire for Cure of Large Hernia.**—Wiener believes that it can be safely said that if the silver-wire filigree be correctly made and correctly introduced according to the method devised by Bartlett, it will seldom be necessary subsequently to remove it. If, furthermore, the precaution be taken of introducing two separate filigrees in different planes, then the large majority of otherwise inoperable herniæ will be cured radically. He says that with careful attention to a few technical details we have in the use of the filigree a rapid, safe, and efficient method of curing large herniæ, and one that deserves, in properly-selected cases, the hearty approval of every surgeon.

28. **Primary Tumors of Urinary Bladder.**—From a clinical and histological study of 41 cases of tumor of the bladder, Davis draws the following conclusions: 1. Stone in the bladder is not an etiologic factor of importance in the causation of these tumors. 2. The condition of the underlying bladder-wall in regard to epithelial infiltration, is the more satisfactory and reliable guide in the determination of the benign or malignant character of papillary epithelial tumors of the bladder. 3. If the foregoing condition is accepted as the differential test of these growths then will the benign forms commonly called papillomata, be found to at least equal if not outnumber the malignant, the papillary carcinomata. 4. Recurrent epithelial tumors are not necessarily malignant. 5. Papillary tumors of the bladder, proved to be histologically benign, may rapidly lead to a fatal result if left alone. 6. Surgical intervention at the proper time in the case of pedunculated papillary tumors of the bladder offers a very fair chance of long immunity, if not of permanent cure. 7. The method of surgical intervention to be preferred in these cases, is excision of the tumor in toto, with a margin of bladder wall at its base, including mucosa, sub-mucosa, and muscularis in part; the section need not penetrate the entire thickness of the wall. In this way, a beginning epithelial infiltration of the base, if present, may be circumvented; or if it is not present, the knowledge of the fact is of general value in the important matters of diagnosis and prognosis. The defect in the bladder wall should be closed with sutures, which will at the same time control hemorrhage. The gravity of the operation is not appreciably increased by this procedure.

The Journal of Nervous and Mental Disease, New York.

April.

30 *Care of the Insane and the Study of Psychiatry in Germany. S. Paton.
31 Dispensary Work in Nervous and Mental Diseases. S. E. Jelliffe, New York.
32 *Tuberculous Meningitis. J. N. Hall and S. D. Hopkins, Denver, Colo.
33 *Leprosy Simulating Syringomyelia. H. C. Moffitt, San Francisco.
34 Types in Mental Diseases. W. A. White, Washington.
35 Importance of the Early Diagnosis of Mental Diseases. G. Stockton, Columbus, Ohio.

30. **Study of Psychiatry in Germany.**—Paton says that although the German methods of organization may occasionally reflect the disadvantages of constitutional monarchy, the American methods may, if eternal vigilance is not exercised, assume the form of absolutism. If common-sense business methods, a sense of patriotism and a true feeling of democracy are guiding principles of those whose duties it shall be to organize the first university psychiatrical clinic in America, the future of psychiatry will be bright. To one who seriously considers the national importance of these clinics, there can be little doubt that state authorities as well as private benefactors will soon make it possible to establish in the United States, under university control, a number of institutions whose purposes may be briefly summarized as follows: 1. The cure of many patients who now become hopelessly insane. 2. The instruction of medical students as well as practicing physicians in psychiatry, so that eventually there may be found in the community a greater number of men who are competent to advise whether an individual is capable of standing the mental strain imposed by special forms of education or is liable to endure the nervous strain of the enviroment in which the individual lives. 3. The possibility of keeping under observation a large number of individuals whose nervous system may, if occasion presents itself, become sources of danger to the individuals themselves or to the community. 4. The examination of cases in which the question of mental responsibility is under debate and a submission to courts of formal reports based on observation to supersede the hypothetical expert evidence that so frequently is a parody of justice. 5. The study of all problems whose ultimate solution will tend to a more comprehensive understanding of the functions of the brain, with a view to determining the most efficient methods of increasing the number of individuals in the nation who are capable of rational thought and action.

32. **Tuberculosis and Meningitis.**—Hall and Hopkins report fifty-two cases, forty of which occurred in male subjects. Twenty-nine of the cases occurred after twenty years of age; only fourteen were in the first decade of life; nine of these were in children under the school age. In eleven cases there was a history of at least one death in the family from tuberculosis. In three instances two of the family had died of tuberculosis, in two instances three, and in one instance six. There was a positive history of preceding tuberculosis in twenty-five cases. Abdominal tuberculosis was also present in one of the cases. One of the children who died had had a tuberculous nurse during the previous summer. In another child, a tuberculous meningitis followed shortly after a severe attack of whooping-cough. The duration of the disease was ten days or less in about half the cases, while but twelve cases lasted over fifteen days. Cheyne-Stokes respiration was noted in 14 cases. Unconsciousness was noted in forty-four of the cases, and in one it is said to have been absent until death approached. The pupils were noted as unequal and responding to light in nine cases. Optic neuritis was noted in the majority of the cases. Divergence of the eyes was noted in eight cases, convergence in two, divergence to the right in three cases, to the left in one case. In one case each blindness, hippus and ptosis are noted. Rigidity of the neck was noticed in 24 cases. Muscular twitching was noted in the right arm twice, both arms three times, left leg once, all over three times, and general convulsions occurred in three cases. The reflexes were noted as increased in fourteen cases, as decreased in five, and absent in fourteen cases. The superficial reflexes were absent in seventeen cases, slight in one case, and increased in but a single case. The Babinski reflex was noted on the left side only once, on both sides once. Kernig's sign was frequently present, but the authors have no exact statistics on it. Paralysis was absent in six cases. Among the complications noted were the following: Erysipelas, tuberculous peritonitis, erythema of great extent, alcoholism, melancholia, myelitis, acute pneumonia, phlebitis, uremia, acute bedsores, ulcer of edge of cornea with inflamed conjunctiva and enlarged glands in neck.

33. **Leprosy Simulating Syringomyelia.**—Moffitt reports the case of a boy, 11 years of age, who presented symptoms pointing strongly toward syringomyelia, except for the following: 1. The absence of sympathetic eye signs in presence of the involvement of the small muscles of the hand supplied by the first dorsal segment; 2, the absence of scoliosis; 3, the absence of rigidity and of increased reflexes, especially the absence of these signs in the lower extremities; 4, the distribution of the palsies left hand and right foot, and the limitation of palsies

and atrophies to the distal parts of the extremities; 5, the absence of ataxia and sphincter involvement; 6, the loss of temperature sense in the left ear, and the limitation of sensory changes in the right arm to the areas supplied by the ulnar nerve; 7, the absence of the Babinski sign and the abolition of the plantar reflex; 8, the widespread involvement of sensation in the lower extremities; 9, the thickening of the peripheral nerves.

Buffalo Medical Journal.

April.

36 Some Minor Rectal Lesions. D. H. Murray, Syracuse, N. Y.
37 *Posterior Gastroenterostomy; An Unusual Postoperative Complication. J. Burke, Buffalo, N. Y.
38 Operation for Strangulated Femoral Hernia. F. H. Flaherty, Syracuse.
39 *Constipation in Childhood. E. S. McKee, Cincinnati.

37. **Gastroenterostomy.**—The patient whose case is reported by Burke was operated on for an acute perforation of a gastric ulcer. A posterior gastroenterostomy by Connell suture with button enteroenterostomy was made, and the abdominal wound closed. After four months of absolute relief from gastric disturbance symptoms which indicated a return of the original trouble appeared suddenly, beginning with vomiting. The vomiting became so persistent that even liquids were rejected as soon as taken. A second operation was done and it revealed the following condition: The union of bowel and stomach as well as the enteroenterostomy was perfect. At a point half an inch away from the stomach, coming from the transverse mesocolon, was a tough band of adhesion one-eighth inch wide attached to and constricting the efferent jejunal loop; the gastrointestinal anastomosis opening would hardly admit the tip of the little finger; evidently the partial obstruction of the circulation of intestinal contents from the stomach to and through the efferent bowel put the new opening proportionately out of function, in consequence of which corresponding contraction took place. The anterior line of gastrointestinal union was incised, some encapsulated celluloid was removed, the interior of the stomach and bowel being exposed. The opening was made larger and the anastomosis completed as usual. One year after the second operation the patient reports perfect health.

39. **Constipation in Childhood.**—The treatment employed by McKee consists of the usual remedies used for the relief of this condition and massage of the abdomen from eight to ten minutes, morning and evening. This massage should be a circular motion commencing in the lower right quadrant of the abdomen and extending up, across and down the abdomen, following the course of the colon.

The Journal of Infectious Diseases, Chicago.

April 6.

40 Significance of Streptococci in Milk. P. G. Heinemann, Chicago.
41 *Method of Isolating the Pneumococcus in Mixed Cultures, Such as Throat Cultures. G. F. Ruediger, Chicago.
42 Common Mosquitoes of Bihe and Ballundo Districts, Portuguese West Africa. (Concluded.) F. C. Wellman.
43 *Toxins and Antitoxins of Poisonous Mushrooms (*Amanita Phalloides*). W. W. Ford, Baltimore.
44 Auxilysins. W. H. Manwaring.
45 New Species of Trypanosome Occurring in the Mouse Mus Musculus. A. I. Kendall.

41. **Method of Isolating the Pneumococcus.**—With the object of making the isolation of pneumococci easier, Ruediger has prepared a blue litmus inulin-agar medium, in which pneumococci form red colonies. This medium is simply a sugar-free agar, with the addition of inulin and litmus, and is made as fololws:

(a) Peptone (Witte)	10
Agar-agar	15
Sugar-free beef broth (neutral)	1,000

Ruediger's directions are to dissolve the mixture by boiling one hour, adding water from time to time to make up the loss from evaporation. Heat in the autoclav for from 15 to 20 minutes (to prevent subsequent precipitation while sterilizing), clarify with egg, filter through cotton, and make the volume up to 800 c.c. with distilled water. (b) Dissolve 15 grams of pure inulin in 200 c.c. of distilled water, mix this solution with (a), add 20 c.c. of a 5 per cent. solution of litmus, put in tubes, and sterilize in the autoclav under 10 pounds' pressure for 15 minutes. Each tube should contain 7 or 8 c.c. of medium. Some pneumococci do not grow well in this medium, hence it is necessary to add 1 c.c. of heated (65 C.) ascites fluid to each tube of melted agar (which has been cooled to 45 C.) immediately before using. In this mixture the pneumococci grow very well, and in from 24 to 96 hours the inulin fermenters form red colonies (acid production), which stand out very prominently on the blue background. The surface colonies do not produce so much acid as the deep colonies, and it is for this reason that each tube should contain a rather large amount of medium. In this way a thick plate is formed, with relatively few surface colonies.

43.—See editorial in The Journal, April 21, 1906, page 1209.

The Journal of the Michigan State Medical Society, Detroit.

April.

46 *Sporadic Cretinism. H. H. Sanderson, Windsor, Canada.
47 Why Not Be Frank with the Public? E. H. Flynn, Marquette.
48 Operative Treatment of Recent Closed Fractures. C. S. Oakman, Detroit.
49 *Treatment of Chronic Constipation Without Cathartics. L. J Hirschman, Detroit.
50 Health Officers, Their Duties and Responsibilities in Contagious Diseases. F. W. Shumway, Lansing.

46. **Sporadic Cretinism.**—The three cases reported by Sanderson occurred in three sisters, aged 21, 11 and 8 years respectively. The father was perfectly well and gave no history of goiter or any hereditary disease. The mother gave a history of having had a thick neck when young, and also an abscess in the neck. All the patients presented the characteristic signs of cretinism. They were treated with thyroid extract, 5 grains, three times daily, with very satisfactory results.

49. **Treatment of Chronic Constipation.**—The treatment outlined by Hirschman consists in strict observance of all hygienic measures tending toward improving the tone of the intestinal muscle, of the abolition of dietetic errors and of internal massage and dilation of the sphincter, the latter a method which has been attended by uniform success. It consists in the introduction into the rectum and sigmoid of sausage-shaped pneumatic dilators. These are dilated to conform to the shape of the rectum or sigmoid by means of low compressed air pressure. This dilatation is carried to a point where the patient feels a fullness and the dilator is alternately inflated and deflated and manipulated so that the mucous lining of the bowel is stimulated and the circular muscular fibers contract and gradually regain their tone. Cases of chronic constipation of years' standing have been successfully treated and cured in from one week to two months' treatment, the most obstinate case not requiring over 25 treatments to establish a perfect cure. Normal defecation usually follows within a few hours after the first treatment. These pneumatic dilators the author has made from a rubber bag shaped like a condom and they are mounted on a Wales bougie, sizes 5 to 7. These are attached by means of a cutoff valve to the compressed-air apparatus, at a low pressure, and are slowly expanded and allowed to empty themselves. These treatments do not last over five minutes at a time and are followed by good expulsive efforts.

Denver Medical Times.

April.

51 Acute Coryza. D. S. Neuman, Denver.
52 *Treatment of Acute Coryza. T. E. Carmody, Denver.
53 Prevention and Treatment of Coryza. W. C. Bane, Denver.
54 *Coryza (Acute Rhinitis, Cold in the Head, the Snuffles). F. E. Waxham, Denver.
55 Prevention and Treatment of Simple Acute Coryza. J. M. Foster, Denver.
56 Treatment and Prevention of Acute Coryza. J. H. Allen, Denver.
57 Early Diagnosis of Tuberculosis. G. R. Pogue, Denver.
58 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.
59 Vomiting. D. S. Neuman, Denver.

52. **Treatment of Acute Coryza.**—Carmody outlines his treatment of all forms of acute coryza, including the preventive treatment. In the early stages he makes use of hot alkaline douches, purgatives, hot footbath, hot lemonade and Dover's powders, and 1 to 10,000 adrenalin solution, the latter to be followed by an oil spray as a protective. In the second stage hot alkaline solutions are used, and if necessary an astringent spray composed of:

R. Ext. hamamelidis	ʒi	30
Ext. hydrastis	ʒiv	15
Aquæ dest. q. s.	ʒii	60

Internally he uses 1/200 grain of atropin, repeated in from four to six hours, or the following may be used:

℞. Ammonii mur.
Camphoræ, āā.....gr. 1/2 |03
Ext. belladonnæ
Opii pulv., āā.....gr. 1/15 |004

54. Id.—Waxham has found the following combination very effective:

℞. Quininæ salicylatis.....gr. 1½ |10
Acidi arsenious.....gr. 1/120 |00055
Ext. belladonnæ.....gr. 1/20 |003
Capsicum.....gr. ¼ |015

Two of these capsules may be given every hour for three hours, and subsequently one every three hours. Waxham claims that when commenced early this combination acts almost as a specific.

The Postgraduate, New York.

April.

60 Primary Sarcoma of Pleura and Lung in a Young Girl. R. Abrahams, New York.
61 Resection of a Large Portion of the Chest Wall for Sarcoma. F. Torek, New York.
62 Pyelitis Treated by Lavage of the Pelves of the Kidneys. H. D. Furniss, New York.
63 Aortic Insufficiency and Mitral Stenosis. R. Abrahams, New York.
64 Three Cases Showing the Therapeutic Value of Ovarian Extract. L. L. Roos, New York
65 Case of Tricuspid Stenosis. G. H. Cocks, New York.
66 Mural Thrombus of Left Auricle. Mitral Stenosis. G. H. Cocks, New York.
67 Large Osteoma of Superior Maxilla. F. Torek, New York.
68 Fetus Papyraceus. S. S. Graber, New York.
69 Prolapsus Uteri, S. S. Graber, New York.
70 Acute Dementia, Following the Radical Mastoid Operation. R. J. Heid, New York.
71 Management of Postpartum Hemorrhage. J. O. Polak, New York.
72 Successful Treatment of Tuberculosis. A. E. Rogers, Boston.

Canada Lancet, Toronto, Canada.

April.

73 Abdominal Examination. K. C. McIlwraith, Toronto.
74 Epidemic Catarrhal Jaundice. J. L. Addison, St. George, Ont.
75 *Rare Cause of Delay in the First Stage of Labor. A. Fletcher.
76 Bases of Success—The Rectoral Address at the University of Aberdeen. F. Treves.
77 *Value of Vaccination. Drs. Macallum, Sheard, Oldright and others.

75. Rare Cause of Delay in First Stage of Labor.—In the first case reported by Fletcher the os was closed over by a band, which was ruptured with the finger, the labor then proceeding normally. The patient admitted having attempted an abortion.

77. Value of Vaccination.—In this article are presented the opinions of persons in favor of and against vaccination. Statistics are quoted from various places and in the United States proving the protection and immunity which is conferred by vaccination.

Northwest Medicine, Seattle, Wash.

March.

78 Treatment of Fractures of the Femur. H. E. Allen, Seattle.
79 Infantile Digestive Disorders. G. B. McCulloch, Seattle.
80 First Five Years of Childhood. W. C. Hastings, Seattle.
81 Clean Milk Question—The Control of the Milk Supply in Cities. G. V. Genoway, Spokane.
82 Stable Hygiene. Initial Contamination of Milk. S. B. Nelson, Pullman.
83 Fish Bone in the Appendix. J. B. Eagleson, Seattle.

Medical Sentinel, Portland, Ore.

March.

84 Social Aspects of Dermatology. A. Tilzer, Portland.
85 Malaria and the Kidney. I. B. Bartle, Eugene.
86 Eyes of School Children. A. Blitz, Boise, Idaho.
87 Climate of the Pacific Northwest and Its Influence on Nervous and Mental Diseases. W. House, Portland.

New Orleans Medical and Surgical Journal.

March.

88 Melancholia. E. M. Hummel, Jackson.
89 Blood Smears; A Simple Method of Preparation—Their Diagnostic Value. J. B. Guthrie.
90 Suppurative Otitis Media. J. H. Fridge.
91 Acute Affections of the Pharyngeal Tonsil in Early Life. H. Dupuy.
92 Reflex Neurosis of Nasal Origin. G. King.
93 Retiring President's Address, New Orleans Parish Medical Society. L. G. LeBeuf, New Orleans.
94 Incoming President's Address New Orlean's Parish Medical Society. C. J. Miller, New Orleans.
95 Annual Oration, New Orleans Parish Medical Society. J. Y. Sanders.
96 Probable Syphilitic Disease of the Meninges of the Lumbar Portion of the Spinal Cord. R. M. Van Wart.
97 Cheilitis Glandularis. J. N. Roussel.
98 Circumstances and Conditions of the First Appearance of Yellow Fever in New Orleans and Country Parishes. C. M. Brady.

Vermont Medical Monthly, Burlington.

March 15.

99 Stenosis of the Pylorus in Infants. C. L. Scudder, Boston.
100 Bronchitis and Bronchopneumonia in Children. W. A. Wood, Gallatin.
101 Care of Premature Infants. L. C. Holcombe, Milton, Vt.

Columbus Medical Journal.

March.

102 Jaundice and Its Treatment. W. H. Birchmore, Brooklyn, N. Y.
103 First Two Years of the Medical College Course. C. C. Howard, Columbus.
104 Medical College Curriculum—The Last Two Years. J. C. Oliver, Cincinnati.
105. Id. G. J. Jones, Cleveland.
106 The Hunt Bill. C. R. King, Newark.

Iowa Medical Journal, Des Moines.

March 15.

107 Prostatic Hypertrophy. C. E. Ruth, Keokuk.
108 Treatment of Vernal—Granular—Conjunctivitis. D. H. Lewis, Ottumwa.
109 Cervical Lymphadenitis. C. L. Marston, Mason City.
110 Observations. W. D. Craig, Henderson.
111 Medical Reflections. J. S. Sprague, Stirling, Ontario, Canada.
112 Medical Treatment of Goiter. H. H. Fletcher, Winchester.
113 Medical and Surgical Progress. F. A. Palmer, Des Moines.

Detroit Medical Journal.

March.

114 Scopolamin-Morphin Anesthesia. R. R. Smith, Grand Rapids.
115 Status Lymphaticus; Its Significance in Sudden Death Following Serum Injections and in the Treatment of Diphtheria. A. P. Ohlmacher, Detroit.
116 Strain as a Factor in Cardioaortic Lesions. (Continued). H. B. Anderson, Toronto.
117 Coin in the Esophagus. P. M. Hickey, Detroit.
118 Progress of Surgery. F. B. Tibbals and C. S. Oakman, Detroit.

Illinois Medical Journal, Springfield.

March.

119 Requirements of Scientific Nursing. J. W. Smith, Bloomington.
120 Artificial Hyperemia in Surgery. A. C. Wiener, Chicago.
121 Tuberculosis of the Male Urinary Tract. A. D. Bevan, Chicago.
122 Syphilis of the Male Genitourinary Organs. H. G. Anthony, Chicago.

The Medical Herald, St. Joseph, Mo.

March.

123 Postoperative Hemorrhage in Abdominal Surgery. F. E. Walker, Worthington, Minn.
124 Dermatitis Venenata. W. Frick, Kansas City.
125 Repairing Lacerations After Confinement. A. E. Reeves, Farnam, Neb.
126 Case of Malingering. J. K. P. Bowen, St. Joseph.
127 Poisoning by Rhus Toxicodendron of Rhus Radicans. E. S. McKee, Cincinnati.

Brooklyn Medical Journal.

March.

128 Cystic Degeneration of Chorionic Villi. A. R. Matheson, Brooklyn.
129 Relation of Blood Examination to Surgical Diagnosis. J. E. Jennings, Brooklyn.
130 Hernia of the Bladder, Complicating Inguinal and Femoral Hernia. O. A. Gordon, Brooklyn.
131 Sarcoma of the Kidney in Children. A. H. Bogart, Brooklyn.
132 Spastic Constipation. D. Roberts, Brooklyn.
133 Eversion Forceps. J. W. Ingalls, Brooklyn.

Southern California Practitioner, Los Angeles.

March.

134 Commitment of Patients to Hospitals for the Insane in California. A. P. Williamson, Patton.
135 Treatment of Minor Surgical Injuries. E. H. Wiley, Los Angeles.
136 An Operation for the Painless and Bloodless Removal of Submerged and Adult Tonsils. F. B. Kellogg, Los Angeles.
137 Mouth Breathing in Relation to Mental and Moral Hygiene. R. A. Harris, Los Angeles.
138 San Diego as a Health Resort. T. Magee, San Diego.

Journal of the New Mexico Medical Association, Albuquerque.

March 15.

139 Chorea. G. W. Harrison, Albuquerque.
140 Operative Treatment in Fracture of the Patella. J. B. Cutter, Albuquerque.
141 Climatic Treatment of Pulmonary Tuberculosis. P. M. Steed.
142 History and Physiology of General Anesthesia. F. T. B. Fest, Las Vegas.

The Chicago Medical Recorder.

March 15.

143 Efficiency of Salicylate of Sodium in Inflammatory Eye Diseases. H. Gradle, Chicago.
144 Hemorrhage Into the Spinal Meninges. I. A. Abt, Chicago.
145 Involvement of the Eye in Syphilis. E. F. Snydacker, Chicago.
146 Complications in Typhoid Fever. J. H. M. Ohadovec, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
April 7.

1 Acute Peritonitis Due to Appendicitis. B. Bramwell.
2 *Surgical Treatment of Gastroptosis. F. Eve.
3 *Complicated Case of Appendicitis. E. S. Stevenson.
4 Importance of the Colon. M. S. Monler-Williams.
5 Large Ovarian Cystoma, with Twisted Pedicle, Complicated by Suppurative Appendicitis. J. T. Hewetson.
6 *Therapeutic Value of Sarsaparilla in Syphilis. C. J. Cullingworth.
7 Tabes Dorsalis. D. Ferrier.

2. **Surgical Treatment of Gastroptosis.**—Eve says that if possible the stomach should be raised into its normal position by means of its natural suspensory ligaments, the gastrophrenic and the gastrohepatic omentum. This is carried out by Beyea's operation, but in three of Eve's cases this procedure was absolutely impracticable on account of the extreme tenuity of the gastrohepatic omentum. The operation performed on these three patients was very similar in each instance, and may be described as follows: A sand bag was placed beneath the back, and the liver raised and held upward as in performing operations on the gall bladder. Five silk sutures were then passed through the lesser curvature of the stomach, ranging from the pylorus to the cardiac orifice, and above they were carried through the attachment of the lesser omentum to the liver, and forward, somewhat deeply, through the liver substance itself, in order to obtain a better hold. When these sutures were tied the lesser curvature was effectually raised and the greater curvature was roughly two inches above the umbilicus. There being a tendency to displacement of the liver downward, a series of interrupted sutures were carried through the anterior surface of the left lobe of the liver, and then through the margins of the costal cartilages.

3. **Complicated Case of Appendicitis.**—Stevenson's patient had had ill-health for several months and was suffering from some vague abdominal pains and from an offensive vaginal discharge. She presented all the classical symptoms of a true appendicitis. Two days later, the symptoms getting worse, she was operated on. Inside the peritoneal cavity coils of small intestines were seen glued together, and a sac was opened containing a good deal of pus; on a higher level another cavity was entered and more offensive pus let out. As the appendix could not be felt, the cecum firmly anchored down, and the patient's condition septic, nothing further was done; the sacs were cleaned with gauze and drained with split tubes. The immediate results were satisfactory. On the fifteenth day the temperature began to rise and the abdomen to swell, but there were no special pains. This condition lasted a fortnight, and the woman was then operated on again. The new incision was made outside the former one so as to enable the surgeon to work from without inward. The cecum was fixed and adherent to the lateral wall and not covered by peritoneum. Carefully dissecting always inward, a grooved cavity was reached, and in it a fecal concretion the size of a hazelnut was found. No appendix could be seen, but low down in the pelvis the end of the appendix was felt adhering to the right tube or to the uterus. From the terminal end to its origin the appendix was pocketed in a mass of adhesions. The appendix was then dissected upward, leaving in some places its peritoneal covering behind. The pocket was cleaned out and the external wound sewn up without drainage. The appendix was large and ruptured in two places—at its end and a little higher up where the adhesion had taken place and where the concretion had escaped. A week after this last operation the patient developed all the symptoms and signs of pneumothorax on the right side. She was again operated on, and following this operation made a complete recovery.

6. **Sarsaparilla in Syphilis.** Cullingworth reports 10 cases to show the excellent results obtained in the treatment of syphilis with a decoction of sarsaparilla, given three times a day in four ounce doses. Three pounds of sarsaparilla were placed in two gallons of water. After boiling this down to one gallon the decoction was strained, two gallons of water were added; boiled down to one gallon and strained, two more gallons of water added and again boiled down to one gallon and strained. Two pounds of sugar were then added, and the resulting liquid was used.

The Lancet, London.
April 7.

8 Hepatoptosis, Glenard's Disease and Moveable Kidney. W. W. Cheyne.
9 Tabes Dorsalis. D. Ferrier.
10 *Value of a Serum (Doyen's) in Cases of Malignant Disease. A. Paine and D. J. Morgan.
11 Pathology of Gangrene and Perforation of the Hollow Abdominal Viscera and Acute Perforating Ulcer of the Stomach. D. Drummond and R. Morison.
12 *Results of Operation for Radical Cure of Hernia. J. Hutchinson.
13 *Treatment of Cancer by Therapeutic Inoculations of a Bacterial Vaccine. C. Jacobs and V. Geets.

10. **Doyen's Serum in Malignant Disease.**—Paine and Morgan investigated the value of this serum in nine cases. The injections had no influence on the course of the disease in four cases. In two cases of carcinoma of the breast the injections were followed by severe constitutional disturbances characterized by cardiac failure. In none of the cases was there any improvement. Doyen's *Micrococcus neoformans* was often found present in 44 cases of tumor, in common with other micrococci, but the authors are of the opinion that it is not present in sufficient numbers or with reasonable constancy to be regarded as the etiologic factor in the evolution of these growths. They were unable to produce a neoplasm in animals inoculated with this germ.

12. **Results of Radical Cure of Hernia.**—A careful study of the results obtained by operation for hernia on 500 patients led Hutchison to draw the following conclusions: 1, In all but the simplest cases in children it is best to open up the canal and to narrow it by deep sutures; 2, suturing the conjoined tendon to Poupart's ligament behind the cord by a series of interrupted sutures is probably the best method of narrowing the canal; 3, when the conjoined tendon is deficient, in all recurrent cases, and in inguinal hernia in women the canal should be obliterated; 4, kangaroo tendon is admirably adapted for the suture material, silver wire being probably the worst; 5, recurrence of the hernia *in situ* may possibly take place at any length of time after the operation, but if two years be adopted as the limit it should not occur in more than from 5 to 8 per cent.; and 6, the development of a hernia at another site after operation may be expected in a proportion of cases at least as large as that just given.

13. **Serum Treatment of Cancer.**—In marked contrast to the results obtained by Paine and Morgan are those obtained by Jacobs and Geets. Their researches have convinced them: 1, That we have in cancerous cachexia a specific micro-organism, the *Micrococcus neoformans* of Doyen; 2, that the anti-cancerous sera of Doyen are wholly useless; and 3, that it is practicable to immunize the human organism by means of a series of inoculations of the *Micrococcus neoformans* vaccine, provided that these are properly controlled by examinations of the opsonic power of the blood. In all the patients treated according to their method, the authors noticed real and definite improvement. They succeeded in cultivating the *Micrococcus neoformans* from 90 per cent. of the tumors examined, and succeeded in producing localized or generalized neoplastic lesions in 30 per cent. of the cases by inoculating young and vigorous cultures of the micro-organism into mice and white rats. The reader is referred to the original paper for a complete description of the methods employed by the authors.

Journal of Tropical Medicine, London.
April 2.

14 Hemipterous Insect Which Preys on Blood Sucking Arthropods and Which Occasionally Attacks Mammals. F. C. Wellman.
15 Horse flies (Tabanidæ) and Disease. E. E. Austen.
16 Anatomy of the Biting Flies of the Genus Stomoxys and Glossina. (To be continued). G. M. Giles.
17 Hypnotic Susceptibility of the Negro Race. C. W. Branch

Intercolonial Medical Journal of Australasia, Melbourne.
February 20.

18 *Congenital Heart Malformations. W. H. Summons
19 Cases of Intestinal Surgery. G. A. Syme.
20 Bullet Wound of Pericardium, Pleura, Stomach, Liver and Spleen—Splenectomy—Recovery. F. D. Bird.
21 Cases of Hemo-Pyo Pericardium and of Perforated Gastric Ulcer—Operation—Recovery. F. R. Legge.
22 Miner's Disease at Bendigo. W. F. S. Bottomley.

18. **Congenital Heart Malformations.**—The cases observed by Simmons are arranged in several groups. 1. In this group cases of patent foramen ovale are included. This group is subdivided into three classes: (a) Those patients which exhibited no cardiac symptoms, and no signs on physical examination, but died in infancy. On autopsy a patent foramen ovale was found. (b) Those which exhibit no symptoms, but on physical examination definite signs may be detected. (c) This class of cases presents well-marked physical signs, and also symptoms of varying intensity. 2. Cases of pulmonary stenosis. 3. Patients with deficient ventricular septum. 4. Aortic stenosis, with patent ductus arteriosus. 5. Patients with a patent ductus arteriosus (a) alone, and (b) associated with another deformity. 6. Cases which present many of the signs of congenital heart malformation, signs and symptoms being present from birth, but in which the postmortem examination indicates that the trouble is a valvulitis, originating, probably, before birth. 7. Patients with some mild heart abnormality, which, after an attack of acute rheumatism, develop a valvulitis or pericarditis, the mixed lesion proving fatal, whereas either lesion alone need not necessarily prove so.

The Dublin Journal of Medical Science.

March.

23 Empyema. W. G. Smith.
24 Surgical Treatment of Empyema. T. Stoker.
25 Bacteriology of Empyema. H. C. Earl.
26 Empyema or Hypophrenic Abscess. J. Moore.
27 Surgical Treatment of Empyema. A. Chance.
28 Treatment of Empyema. W. Taylor.

Bristol Medico-Chirurgical Journal, London.

March.

29 Anti-Tuberculous Vaccines and Sera. J. M. Fortescue-Brickdale.
30 Prognosis of Pulmonary Tuberculosis. J. J. S. Lucas.
31 Why Defective Nasal Respiration Impedes Growth and Development. P. W. Williams.
32 Effects of Fright in Medicine. J. R. Charles.
33 Colitis Polyposa. C. Coombs.
34 Case of Acute Yellow Atrophy of the Liver. F. H. Edgeworth.
35 Acute Yellow Atrophy of the Liver in a Child. B. M. H. Rogers.
36 Splenomegalic Biliary Cirrhosis in a Boy Aged Six Years. E. C. Williams.
37 Epithelioma of Tongue in a Young Woman. C. H. Whiteford.

Presse Médicale, Paris.

38 (XIV, No. 16.) *Cinq ans de sérothérapie antityphoide (five years). A. Chantemesse.
39 Brulures graves produites par l'explosion d'une chaufferette a l'acétate de baryte (severe burns from explosion of chemical heater). F. de Lapersonne.
40 Des injections alcooliques au niveau des trous de la base du crane dans la névralgie faciale rebelle. F. Ostwalt.
41 (No. 17.) *Bouteilles à poisons (bottles for poisons). Desfosses.
42 De la sénilité. L'artériosclérose. A. Letienne.
43 Complications des fibromes de l'ovaire. O. Guelliot.
44 La méthode de Bier dans les hydarthroses. R. de Gaulejac.
45 (No. 18.) Des colloides. Leur importance biologique. H. Iscovesco.
46 *Administration de lait caillé dans le néoplasme stomaco-pancréatique. A. Martinet.

38. **Five Years of Antityphoid Serotherapy.**—Chantemesse gives a table showing the mortality from typhoid fever in the various hospitals of Paris during the last five years, the average being 17.3 per cent. in 3,595 cases. At the hospital known as Bastion 29, there have been 712 typhoid patients, and all have been treated with antityphoid serum, with a mortality of only 3.7 per cent. This treatment has not yet been introduced in the other hospitals. In the 27 fatal cases death was due to perforation in 9, to pneumonia in 3, to gangrene of the mouth in 1, to rupture of an aneurism in 1, to cancer of the kidney in 1, and to gangrenous pleurisy in 1. None of the patients succumbed to hemorrhage. Chantemesse makes a practice of giving calcium chlorid in the severe cases not treated until late. A little calcium chlorid is given as a preventive of hemorrhage about the middle or end of the second week. This is about the only drug used aside from the serum. Perforation occurred in only 9 cases, and in these treatment had not been instituted until late. It was never observed in any patient whose treatment had been commenced during the first week; all the patients treated during the first week recovered without exception. In 2 other patients perforation occurred, but was successfully sutured. This is a total of 11 perforations in 712 cases, or 1.5 per cent. In various statistics cited the proportion was 2.6 per cent. in 8,160 cases. Chantemesse ascribes the action of the serum to its stimulating influence on the lymphoid system. If the disease is advanced and the lymphoid system gravely affected, it is wise to inject only a small amount of the serum.

41. **Bottles for Poisons.**—Several new designs for bottles are illustrated which would attract attention to the fact that they contain poisons. One is of ordinary shape and size, but is thickly studded with spike-like projections. Another has two necks and stoppers. The contents will not flow out of one neck unless the stopper is taken out of the other neck also. A third form of bottle is bullet-shaped, the point upward; the opening and stopper are at the bottom. A fourth form has the neck of the flat bottle at one corner and turned back horizontally. The contents can be poured out only when the bottle is tipped in a certain direction.

46. **Kefir in Cancer of Stomach and Pancreas.**—Martinet describes without comment the case of a man of 55 with an inoperable cancer in the stomach involving the pancreas, causing continuous pain and vomiting. What he calls "Bulgarian clotted milk, prepared with Maia" was given the patient and at once all pain and vomiting ceased. On a Sunday, when the store was closed and it was impossible to obtain the milk, the pains and vomiting reappeared at once, but vanished again when it was resumed. After an exploratory laparotomy the curdled milk was stopped and again the pains and vomiting reappeared. They vanished when the clotted milk was taken again, and the patient was free from these symptoms on this diet until he succumbed to cachexia. He ingested from 500 c.c. to 2 liters a day.

Semaine Médicale, Paris.

47 (XXVI, No. 11.) Ictère chronique et coliques hépatiques symptomatiques de kyste hydatique du lobe de Spiegel. T. Tuffier.
48 *Le diagnostic précoce de la tuberculose pulmonaire par la recherche des points de submatité des sommets (of apices). M. Landolfi (Naples).

48. **Early Diagnosis of Pulmonary Tuberculosis.**—Landolfi has been studying in the clinic, with subsequent postmortem examinations, the points where resonance is impaired in case of an incipient tuberculous process at the apex. He has located six points where percussion is liable to reveal impairment of resonance, and this finding at even one of these points is extremely suspicious. Point 1 is 1 cm. below the clavicle, at the junction of the inner third and outer two-thirds. Point 2 is the same distance above the clavicle on the same vertical line. Point 3 is at the intersection of the acromio-mastoid line with a line uniting point 1 with point 4. The latter point is in the center of a line drawn from the acromion to the spinous process of the second dorsal vertebra, and is the only point on the back. Point 5 is 1 cm. below the center of the clavicle, and point 6 is just inside the acromion and above the acromio-cervical line. They are numbered in the order of their importance. Percussion should be with the middle finger on the nail of the index finger applied horizontally, the patient seated or standing, the arms pendant. The percussion should be light and then heavy, and should be applied at symmetrical points on each side. The less the difference between the results of light and strong percussion at point 6, the greater the probability of a lesion of the apex. He diagnosed one case from this finding alone, and the autopsy confirmed the diagnosis. It is necessary to be skilled in the physiologic findings at these points, but this comparative percussion, combined with light topographic percussion of the apex, will early reveal not only a lesion at the apex, but also the pathologic anatomic condition of the parenchyma of the lung.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 918.

49 (LXXVIII, No. 1.) *Zur operativen Behandlung der puerperalen Peritonitis und Pyämie. G. Leopold.
50 Klinische Würdigung einiger experimenteller Ergebnisse hezlehentlich der Physiologie der Uterus-Contraction. E. M. Kurdinowski.
51 Zur Hebetomie auf Grund von 21 Fälle (extramedian symphyseotomy). Kannegiesser (Dresden).
52 Einfluss der Ovarien auf den Stoffwechsel. Menstruation und Stoffwechsel (metabolism). L. Zuntz.

53 *Zur Lehre von den Dermoid-Cysten des Eierstocks (of ovary). J. Schottlaender.
54 *Betrachtungen über Geburten mit übelriechendem Fruchtwasser (births with fetid amniotic fluid). Lehmann (Breslau).
55 *Die Malignität der Blasen-Mole (hydatidiform mole). Schickele.

49. **Operative Treatment of Puerperal Peritonitis and Pyemia.**—Leopold reviews his experience with operative treatment of puerperal peritonitis. He regards it as a promising field on condition that the incisions and drainage tubes are protected so carefully that no possibility of secondary infection is permitted. In 5 cases of acute, generalized peritonitis 3 of the patients recovered. They were all operated on by the second or third day of the peritonitis, while 2 others, not operated on until the fifth day, succumbed, the intervention having come too late. The abdominal cavity was filled with pus or a dirty reddish fluid, the intestines were congested and covered with deposits of fibrin, the lymph spaces in the right wall of the uterus were distended with pus, and streptococci were cultivated from small abscesses in the left corner of the uterus. These findings emphasize the importance of prompt interference, not allowing the proper moment for intervention to pass. This, he thinks, is when high fever, increasing and smaller pulse and increasing distension and tenderness of the abdomen become accompanied by hiccough and vomiting, while the complexion and expression indicate severe infection, and an area of dullness develops and spreads in the hypochondrium on both sides. A laparotomy under such conditions in commencing peritonitis can do only good. It is necessary under all circumstances to open and drain the Douglas pouch into the vagina, and it is also wise to drain the region of the hypochondrium. In Leopold's experience daily rinsing out of the abdominal cavity afterward seemed to be unmistakably beneficial. The 5 patients with circumscribed peritonitis all recovered after an operation performed between the nineteenth and fiftieth days. The search for the focus causing the protracted sickness may prove long and difficult. If the inflamed and possibly suppurating adnexa on one side are included in the circumscribed intraperitoneal pus focus, they must be released from adhesions and removed after ligature. The most complicated conditions can be straightened out by calm, cautious technic. Whether or not to remove the adnexa depends on the individual conditions. In 3 cases he merely opened and drained the focus, an abscess in the uterus. These cases show that several operations may be necessary before the primary focus is discovered. It is generally found in or near the uterus, and the experiences related indicate that even earlier intervention might have been still better. In one of the cases reported and tabulated, abdominal section was undertaken on the twenty-fourth day of the severe illness. After exposing the adherent organs the pus focus was finally found in the uterus, and the circumscribed peritonitis rapidly healed after this focus had been drained.

53. **Dermoid Cysts of the Ovary.**—Schottlaender's article is a histologic study of 4 cases of dermoid cysts in the ovaries. He states that the assumption that dermoid cysts are innocent growths requires some modification. The similarity to endothelioma is too striking.

54. **Childbirths with Fetid Amniotic Fluid.**—Lehmann has encountered 59 cases of this kind in 9,500 childbirths at Breslau. There was temperature in all but 3 cases. Five of the mothers died, and 32 of the children. The walls of the uterus are protected by the membrane against infection from the fetid fluid, and it does no harm to the external parts so long as they are intact. Rinsing with an antiseptic before, during or after the birth did not seem to influence the further course of the cases. Expectant treatment at first, with cautious rinsing out of the vagina after delivery, not allowing the fluid to enter the uterus, he states, seems to be the most promising treatment.

55. **Malignancy of Hydatidiform Mole.**—Schickele discusses whether the uterus should be removed as a matter of course in case of a hydatidiform mole. He thinks that the danger of malignancy should always be borne in mind, and that after removal of the mole the uterus should be curetted and the scrapings examined. If a chorioepithelioma exists outside of the uterus it should be removed and the uterus should be curetted and palpated. If the findings are negative the examination should be repeated in four weeks, or in two if there is the slightest suspicion of positive findings. The presence of a chorioepithelioma outside of the uterus should not influence the decision as to the removal of the uterus unless the findings suggest the probability of malignancy. He replies to the possible objection that the hysterectomy might come too late by saying that this could occur only in cases with very early metastasis, and in such cases the physician is powerless whether there is a neoplasm in the uterus or not.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed, page 1148.

56 (LXXXI, No. 1.) *Behandlung der akuten Peritonitis. K. G. Lennander (Upsala).
57 *Results of Slitting the Kidney.—Folgen der Nierenspaltung. H. Wildbolz (Berne).
58 *Die perorale Intubation mit und ohne Druck. III. Apparat zur Lieferung des Druckes für die Ueberdruck-Narkose (over-pressure). F. Kuhn.
59 Deformities of Face.—Gesichtsmissbildungen. L. Kirchmayr.
60 *Displacement of Large Intestine by Distension.—Ueber Lageveränderungen des Dickdarmes bei Aufblähung. Lessing.
61 Ein echtes Cholesteatom der Schädelknochen (of cranial bones). F. Unterberger.

56. **Treatment of Acute Peritonitis.**—Lennander insists on the importance of an early and exact diagnosis and on an early operation, if possible before the intestines become paralyzed. The cause of the acute peritonitis must be sought for and removed in every case. When the intestines are paralyzed three measures should be considered: 1. Enterotomy (single or multiple), emptying the intestine during the operation. 2. An oblique fistula into the intestine. 3. In desperate cases, resection of from 0.5 to 1 or even 2 yards of the paralyzed bowel. In case of peritonitis from appendicitis with paresis in the cecum and adjacent part of the ileum, an oblique fistula must be made in the cecum during the operation, or the wall of the cecum can be sutured to the incision in the abdominal wall so that it will be ready to have an oblique fistula made without the necessity for general anesthesia in case symptoms of paralysis of the intestines develop after the operation. In case of recent suppurative peritonitis in the center of the abdominal cavity (that is, around the mesentery of the small intestine), the most harmless and effectual measure for removing the pus is to rinse with 0.9 per cent. salt solution at a temperature of 40 C. (104 F.), under very slight pressure and with free outlet. He declares that no one is justified in rinsing the sound peritoneal surfaces at the same time. Only when it has been established that the rinsing of sound peritoneal surfaces with a 0.9 per cent. salt solution induces leucocytosis which will protect against the danger of infection, will we be justified in rinsing out the intact parts of the peritoneum; as for example, in case of suppurative peritonitis in the small pelvis, rinsing out the center of the abdominal cavity, or in case of suppurative peritonitis below the transverse colon, allowing the rinsing fluid to find its way above this part of the bowel. Infected and acutely inflamed peritoneal surfaces must be drained. He thinks the best technic for this is to wall off the infected area from the sound regions of the peritoneal cavity. He uses tamponade drainage, with very coarse cotton yarn (wicking) with drain tubes between the strands of yarn and rubber tissue. He tampons only in the peripheral regions of the abdomen, around the stump of the appendix, of the gall bladder, etc., when it is a question of separating a certain part of the serosa from the rest. The best rubber stuff for draining he has found to be long rubber operating gloves that have outlived their usefulness as gloves. Instead of large tubes he prefers a bundle of from four to eight small tubes, not more than from 1 to 1.5 mm. in diameter. He sometimes inserts a pair of these tubes through a glove. Adhesions do not form around the rubber as around gauze. He begins to remove the tubes about the twelfth hour, and the rubber drainage is usually all removed from the thirty-sixth to the seventy-second hour. In the after treatment everything must be done to favor the resumption of normal functions by the stomach and intestines at the earliest possible moment. Lavage of rectum, colon and stomach and enterostomy are good and tried measures. An efficient subcutaneous purgative is greatly needed. Too little is known of the action of strychnin, physos-

tigmin or atropin on the intestines for any definite rules for their use. Lennander has used strychnin for a heart tonic, and imagines that benefit has been derived from physostigmin in doses of from 0.5 to 1 mg. once or twice a day, from fifteen to thirty minutes before lavage of the intestines in case of intestinal paresis, or when the symptoms of intestinal paralysis were commencing to subside. Mechanical measures to empty the intestines and stomach are the most important in combating intestinal paralysis. Typhlostomy is an excellent measure in case of appendicitis peritonitis with commencing intestinal paralysis. It is important, he adds, to supply the water lost in the course of the affection. From 1,200 to 2,000 c.c. of water must be supplied to the adult organism in the course of twenty-four hours. If it can be given through the rectum or through an oblique fistula into the cecum, this is better than by the subcutaneous or intravenous routes. Whether or not larger amounts of water are desirable is a matter for discussion. More can be given if the general appearance and the heart action are improved and the diuresis and peritoneal secretion are increased in direct proportion to the supply of water. If convinced that paresis in the vascular domain of the splanchnic nerve is the most important factor in the trouble, artificial serum must be infused, from 1 to 2.5 quarts, once or twice in the twenty-four hours. Nothing in the way of food except grape sugar, he states, can be given to advantage through the rectum, but large amounts of peptonized nourishment can be administered through a fistula into the cecum. A patient can be fed for a few days by subcutaneous injection of 100 or 200 gm. olive oil, 160 gm. grape sugar and 40 gm. alcohol (2 liters salt solution containing 8 per cent. grape sugar and 2 per cent. alcohol). In all cases of suppurative peritonitis the after treatment should always reckon with adhesions and kinking of the intestine at sharp angles. It is important not to allow food by the mouth too soon. If food hard to digest or too large quantities of fluids are allowed, the intestines are not able to force them along past all these obstacles. Easily digested food, and drinks in small amounts at a time, the intestine is able to handle, and the adhesions, he declares, will become gradually detached in time. After every operation for acute peritonitis the patient must be impressed with the necessity for regular evacuation of the bowels and avoidance of indigestible articles of food. This article by Lennander was read to introduce the subject of acute peritonitis at the recent International Surgical Congress.

57. **Results of Slitting the Kidney.**—Wildbolz reports experiments with 9 rabbits and 5 large dogs. In every instance when one of the large arteries in the kidney was severed, an infarct formed at the spot.

58. **Intubation Through Mouth for Anesthesia and for Over-Pressure in Lungs.**—Kuhn gives an illustrated description of his apparatus for "peroral" intubation, that is, intubation with the tube extending out through the mouth. He has adapted it to induce over-pressure in the lungs to allow operations in the thorax.

60. **Displacement of Large Intestine in Case of Distension.**—Lessing remarks that the topography of the intestines has been based on the findings with the normal or relaxed intestines of the cadaver. He has been studying on 50 cadavers the positions assumed by the large intestine when inflated.

Muenchener medizinische Wochenschrift.

62 (LIII, No. 8.) *Importance of Anesthesia in Treatment of Inflammation.—Die Bedeutung der Anästhesie in der Entzündungs-Therapie. G. Spiess

63 *Zur Technik der Kniescheibennaht (suture of patella). A. Schäfer.

64 Ueber die Roentgen-Untersuchungen der Trachea bei Tumoren und Exsudat im Thorax. C. Pfeiffer.

65 Zur Radikal-Operation des Schenkelbruchs (femoral hernia). F. Berndt.

66 Traumatische Pupillenstarre. Beitrag zur Lehre von den Beziehungen des obersten Halsmarkes zur reflektorischen Pupillenstarre. (Immovable pupils a spinal phenomenon. One case). G. Dreyfus.

67 Eine neue Methode der Romanowsky-Färbung (stain). R. May.

68 Ueber neue Haarfärbemittel (hair dyes). E. Tomaszewski and E. Erdmann.

69 Case of Persisting Abducent Paralysis After Stovain Lumbar Anesthesia.—Fall von Abducens-Lähmung nach Lumbal Anästhesierung. C. Adam (Berlin).

70 Progressive Paralyse. G. Knauer.

71 *Orthopädie des Bauches (of abdomen). G. Bracco.

72 Photoaktivität der Gewebe als Faktor der biologischen Strahlenwirkung (action of rays). Neupauer. Id. Werner.

62. **Importance of Anesthesia in Treatment of Inflammation.**—Spiess is convinced that inflammations are favorably influenced when the pain is reduced by artificially induced anesthesia. He believes that it is possible to prevent inflammation by preventing the development of painfulness in a wound. By the use of local anesthetics, he states, it is possible to abolish the pain, and wounds heal without inflammation, or if there is already inflammation, it rapidly subsides. By abolishing the reflexes emanating from the focus of inflammation through the centripetal sensory nerves it is possible to prevent the development of inflammation or to cure it if already existent. The anesthetization should affect only the sensory nerves, and should not disturb the normal play of the vasomotor nerves. As irritation of sensory nerves induces hyperemia by reflex action, so suppression of such irritation (by local anesthesia) prevents the development of the hyperemia or abolishes it if already present. He gives a number of experiences and arguments to sustain this view, suggesting that the beneficial action of passive congestion may be due to its anesthetizing properties. All writers on the subject mention the prompt relief from pain as its most constant feature. In treatment of inflammation the focus must be kept thoroughly and permanently under the influence of the local anesthetic which must come into intimate contact with the focus throughout its extent. Repeated insufflation of a local anesthetic, every five minutes, will abort incipient sore throat or coryza, and by injection will abort furuncles and styes. The criterion is the subjective relief from all disagreeable sensation from the focus. When this is accomplished and kept up the inflammation rapidly subsides.

63. **Suture of the Patella.**—Witzel has been using for years a method of suturing the patella without the necessity for opening up the joint, and it has proved extremely satisfactory in his hands. He uses stout silver wire and two slightly curved trocars. He passes one trocar through the tendon of the quadriceps, just above the patella, and the second trocar through the ligamentum patellæ, just below the patella. The concave curve of the trocars is turned toward the patella, and the needles are removed. A piece of wire is then passed through each trocar, the ends being tied together with considerable traction in the center over a tampon, the ends of the wire forming an X over the fractured patella, which is thus held immovably in place. A plaster cast is then applied and massage of the muscles commenced the second week; the cast is removed once daily for the purpose. Passive and then active movements are commenced at the beginning of the third week; the wires and trocars are not removed until the fourth or fifth week has passed. The same technic has been successfully applied in treatment of fracture of the olecranon. Schäfer states in conclusion that the simplicity and the excellence of the results have fully established the superiority of the method.

71. **Orthopedics of the Abdomen.**—Bracco gives illustrations of a model supporting bandage for the abdomen. A bandage wound around the abdomen, passing from the center of the abdomen around the thigh, forms a figure 8 on each side, which bring the pressure and support on suitable regions. The bandage is made of ten or more narrow bands, each wound separately, with narrow spaces between them and cross bands to hold them in place. The whole opens in front and can be easily removed and put on. The general aspect is like a pair of bathing trunks. He claims that its use cured cases of obstinate constipation, of albuminuria of many years' standing, and other effects of ptosis, and that in cases of threatening eventration it has enabled the tissues to regain firmness and strength. He has found it very useful also during and after pregnancy; the energy otherwise devoted to holding up the weight of the pregnant uterus could be diverted to other purposes.

Virchow's Archiv, Berlin.

Last indexed, page 1324.

73 (CLXXXIII, No. 3.) *Beitrag zur Mikro-Photographie mit ultraviolettem Lichte nach Köhler. H. v. Schrötter (Vienna).

74 *Experimentelle Untersuchungen über den Verbrennungstod (fatal burns). C. Eijkman and C. E. A. van Hoogenhuyze (Utrecht).
75 Ueber Allgemein-Infektion durch den Bacillus pyocyaneus (general infection). E. Fraenkel (Hamburg).
76 Ueber Zerreissungen und traumatische Aneurysmen der Aorta. O. Busse.
77 Zur Frage des elastischen Gewebes im normalen und myopischen Auge (elastic tissue in eye). S. Fuss (Halle).
78 Zur Histologie des Callus. T. Gümbel.
79 Eine Mischgeschwulst (Osteoidsarkom) der weiblichen Milchdrüse (of mamma). C. Hueter and Karrenstein.

73. **Microphotography with Ultra-Violet Light.**—The method of microphotography with ultra-violet light proposed by A. Köhler of Jena is regarded by von Schrötter as a great advance in progress, on a par with the ultra-microscope of Siedentopf and Zsigmondy. It opens a new field for investigation. The process differs from ordinary microscopic technic only in the fact that it is not possible to observe directly with the eye. The eye is substituted by the sensitized plate on which the invisible rays act. He uses magnesium or cadmium one-colored light with a wave length of 280 or 275, a numerical aperture of 1.25, and exposure of about a second. An artificial eye or finder, on which the invisible rays cause fluorescence, enables the image to be centered. Nineteen views are given by von Schrötter of bacteria and tissues of various kinds photographed with this technic, which brings out the details as clearly as if they had been stained by the best technic. Until the technic is further perfected the results of ultra-violet photography are not superior to those of staining so far as bacteria and trypanosomes are concerned, but examination of blood from malarial and leukemic patients revealed details hitherto unsuspected, which establish the great value of this new mode of investigation. With it, von Schrötter says, we can inspect the finest structural elements down to 0.25 micron. It also enables us to study the permeability of various tissues and their elements for the ultra-violet light, and, in combination with the findings of the spectrograph (Freund, Hertel and others), to learn new optical characteristics in regard to them. The behavior of structures in regard to their permeability for the short wave rays after having been stained or acted on by chemical agents, is also a promising field for research. Each simple tissue element should be studied separately before we can appreciate the findings in pathologic tissues. The action of autolytic processes and the influence of ferments can also be traced with the ultra-violet photography. Ordinary staining methods fail to help us in this. New details of histopathology will be revealed by the new technic, and possibly the causal agents of certain infectious diseases, as of scarlet fever, may be run to earth with its aid. Another advantage of this new technic is its use as a control for our previous technical procedures. It is a fortunate coincidence that ultra-violet photography allows the use of physiologic salt solution as a vehicle for the objects, and in this vehicle living elements can be photographed and vital processes can thus be studied. The dynamogenic action of electricity and the resulting changes in tissues can perhaps be studied with the ultra-violet rays. Especially important in this line would be the examination of the nervous systems of animals after these had been killed by electricity. Another interesting line of research would be the photographic reproduction of the processes involved in hemolysis and agglutination, and in the action of normal and antitoxic sera on bacteria and on the cell protoplasm from a morphologic point of view. Köhler's original article was published in the *Zeitschrift f. wissenschaftliche Mikroskopie und mikrophotographische Technik*, XXI, pp. 129 and 273, 1901, but the apparatus is fully described in the Zeiss catalogues. Grawitz and Grüneberg have just published a work on the blood studied by ultra-violet light, which contains also some views of leukemic blood.

74. **Death from Extensive Burns.**—The conclusions of the experimental research reported are to the effect that death from extensive burns may be due to paralysis of the heart, the result of the overheating of the blood. Likewise to the formation of substances in the skin under the influence of the heat, which, when taken into the blood, have a fatal toxic action. Burning of muscle tissue does not cause the formation of such toxic substances as in the skin. A deep burn of limited extent is borne much better than a shallower burn over a larger area.

Zeitschrift für Geb. und Gynäkologie, Stuttgart.

Last indexed, page 693.

80 (LVII, No. 1.) Zur Lehre vom Scheintod der Neonatorum (apparent death). B. S. Schultze.
81 *Die malignen und benignen Degenerationen der Uterus-Myome. G. Winter.
82 Fruchtwässerschwund in der 2ten Graviditätshälfte, eine typische Form der Oligohydramnie. F. Ahlfeld.
83 Wann und wie soll die 3te Geburts-Periode beendet werden (how to end third stage of labor). F. Ahlfeld.
84 Kenntnis des menschlichen Uterus bei den Hippokratikern. Kritisch-historische Bemerkungen. H. Natvig.
85 Ueber die Publotomie. Henkel.

81. **Myoma and Cancer of the Uterus.**—Winter discusses the question of malignant and innocent degeneration of uterine myomas. The testimony to date indicates that a simple myoma can be regarded as an essentially benign growth. He found a carcinoma in the corpus in 12 cases. It had been previously diagnosed in only 4. If symptoms occur in the course of a myoma, such as are seldom observed with myoma but are frequent with cancer (cohabitation bleedings, hemorrhage in the menopause, a blood-stained discharge, pains independent of menstruation), a careful search must be made for evidences of carcinoma in corpus or cervix. He has been able to find only 16 cases on record in which a carcinoma developed in the stump left from supravaginal amputation on account of myoma. Study of these cases shows that the malignant disease had probably been installed before the operation in a number of them, and that in others the cancer developing later had no connection with the preceding operation. There is no reason, therefore, for abandoning supravaginal amputation for total extirpation from fear of development of cancer in the stump. The myoma evidently is liable in some cases to create a predisposition to carcinoma, especially in the corpus. Its relations with sarcoma are on a different basis, as sarcomatous degeneration is not so very rare. He encountered it in 17 out of 753 cases, that is, in 3.6 per cent., and believes that it occurs in about 4 per cent. of all cases of myoma. Submucous myomas are the most liable to sarcomatous degeneration, in his experience nearly 9 per cent. (11 out of 126 submucous myomas; 10 in 237 insterstitial, and 6 in 299 subserous and subperitoneal myomas). In his 27 cases the diagnosis of sarcomatous degeneration had been made in only one instance. The entire tumor should be examined under the microscope, especially the stem of every polyp. Operative removal of the myoma on account of fear of sarcomatous degeneration is scarcely justified, he thinks, unless there are grounds for suspicion. The diagnosis is generally difficult, and is rendered positive only by anatomic investigation. This should never be neglected with submucous myoma, so that it may be followed with a prompt radical operation if necessary. Total necrosis of interstitial myoma occurred in 17 out of his total of 753 cases of myoma, presenting a syndrome including irregular, frequently severe, hemorrhages, with labor-like pains and phenomena of autointoxication. There were no characteristic objective findings until the necrosis was in its last stage and had broken through into the interior of the uterus. Total necrosis must be regarded as a very serious and rather dangerous complication of myoma. Prolonged irregular bleeding from the uterus, especially when accompanied by pains suggesting labor, should always arouse suspicion. The finding of acetone may be a valuable differentiating sign, but it was lacking in 2 of his cases. Most important of all is a history of a just preceding childbirth or abortion. The radical operation was performed in his 17 cases by supravaginal amputation in all but one, and recovery was uneventful. Poorly nourished myomas, the subserous, the intraligamentary and those with a thin pedicle, are most liable to become affected with cystic degeneration, and the age of the patient and consequently of the growth enhances this tendency. Congestion in the venous system is liable to entail edema of a myoma. Primary softening of an interstitial myoma is accompanied by considerable bleeding, as a rule, but otherwise causes no local or general symptoms. Treatment of myoma, on the whole must be guided by the symptoms.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, MAY 12, 1906. No. 19.

Original Articles

PHAGOCYTOSIS AND OPSONINS *

LUDVIG HEKTOEN, M.D.

CHICAGO.

INTRODUCTION.

Phagocytosis in its relations to healing and immunity has been discussed most actively from various points of view, and it is to some of the results of the most recent investigations in this field that I not without hesitation ask your attention.

The demonstration by Wright and Douglas[1] of the presence in blood and other fluids of certain substances called by them opsonins,[2] which render various bacteria susceptible to the phagocytic action of leucocytes, has given a fresh interest to the study of phagocytosis. At present we may accept as an established fact that phagocytosis of many bacterial and other cells by the leucocytes, in the first instance, is dependent on special substances, normal and immune, which become attached to the cells in question and in some manner so change them that they are taken up readily by polynuclear leucocytes *in vitro*. Leucocytes freed from serum do not take up to any great extent bacteria or red corpuscles suspended in salt solution. The quantitative effect of serum on phagocytosis is illustrated by Table 1.

TABLE 1.—QUANTITATIVE EFFECT OF SERUM ON PHAGOCYTOSIS.[3]

Quantity of serum.	Number of cocci taken up.
0.2 c.c.	23.4
0.1 c.c.	19.2
0.05 c.c.	14.0
0.025 c.c.	7.5
0.0125 c.c.	2.2
0.006 c.c.	1.5
0.003 c.c.	0.7
0.000 c.c.	0.0

This table shows the influence of serum on phagocytosis. In this experiment each tube contained 0.3 c.c. of suspension of washed guinea-pig leucocytes and falling quantities of guinea-pig serum, enough 0.85 per cent. NaCl solution being added to make 0.6 c.c. in each case, and 0.5 c.c. of a streptococcal suspension.

By means of experiments giving comparable results, it has been found that the variable factor in a series of bloods is the serum and not the leucocytes.[4]

Bacterial and other cells treated with opsonic serum and then freed from serum by repeated washing in salt solution are taken up by washed leucocytes. Indeed, all the opsonin may be removed from the serum by adding a sufficient number of suitable corpuscles or bacteria, as the case may be, which now become susceptible to phagocytosis. Bacteria and red corpuscles so treated may be said to be sensitized for phagocytosis or "opsonized," but such cells are not necessarily obviously altered either in form or function, and many bacteria, e. g., staphylococci, streptococci, pneumococci, anthrax bacilli, multiply freely in sera that contain opsonin. Leucocytes treated with opsonic serum and then washed, on the contrary, are not able to take up unsensitized bacteria or corpuscles. We see at once that a means has been given us for a better analysis than heretofore possible of the mechanism of phagocytosis, at least up to a certain point.

The technic required to study phagocytosis *in vitro* is quite simple.

Leishmann's method,[5] which is used in a modified form by the English workers, consists in placing blood or other fluid containing leucocytes and suitable homogenous bacterial suspensions at 37° C. (from 15 to 60 minutes) when smears are made and stained with Leishmann's stain. Counts are now made of the bacteria in a certain number of leucocytes and in this way is obtained the average number of bacteria taken up. In comparison of different bacterial emulsions these must contain an equal number of bacteria and Wright[6] has devised a method of counting bacteria and diluting as necessary for that purpose.

In order to free the leucocytes from serum it is necessary to wash small quantities of defibrinated or citrated blood or exudate at least three or four times in many times their volume of salt solution by means of centrifugalization. In our work at the Memorial Institute for Infectious Diseases it has been the experience that serum-free streptococci, staphylococci, pneumococci, typhoid bacilli, diphtheria bacilli and pseudo-diphtheria bacilli, meningococci and anthrax bacilli are not taken up to any appreciable extent by leucocytes so washed.

In case of anthrax bacilli, on account of the long threads, it sometimes may be difficult to determine whether a given leucocyte is or is not engaged in phagocytosis, but the difference in the relation of the leucocytes to the bacilli in smears from mixtures with and without serum is so striking that I am convinced of the dominant influence of the serum on phagocytosis of this organism also. Löhlein's[7] conclusions to the contrary notwithstanding.

While there can be no question of the essential rôle of substances in the serum in phagocytosis of the bacteria mentioned, as well as of others, there undoubtedly will be found bacteria that are taken up with almost equal readiness by washed leucocytes without and with serum. Thus Miss Tunnicliff finds that certain fusiform bacilli and spirilla are taken up with great readiness by carefully washed human leucocytes, and Dr. D. J. Davis concludes that this is probably also true of the influenza-like bacilli that occur in whooping cough and other conditions, because six typical strains of these bacilli, isolated from various sources, and grown on blood media free from opsonin, were taken up not only by leucocytes in serum, but also, though to a less degree, by washed leucocytes in salt solution. This is true for both human and dog leucocytes.

It is probable, too, that bacteria will be found, phago-

* The Middleton-Goldsmith lecture of the New York Pathological Society, given Feb. 23, 1906.

1. Proc. Royal Soc., 1903, vol. lxxii, p. 357; 1904, vol. lxxiii, p. 128.

2. From the Latin obsono or opsono, "I cater for, I prepare food for." The functions and nature of opsonins are discussed more in detail further on.

3. Hektoen and Ruediger: Jour. Infect. Dis., 1905, vol. ii, p. 128.

4. Wright and Douglas: loc. cit.; Bullock and Atkin: Proc. Royal Soc., 1905, vol. lxxiv, p. 380.

5. British Med. Jour., Jan. 11, 1902, vol. i, p. 73.

6. Lancet, 1902, vol. ii, p. 11.

7. Ann. de l'Inst. Pasteur, 1905, vol xix, p. 647.

cytosis of which by certain leucocytes, but not by others, requires the aid of serum.

I. THE OPSONINS IN THE SERA OF NORMAL ANIMALS.

The sera of the higher animals normally contain opsonin for many different bacteria. Thus normal human serum contains opsonin for staphylococci, streptococci, pneumococci (of feeble or medium virulence), meningococci, gonococci, influenza bacilli, diphtheria and pseudodiphtheria bacilli, anthrax bacilli, tubercle bacilli, typhoid and colon bacilli, the comma bacillus, the pest bacillus, and probably many other pathogenic and non-pathogenic bacteria. Whether this wide range of opsonic action is dependent wholly on a common opsonin or on several more or less specific opsonins has not been determined. Bulloch and Western[8] found that human serum contains different opsonins for tubercle bacillus and staphylococcus.

In the case of many bacteria strains of reduced virulence are highly sensitive to opsonic influences and the opsonin in the blood of one species may sensitize such bacteria for phagocytosis by washed leucocytes of different species (Hektoen and Ruediger, Bulloch and Atkin). In the case of bacterial strains of high virulence for a given animal, it seems, however, that neither homologous nor heterologous normal serum has the amount or kind of opsonin necessary to subject the organism in question to phagocytosis by the leucocytes of the susceptible animal. The relation of virulence to opsonification is a most interesting one that requires separate consideration.

The serum of normal animals may contain opsonins for other cells than bacteria. I have found that blastomycetes from human lesions become surrounded by masses of leucocytes in the presence of normal human and dog serum, whereas in the absence of serum the leucocytes do not seem to be attracted to the organisms. Preliminary observations indicate that phagocytosis of trypanosomes also is dependent on opsonification.

Barratt[9] noted the presence of opsonins in small amounts for erythrocytes in the serum of normal animals. In my own experiments I have observed that normal rabbit serum may contain substances that subject human and guinea-pig corpuscles to some phagocytosis by dog leucocytes; traces of analogous substances have been noted also in one or two other sera. Clearly the amount of erythrocytic opsonin in normal serum is quite minute and limited in its occurrence as compared with that of bacterio-opsonin.

II. IMMUNE OPSONINS.

Numerous illustrations may be cited of the faculty of the animal organism to react to the introduction of foreign cellular material by the production of special opsonins. It seems that the mechanism concerned is quite analogous to that involved in the formation of other and at present more familiar antibodies. Several years ago (1895) Denys and his co-workers observed that rabbit leucocytes in normal rabbit serum ingested the avirulent strain of a streptococcus, but not the strain made virulent by repeated passages through rabbits. In the serum of rabbits and horses immunized against this streptococcus, the leucocytes, on the contrary, had marked phagocytic power over the virulent cocci.[10] Others also noted the greatly increased phagocytosis of streptococci in the presence of antistreptococcus serum both *in vivo* and *in vitro,* notably Bordet, Aronson and v. Lingelsheim. Strictly analogous phenomena were described by Mennes,[11] in 1897, with respect to pneumococci, and later by others in regard to other bacteria.

Metchnikoff and his adherents ascribed the power of immune serum to cause phagocytosis of virulent bacteria to a special and direct stimulation of the leucocytes. Issaef,[13] as the result of an investigation inspired by Metchnikoff, concluded that antipneumococcic serum owed its protective action to so stimulating leucocytes that they destroyed pneumococci by phagocytosis. Later the same view was advanced by Bordet, Denys, Mesnil, Besredka and others in regard to the action of antistreptococcus serum, and the special substances concerned, were sometimes designated as stimulines.

By others the function of immune serum in the promotion of phagocytosis was conceived to be exercised by a special fixator (*substance sensibilisatrice*) corresponding to Ehrlich's amboceptor or immune body, which by union either with the leucocytes or the microbes changed, so it was thought, the negative chemotaxis of virulent microbes with respect to leucocytes and other phagocytic cells. Savtchenko and Melkich[14] so explained the phagocytosis of the spirilla of recurrent fever in the serum of immune persons and Savtchenko[15] the phagocytosis of red corpuscles under the influence of immune serum.

Wright and Douglas[16] in 1904 noted a marked increase in the opsonic power of patients suffering with chronic staphylococcus infections of the skin (acne, sycosis, furunculosis), in response to the injection of 0.25 to 1 cc. of heated broth cultures of staphylococci. These investigators[17] also found the opsonic power of human serum with respect to tubercle bacilli greatly increased in consequence of minute doses of tuberculin, and Wright has developed on this basis a method of treatment of localized tuberculosis and other infections by vaccines prepared with the corresponding bacteria to which further consideration is given in the latter part of this article. Wright and Douglas were able to show that the newly formed immune opsonins, like normal opsonins, act on the bacteria and not directly on the leucocytes.

Apparently quite independently of Wright and Douglas' work Neufeld and Rimpau[18] found that leucocytes digested in antistreptococcus serum and then suspended in normal serum do not take up virulent streptococci, but that virulent streptococci, treated with antistreptococcus serum, then washed and mixed with leucocytes are taken up freely. Analogous observations were reported with reference to pneumococci. These authors conclude that active antistreptococcus and antipneumococcus sera owe their immunizing effect primarily to their power so to act on the respective virulent organisms as to subject them to phagocytosis, and that these and other similar sera consequently do not fall in the same group as the antitoxic nor as the bacteriolytic but constitute a distinct class.

A little later Neufeld and Töpfer[19] demonstrated that

8. Bulloch: The Lancet, 1905, vol. II, p. 1003.
9. Proc. Royal Soc., 1905, 1905, vol. lxxiv, p. 524.
10. Summary of various researches on this and allied subjects is given by Denys in Centbl. f. Bakt., 1898, vol. xxiv, p. 685.
11. Zeitft. f. Hyg. u. Infektionskr., 1897, vol. xxv, p. 413.
13. Ann. de l'Inst. Pasteur, 1895, vol. vii, p. 260.
14. Ann. de l'Inst. Pasteur, 1901, vol. xv, 497.
15. Ibid., 1902, vol. xvi, p. 106. Levaditi (ibid., p. 233) and Gruber (Wien. klin. Woch., 1903, vol. xvi, p. 1097) reached similar conclusions.
16. Proc. Royal Soc., 1904, vol. lxxiv, p. 169.
17. Lancet, 1904, vol. II, p. 1138.
18. Deutsch. med. Wochft., 1904, vol. xxx, p. 1358; also Zeitft. f. Hyg. u. Infekt., 1905, vol. II, p. 283.
19. Centbl. f. Bakt., part I, 1905, Orig., xxxviii, p. 456.

the blood of rabbits immunized with goat blood contains a substance that by acting on goat corpuscles renders them subject to phagocytosis by guinea-pig leucocytes.

Hence immune opsonins may be regarded as acting primarily on the bodies against which the animals have been immunized, as would be expected in accord with the fundamental idea of Ehrlich's theory, and not directly on the leucocytes.

It has been proposed by Neufeld and Rimpau to designate the substances in immune serum that render bacteria and corpuscles susceptible to phagocytosis as bacteriotropic and hemotropic substances. The term "tropic," however, has been applied to other antibodies as well. Wright and Douglas suggested the name opsonin in 1903, and in view of the priority of their suggestion as well as on account of the appropriateness and adaptability of the term, it, in my opinion, should be applied, as is rapidly coming to be the case, to opsonic substances that arise in consequence of immunization as well as to those present in normal animals. In accordance with the current usage in the case of agglutinins and other terms employed in immunology we may speak of opsonins for bacteria and for red corpuscles as bacteriopsonins and hemopsonins, respectively, normal and immune, as the case may be.

The following experiment is given by way of further illustration of the production of opsonins in response to injections of bacterial substances: A healthy man received under the skin of the arm two 24-hour blood-agar cultures of a virulent streptococcus (381 P.), suspended in salt solution and heated to 60 C. for 30 minutes. This was followed within six hours by a leucocytosis of 12,000, persisting for 48 hours, during which there was a slight fever, a little headache and loss of appetite. An erysipelatous flush spread over the skin about the injection and faded away gradually except over a small indurated area that eventually softened into a small abscess with sterile contents. Now this injection was followed by a fall, succeeded by a sharp rise in the opsonic power of the serum with respect to the streptococcus injected, as shown by the subjacent curve:

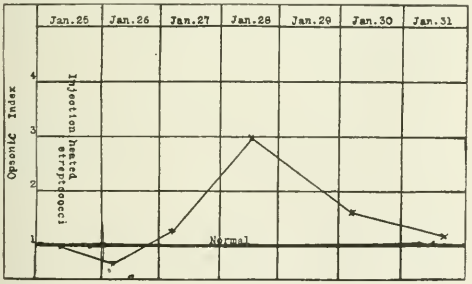


Chart showing increase of streptococco-opsonic index in a healthy man in response to injection of heated streptococci.

The train of events outlined in this instance[20] corresponds to the changes in the antibacterial powers of the blood shown by Wright to supervene on the inoculation of bacterial vaccines in general.[21] At first there was a fall in the opsonin—Wright's "negative phase"—followed by a marked rise, the "positive phase."

The presence of specific opsonin in the serum of immune animals is shown in Table 2 which I have taken from Miss Hamilton and Miss Horton's work on the pseudodiphtheria bacilli.

In this case the presence of specific opsonin is in full

TABLE 2.—PHAGOCYTOSIS OF VARIOUS BACTERIA UNDER THE INFLUENCE OF THE SERUM OF NORMAL RABBITS AND OF RABBITS IMMUNIZED WITH SO-CALLED VIRULENT PSEUDODIPHTHERIA BACILLI.

Washed Corpuscles in NaCl sol., 0.25 c.c. Serum or NaCl sol. 0.25 c.c. Bacterial suspension 0.5 c.c.	Phagocytosis (Average in 40 Leucocytes).			
	NaCl Sol.	Homologous Serum.	Normal Rabbit Serum	Immune Rabbit Serum.
VIRULENT PSEUDODIPHTHERIA BACILLI:				
Guinea-pig leucocytes (blood)	0.1	1.5	1.5	
Goat leucocytes (blood)	0.1	1.9	1.5	5.5
Rabbit leucocytes (exudate)	1.8	. . . . .	6.0	
Dog leucocytes (blood)	1.0	3.5	13.5	7.8
Human leucocytes (blood)	2.8	11.4	4.3	22.0 20.7
AVIRULENT PSEUDODIPHTHERIA BACILLI.				
Human leucocytes (blood) + 20	0.1	. . . . .	5.0	4.4
Human leucocytes (blood) + 34	0.7	. . . . .	4.2	4.7
Human leucocytes (blood) + 27	0.	. . . . .	0.45	0.9
DIPHTHERIA BACILLI:				
Guinea-pig leucocytes (blood)	0.0	1.8	6.0	0.87
Goat leucocytes (blood)	0.0	4.4	2.3	3.0
Dog* leucocytes (blood)	9.9	4.0	40.0	40.0
Human leucocytes (blood)	1.4	7.8	4.0	2.7
Human* leucocytes (bl'd)	0.5	40.0	40.0	40.0

* Leucocytes so crowded with bacilli that no accurate count could be made.

harmony with the protective and curative powers of the immune serum which, however, is also specifically bactericidal.[22]

In accord with the results of experimental immunization we naturally expect increase in opsonin in consequence of certain spontaneous infections, especially of course as convalescence becomes established. The observations at hand indicate such to be the case although this matter has not been systematically investigated. I have referred to the prononnced phagocytosis of the spirilla of recurrent fever observed by Savtchenko and Melkich under the influence of the serum of convalescent patients. Dr. Ruediger[23] notes an increase in the streptococco-opsonic index of erysipelas serum, and in convalescent typhoids there is a well-marked increase in the opsonin for typhoid bacilli, the index in some cases reaching as high as 4. Careful measurements by Dr. Rosenow indicate, as his work now stands, that during the course of pneumonia up to and shortly after crisis there is probably no increase in the pneumococco-opsonic index. Systematic observations have not yet been made in convalescents from pneumonia, but last winter Dr. Ruediger and I noted a well-marked increase in certain cases with localized metapneumonic processes.

The lack of clinical evidence of marked active immunity after streptococcus and other infections of this class would seem to indicate that postinfectious opsonic increase is only of brief duration.

Reference has been made to the development of opsonins for red corpuscles on immunization with blood. The immune hemopsonins are of interest from various points of view especially because their study will help us to understand better the bacterio-opsonins.

Phagocytosis of red corpuscles *in vitro* may be studied in the following manner: The serum of an animal injected several

20. Dr. Ruediger has immunized rabbits with the streptococcus used in this experiment, and as a result of several tests the serum of the immune rabbits have given an average opsonic index of 2.4

21. Medico-chirurgical Transactions, 1905, vol. xxx; Lancet, 1905, vol. ii, p. 1598.

22. Park and Williams (Jour. Exp. Med., 1905, vol. vii, p. 403) noted a slight specific increase in phagocytic power *in vitro* in serum of sheep immunized against pneumococci. This increase, however, was not always in harmony with the protective power of the serum against pneumococcic infection of mice. Cler (Centbl. f. Bakt., part I, 1905, Orig., vol. xl, p. 241) has shown that Sclavo's antianthrax serum contains an opsonic substance for anthrax bacilli; he used washed guinea-pig corpuscles as phagocytes.

23. THE JOURNAL A. M. A., 1906, vol. xlvi, p. 108.

times with increasing quantities of alien blood is heated to 60° C. for 30 minutes in order to destroy the hemolytic complement present and prevent laking. A small quantity of this serum, e. g., .1 c.c., is mixed with, say, .2 c.c. of a 5 per cent. suspension of washed red corpuscles, and to this is added a quantity of washed leucocytes, obtainable from fresh aleuronat exudates, and the whole placed at 37° C. for 30 to 60 minutes or longer, when smears are made and stained. Smears from other mixtures, made in the same way, in which the equivalent amount of normal serum replaces the immune, are used for controls.

When the immune serum is active and the leucocytes well preserved many of them will be found packed with unchanged red corpuscles. Laking in the ordinary sense does not occur, but in a few hours the intraleucocytic corpuscles may swell up or coalesce to form large globules.

Barratt as well as Neufeld and Töpfer have shown that the opsonin is absorbed by the red corpuscles, which now remain susceptible of phagocytosis even after being washed. Leucocytes, on the other hand, are not stimulated to phagocytosis by direct treatment with the serum. I can corroborate this observation and also the fact that leucocytes of various species may be used as phagocytes so that one is not limited for this purpose to the leucocytes of the animal furnishing the serum.

The extent to which immune serum of this kind is specific in its hemopsonic powers has not been determined accurately. An immune serum may have a fairly wide range of activity in case dog leucocytes are used as phagocytes, and, on the other hand, may appear limited in a quite specific way when guinea-pig leucocytes are used as phagocytes. The opsonin just as the hemolytic amboceptor finds suitable receptors in other corpuscles than the particular kind used for immunization, but, so far as my experiments go, immune sera, as a general rule, have the most marked and the earliest opsonic effect on the corpuscles used for immunization; of course, there may be exceptions here.

In various infectious, toxic and anemic processes an extensive phagocytosis of red corpuscles and of other cells takes place in various parts of the body, especially in the spleen, the marrow, the lymph and hemolymph nodes. This process has been studied morphologically by Mallory[24] as it occurs in typhoid fever, and by Warthin[25] as it is seen in the hemolymph glands. Mallory has suggested that bacterial toxins stimulate the phagocytes so that they for a certain length of time acquire "malignant properties." Now the demonstration of erythrocytic opsonins naturally carries with it the suggestion that in certain diseased conditions, infectious and otherwise, substances are produced that render red corpuscles and other cells susceptible to phagocytosis by mobile cells in the same individual. It has been shown experimentally by Savtchenko[26] and others that if serum of a rabbit immunized with guinea-pig corpuscles be introduced into the abdominal cavity of guinea-pigs, then the red corpuscles are promptly taken up by their fellow leucocytes, especially those in the peritoneum and the spleen; Levaditi observed phagocytosis of red cells in the circulating blood also. Ruziczka (quoted by Gruber, loc. cit.) observed this phagocytosis *in vitro*. And Portis[27] found that in dogs injected with the serum of goats, immunized with dog thyroid material, there occurred an extensive phagocytosis of the red corpuscles by hyaline and endothelial cells. In the test tube, dog leucocytes and human leucocytes readily take up the corresponding red corpuscles if these have been influenced by an immune serum of the proper kind. Whether abnormal phagocytosis of red corpuscles occurs in the body of animals immunized with foreign blood has not been determined.

The agglutination of red corpuscles occasionally seen in the organs in typhoid fever and other diseases[28] is held to be the result of the action of hemagglutinins of bacterial origin. Indeed Pearce and Winne[29] were able to demonstrate the presence of hemagglutinins in cultures of typhoid bacilli. Hence it is not unreasonable to expect that hemopsonins also may be developed as the result of infections. Indeed, I have found recently that the serum of convalescents from various infectious diseases (typhoid fever especially, but also pneumonia and scarlet fever) may contain not only agglutinins, but also opsonins for human erythrocytes, which, when acted on by such serum, are subjected to phagocytosis by homologous leucocytes. This demonstration may serve in time to explain to some extent the anemia of many infections.*

III. THE EFFECT OF HEAT ON OPSONINS.

Many normal opsonins are destroyed or rendered inactive by heating at 54 to 60° C. for 30 minutes, some being more resistant than others. Thus normal human serum contains an opsonin for typhoid bacilli that resists heating above 60, and there is an opsonin for anthrax bacilli in the serum of white rats that resists heating to 70. Dean[30] holds that in heating sera to 60 only a fractional destruction of the opsonin occurs, and that on account of the brief time that the opsonin is allowed to act on the bacteria according to the original method of Wright and Douglas (15 minutes) only fairly high concentrations are indicated. On longer treatment of bacteria with serum heated even for a longer time, Dean obtained evidence of the persistence of considerable opsonin. Normal serum kept at about 2° C. may preserve its opsonins for several days, but at 37° C. they seem to deteriorate rapidly.[31] Dean, however, found normal horse serum to contain opsonin even after several years.

Immune opsonins appear more resistant to heat than the normal. Rimpau and Neufeld found that the opsonin in their immune antistreptococcus serum resisted heating to 59° C. for 30 minutes. Dean found that the bacteriopsonins in various immune sera are thermostable, resisting heating at 60° for several hours; he believes that the "fixateurs" of the French and the normal opsonins of Wright and Douglas in reality are indentical in a general way with these thermostable substances, and he recommends the use of the word opsonin in order to designate the particular property indicated by it. On the other hand it is quite possible that normal and immune opsonin may not be wholly identical bodies but differ somewhat, as Landsteiner and Reich[32] conclude is the case with normal and immune hemagglutinins.

The specific opsonin present in the serum of rabbits and goats immunized against so-called virulent pseudodiphtheria bacilli is destroyed on heating at 70° C. for two hours.[33]

Leishmann and his associates[34] found that the serum of persons vaccinated against typhoid fever, after heating to 56° C.,

24. Jour. Exp. Med., 1898, vol. iii, p. 611, and 1900, vol. v, p. 1.
25. Trans. Chicago Path. Soc., 1903, vol. v, p. 151.
26. Ann. de l'Inst. Pasteur, 1902, vol. xvi, p. 107.
27. Jour. Infect. Dis., 1904, vol. i, p. 127.
28. Flexner, Jour. Med. Research, 1902, vol. iii, p. 316.
29. Am. Jour. Med. Sci., 1904, vol. cxviii, p. 668.
* Eason (Edin. Med. Jour., 1906, vol. xix, N. S., p. 43) describes phagocytosis of red corpuscles under the influence of serum from patients with paroxysmal hemoglobinuria.
30. Proc. Royal Soc., S. B., 1905, vol. lxxvi, p. 506; also Centbl. f. Bakt., part i, 1905, Ref. vol. xxxvii, p. 349.
31. Horton: Trans. Chicago Path. Soc., 1905, vol. vi, p. 297.
32. Centbl. f. Bakt., part i, 1905, Orig., vol. xxxix, p. 712.
33. Hamilton and Horton: Jour. Infect. Dis., 1906, vol. iii, p. 128.
34. Jour. Hygeine, 1905, vol. v, p. 380.

still contains a substance that promotes phagocytosis of typhoid bacilli, and I have determined on several occasions that the serum of typhoid convalescents contains a typho-opsonin that is not completely destroyed on heating at 70° C. for 30 minutes.

Immune hemopsonins are also thermostable. Barratt found the opsonic power to be reduced by heating at 69, and destroyed after heating at 100° C. for 30 minutes. I have found that the hemopsonin in the serum of rabbits immunized with goat corpuscles persists to some extent after heating at 70° C. for one hour.

Efforts to determine something of the chemical nature of opsonic substances do not seem to have been made as yet.

IV. NON-SPECIFIC ANTIOPSONINS.

The production of specific antiopsonins does not seem to have received much attention as yet, but in mixtures of bacteria, leucocytes and normal serum phagocytosis may be diminished or inhibited by a number of different substances, such as solutions, isotonic with serum, of $CaCl_2$, $BaCl_2$, $SrCl_2$, $MgCl_2$ K_2SO_4, $NaHCO_3$, $Na_3H_3C_6O_7$, $Na_2C_2O_4$, $KFe(CN)_6$, formalin, lactic acid, chloroform, alcohol.

The question of how these substances hinder phagocytosis, whether by acting on the leucocytes, the bacteria or the serum, is an interesting one. The results of experiments by Dr. Ruediger and myself indicate that the substances mentioned act essentially on the opsonin which they prevent from acting on the bacteria. Lactic acid, for instance, in doses of from 0.003 to 0.0015 c.c. of a solution containing 77.14 per cent. of lactic acid ($C_3H_6O_3$) by weight prevents phagocytosis of anthrax bacilli and staphylococci by the leucocytes in 0.5 c.c. of defibrinated blood, human and dog. The antiphagocytic action of lactic acid is also illustrated in its neutralization of the anthracidal effect of normal dog blood as shown in Table 3.

TABLE 3.—THE SUSPENSION BY LACTIC ACID OF THE ANTHRACIDAL ACTION OF DOG BLOOD.

Defibrinated Dog Blood 0.5 c.c. + Lactic Acid + NaCl sol. to Make 1 c.c.	Number of Bacilli in Total Quantity.		
	At once.	3 hours.	6 hours.
Lactic acid .003	5880	0	0
Lactic acid .0015	5880	800	4270
Lactic acid .00075	5880	6370	3080
Lactic acid .000375	5880	600	88
NaCl only + blood	5880	548	22

That this effect of lactic acid is due to action on the opsonin is shown in this way: 0.2 c.c. of serum are mixed with 0.0015 c.c. lactic acid in 0.5 c.c. of NaCl solution and placed at 36° C. for one hour; anthrax bacilli are now added and the mixture returned to the incubator for 30 minutes, when the bacilli are washed twice and suspended in salt solution 0.5 c.c., to which are added washed leucocytes. The control mixtures are made in the same way except that the bacilli are treated with serum free from lactic acid. Counting the leucocytes in each case with reference to phagocytosis shows that the acid prevents the sensitization of the bacilli, and inasmuch as the treatment of the bacteria with lactic acid does not render them insensitive to the opsonic action of fresh normal serum, the action of the acid is primarily on the opsonin.

TABLE 4.—THE ANTIOPSONIC ACTION OF LACTIC ACID.

	Phagocytosis.	
	+	0
Bacilli sensitized in dog serum + lactic acid	0	50
Bacilli sensitized in dog serum + NaCl only	45	5
Bacilli sensitized in human serum + lactic acid	0	50
Bacilli sensitized in human serum + NaCl only	38	12

Neither lactic acid nor any of the other antiphagocytic substances employed in our earlier experiments has any appreciable detrimental effect, in the concentrations tested, on the phagocytic action of leucocytes[35] with respect to previously sensitized bacteria. It is probable, therefore, that certain so-called negatively chemotactic substances, of which lactic acid is a good example, owe their effect to neutralization or destruction of the opsonin. The diminution of resistance to various infections produced by lactic acid[36] and ascribed to its direct repulsion of phagocytes is therefore perhaps dependent primarily on its antiopsonic action.

Non-specific antiopsonins may be important factors in the establishment and spread of various infections. It is quite possible that substances with antiopsonic action arise in consequence of local and general metabolic disturbances. Perhaps it is in this direction that we should seek a better understanding of the so-called lessened vital resistance that we believe permits the development of the primary and secondary infections in which phagocytosis is an essential means of defense. It certainly would seem unwise in such infections to inject into the tissues and vessels agents that, like formalin, possess antiopsonic properties. Of course the condition of the leucocytes themselves must not be left wholly out of consideration inasmuch as it is possible that various agents may reduce not only the property to react to stimuli leading to phagocytosis but also their power to destroy the ingested microbes. Thus Ruediger noted that leucocytes from a case of acute nephritis were less effective in destroying streptococci than those from normal individuals. The decrease of resistance to certain experimental infections by antileucocytic serum[37] is of interest in connection with this question.

V. THE NATURE, STRUCTURE, AND FUNCTION OF OPSONINS.

Are opsonins distinct from other antibodies?—I do not propose at this time to discuss in detail the evidence in favor of the view that opsonins are distinct from lytic amboceptors and agglutinins.[38] The reasons why opsonic action of normal and immune serum are to be regarded for the present as connected with distinct bodies may be summarily stated as follows:

1. Normal serum may possess lytic power, but not opsonic, and *vice versa*.

2. Immunization may give rise to opsonic substances, but not to lytic or agglutinating.

3. Heat may destroy opsonic power, while the lytic amboceptors remain intact, and *vice versa*.

The Structure of Opsonins.—Opsonins like other antibodies occur in normal serum and are produced anew in response to immunization with suitable foreign cellular receptors or antigens. As in the case of other antibodies the production and structure of opsonins are explainable in the general terms of Ehrlich's lateral chain theory. They may be regarded as a product of the reaction of cells in the body to certain receptors or molecules ("opsogens") in bacteria, red corpuscles and possibly other cells for which they in turn have a special affinity. In the case of bacteria it would seem, as pointed out by Neufeld and Rimpau, that it concerns especially those receptors on which virulence depends. Like agglutinins and precipitins opsonins may be conceived

35. Probably true also of alcohol and chloroform in certain concentrations

36. Himmel, for instance (Ann. de l'Inst. Pasteur, 1901, vol. xv, p. 928), produced an artificial susceptibility toward the bacillus of soft chancre by means of injection of lactic acid in a guinea pig. Vaillard and Vincent observed that the addition of lactic acid to pyocyaneus culture in the proportion of 1 to 500 served to repel the leucocytes which otherwise crowd rapidly into the tubes filled with pyocyaneus cultures. Increasing the dilution to 1 to 1,000 leucocytes are no longer repelled. This has been confirmed by Massart and Bordet.

37. Ricketts: Trans. Chicago Path. Soc., 1903, vol. v, p. 173.

38. See Neufeld and Töpfer; Barratt: loc. cit.

to possess two molecular groups, a haptophore, whereby they attach themselves to corresponding receptors in bacteria and other cells, and a functional group which may be called the opsoniferous, whereby is effected in the cell to which they are attached some change, physical or chemical, that is necessary for phagocytosis. Whether it is possible to destroy or inactivate the opsoniferous group and thus to change an opsonin into an inactive opsonoid, comparable to the "oid" modifications of other antibodies, remains to be seen.[39]

The Opsonic Action.—We may regard a leucocyte as a drop of viscid fluid, largely colloid in nature, suspended in a medium in which it is nearly or quite insoluble. Within the drop the particles are subject to the same pressure from all sides, but at the surface the pressure is unequal because of the difference in the cohesion pressures of the two fluids, and as the result of the surface tension a delicate permeable membrane is formed.

The tangible reactions of motile cells like leucocytes to various stimuli are generally interpreted as results of changes of surface tension. When the surface tension is lessened at any part of a leucocyte the wall at this point bulges, and as the contents of the cell flow in here the whole cell moves toward the point of lessened tension. On the other hand, increase of tension at any one point causes bulging elsewhere and the result is that the whole cell tends to move away from the point of increased tension.

Now the stimuli that may cause these changes may come from within the cell and be the result of metabolic activities and chemical or physical in nature. They may give rise to spontaneous motion. Or stimuli may come from without and be chemical, electrical, thermal or mechanical in character. At present the external forces concerned in the motion of leucocytes are regarded as essentially chemical in nature and we speak of the manifestations of these forces as chemotaxis, the term applied by Pfeiffer in 1888 to the attraction that the malic acid in the female sperm cell exercises on the spermatozoids of certain ferns.

Phagocytosis is essentially ameboid motion, continuing until the object is enclosed within the phagocyte, or, in the case of large objects, partly so enclosed. Viewed in the light of the foregoing considerations, the action of opsonins may be defined in all brevity to consist in so changing bacteria and other cells that these by chemical or electrical (possibly also mechanical) means diminish the surface tension of leucocytes and thus bring about phagocytosis or, as stated in terms more familiar, substitute positive for negative chemotaxis.

Manifestly leucocytes from different species may react differently to the same stimulus. Thus the stimulus that lessens the surface tension of human leucocytes may have no such effect upon rabbit leucocytes. In this way one may explain the difference in the behavior of different leucocytes under similar circumstances.[40]

VI. THE INTRAPHAGOCYTIC DESTRUCTION OF BACTERIA.

The demonstration that normal and immune opsonins subject various bacteria to phagocytosis does not prove that these substances are of any importance in infections. It must be shown that the streptococci, pneumococci, and other micro-organisms are destroyed within or by the phagocytes, that phagocytosis is essential for the destruction of certain bacteria by the blood and other fluids of the body. Valuable information in regard to these points, especially as concerns human beings, may be obtained from test tube experiments.

Years ago Denys demonstrated that in mixtures of normal rabbit serum and leucocytes there was little or no destruction of virulent streptococci, but that when immune serum was substituted prompt phagocytosis with complete destruction of the streptococci took place. G. F. Ruediger has shown that in man also the leucocytes play a cardinal rôle in combating streptococcus infections.[41] The serum of normal human beings and of patients suffering from streptococcic infections has no streptococcidal effect, but constitutes a good medium for streptococci. Normal defibrinated human blood, however, has some streptococcidal action and blood from patients with acute infections and leucocytosis has much greater effect, and the higher the leucocyte count the more marked this effect. He shows, too, that the opsonin in the serum must be present in the mixtures of blood and streptococci in order that the latter may be destroyed by leucocytes. "There is no phagocytosis and hence no destruction of unsensitized cocci by washed leucocytes." These facts are shown in Table 5, taken from Dr. Ruediger's article.

TABLE 5.—Streptococcal Action of Leucocytes.

Mixtures.	Colonies on Glucose Agar Plates.		
	Immediately.	2 hours.	24 hours.
Washed corpuscles + serum	1,500	7	21
Washed corpuscles + heated serum	1,400	5,000	Many
Washed corpuscles + NaCl solution	1,700	3,500	Many
Serum	1,200	1,400	Many

The manner in which the body rids itself of pneumococci as pneumonia with its pneumococcemia passes the crisis is of great interest. Recent and as yet unpublished work by Dr. E. C. Rosenow in our laboratory indicates clearly that the pneumococci are destroyed by the leucocytes in co-operation with the opsonin in the serum. In their behavior toward normal and pneumonic serum and toward the leucocytes the pneumococci appear to resemble streptococci as shown in Table 6 which also brings into prominence the numerical influence of leucocytes.[42]

39. Dr. Ruediger and I believed that by heating opsonified bacteria to destroy the opsonic effect, but Bulloch and Atkin (*loc. cit.*) appear to have reached contrary results.

40. Human and dog leucocytes lose the power of phagocytosis of bacteria when heated to 45 C for 30 minutes. After heating at 42 C. there is still good phagocytosis. When mixtures of leucocytes heated at 45 C., with bacteria and normal serum are placed in a shaking machine and gently agitated for an hour or so, the smears commonly show a neat accumulation in more or less perfect circles of bacteria immediately around leucocytes. This interesting phenomenon was first observed by Dr. Rosenow in mixtures of pneumococci, heated human leucocytes and human serum, but is observable in other mixtures of the same general nature. Omitting the serum, heating the serum to 58 C., or heating the leucocytes to 50 C. eliminates in each case some factor or factors essential for the development of this perileucocytic arrangement. Vlassow and Sepp found that motility of leucocytes is increased at 40 C and that temperatures of 42 to 46 C. cause irregular and feeble movements. It is possible that the perileucocytic disposition of the bacteria about the leucocytes heated at 45 C. are the results of movements on the part of the heated cells toward sensitized bacteria, but it also would seem to be necessary to look for some mechanism that holds the bacteria together about the leucocytes. Under the circumstances there must be assumed to exist a mutual attraction between the bacteria and the cells.

41. The Journal A. M. A., 1905, vol. xliv, p. 198, and 1906, vol. xlvi, p. 108.

42. As regards staphylococci I have found that their destruction in human and dog blood is roughly proportionate to the number of leucocytes; that washed blood permits of multiplication and that the destructive action of serum alone falls short of that of defibrinated blood. Furthermore, normal serum heated to 58 C. for thirty minutes mixed with washed homologous leucocytes is a good medium for these bacteria. Hence it may be concluded that here also leucocytes and opsonin are essential for the greatest destructive effect of blood on staphylococci *in vitro*.

TABLE 6.—PNEUMOCOCCIDAL ACTION OF HUMAN LEUCOCYTES.

Mixtures.	Number of Leucocytes per c.mm.	Extent of Phagocytosis in 1 hour.	Number of Colonies on Plates.			
			At once.	1½ hrs.	10 hrs.	24 hrs.
Washed corpuscles, 0.5 + fresh serum 0.5	11000	30	1350	1000	18	200
Washed corpuscles, 0.5 + fresh serum 0.5	31000	10	1050	25	4	0
Washed corpuscles, 0.5 + fresh serum 0.5	50	7	1000	1450	∞	∞
Washed corpuscles, 0.5 + fresh serum 0.5	9500	0*	45	1200	5000	∞
Washed corpuscles, + NaCl sol. 0.5	5500	0	1450	1500	∞	∞
Washed corpuscles, 0.5 + serum heated to 60° C. for ½ hour 0.5	5500	8	1450	1200	1850	1600
Washed corpuscles, (heated to 50° C. for 30 min. 0.5 + fresh serum 0.5	11100	0	1250	1300	∞	∞
Fresh serum 1			480	800	1400	4500

(∞ stands for innumerable.)

* In this case a highly virulent pneumococcal strain, resistant to phagocytosis, was used.

It is generally accepted as extremely probable that the relative natural immunity of the dog to anthrax is due to phagocytosis. Virulent anthrax bacilli grow freely in normal dog serum and in suspensions of washed dog blood. They are destroyed, however, in defibrinated dog blood and the destruction is associated with marked phagocytosis, the bacilli within the phagocytes undergoing the well-known changes described by Metchnikoff in his early, classical experiments on phagocytosis. Destruction also takes place when normal serum is added to washed corpuscles and when bacilli, sensitized in normal serum, then washed, are added to the washed blood or leucocytic exudate. In serum-free mixtures the leucocytes remain scattered, while they gather in clumps about opsonized bacilli.

TABLE 7.—ANTHRACIDAL ACTION OF DOG BLOOD.

Mixtures; total quantity 1 c.c.	No. of Bacilli in Total Quantity.		
	At once	2 hrs.	5 hrs.
Defibrinated blood 0.5 + NaCl sol. 0.5	3000	280	20
Washed blood 0.5 + NaCl sol. 0.5	3000	2750	∞
Washed blood 0.5 + normal serum 0.5	3000	181	114
Washed blood 0.5 + NaCl sol. 0.5 + sensitized bacilli	3120	628	105
Washed blood 0.5 + NaCl sol. 0.5 + bacilli treated with serum heated at 60° C. 30 minutes	980	1962	∞
Washed blood heated at 45° C. 0.5 + normal serum 0.5	3500	6475	∞
Dog serum 0.5 + NaCl sol. 0.5	3692	6590	∞
Serum 0.5 + NaCl sol. 0.5 + bacilli treated with normal serum	1600	3509	∞
Broth 0.5 + NaCl sol. 0.5	1692	11530	∞
Broth 0.5 + NaCl sol. 0.5 + bacilli treated with normal serum	3076	9860	∞

The essential rôle of the intraleucocytic destruction of the bacilli is well shown in plates made with decreasing quantities of blood, a fixed quantity of bacilli, the total quantity being kept at 1 c.c. in all cases by addition of normal dog serum. The destruction decreases as the leucocytes decrease in number.[43]

TABLE 8.—DIMINISHING DESTRUCTION OF ANTHRAX BACILLI WITH DECREASING QUANTITIES OF DOG CORPUSCLES (LEUCOCYTES) AND INCREASING QUANTITIES OF DOG SERUM.

Quantity made up to 1 c.c. by adding normal dog serum.	No. of bacilli in total quantity.		
	At once.	3 hours.	5 hours.
Defibrinated blood, 1 c.c.	1,400	0	0
Defibrinated blood, .75 c.c.	1,400	79	560
Defibrinated blood, .5 c.c.	1,400	89	700
Defibrinated blood, .25 c.c.	1,400	840	3,500
Defibrinated blood, .125 c.c.	1,400	1,750	4,650
Defibrinated blood, .062 c.c.	1,400	1,600	10,000+

43. Dr. Davis has observed that meningococci undergo rapid disintegration in the cytoplasm of the leucocytes (in serum) as shown by failure to stain.

The prompt and pronounced phagocytosis observed by numerous investigators of different bacteria in the peritoneal cavity in the presence of specific immune serum indicates that opsonins play an analogous rôle *in vivo* as *in vitro*, and we must conclude that in opsonins we have a new form of antibody that plays an essential part in the explanation of immunity to and healing of those infections that are caused by bacteria like streptococci, pneumococci, and staphylococci and others, the destruction of which is not at all or at least not readily accomplished by free lysins and in infections with which there is so pronounced a leucocytosis.

On the whole it seems to me that these recent studies of opsonins and phagocytosis place Metchnikoff's general theory, hitherto perhaps generalized too much, on a very substantial basis.

I shall not attempt to discuss in detail the manner in which the intraphagocytic destruction of certain bacteria takes place and shall leave untouched the question as to the part played by cytase and other bodies. It is interesting to note, however, that, on autolysis or extraction with water, washed dog leucocytes yield soluble, thermostable and filterable anthracidal substances. Whether human leucocytes contain similar substances remains to be determined. Neufeld and Rimpau were unable to extract streptococcidal or pneumococcidal substances from the washed leucocytes of rabbits and guinea-pigs.

Of course it does not necessarily follow that phagocytosis of bacteria is always synonymous with their destruction. The phagocyte may be killed by the toxic products of the bacteria taken up, which in the mean time perhaps have grown in virulence. In this case phagocytosis might be the means of spreading rather than limiting infection. Unquestionably agglutination renders easy the taking up of large numbers of bacteria, but the phagococytes may suffer the more in consequence of the concentration of toxic products. Undoubtedly the power of intraphagocytic destruction varies with respect to different bacteria.

VII. VIRULENCE AND RESISTANCE TO PHAGOCYTOSIS.

A fundamental tenet in Metchnikoff's doctrine of phagocytosis in infections teaches that as a microbe increases in virulence its resistance to phagocytosis increases. Experiments outside the body give results in full harmony with this view.

I have referred to the interesting observations by Denys on the insusceptibility of virulent streptococci to phagocytosis by rabbit leucocytes in normal rabbit serum. Dr. Ruediger and I have found that normal rabbit or guinea-pig serum has no appreciable effect on streptococci in a state of animal virulence (using rabbit, guinea-pig or human leucocytes as phagocytes), but when grown for from two to four weeks on glucose and other media the streptococci become readily susceptible to the opsonic action of the sera mentioned. It has been found also that those media best conserve virulence and resistance to phagocytosis that approach closest in composition to the natural fluids of the body, e. g. blood-agar, serum media.

With the aid of Miss Horton I have made analogous observations with the same general results as to anthrax bacillus and staphylococcus pyogenes. As the strain of anthrax bacillus increases in virulence on passage through guinea-pig to guinea-pig, it resists phagocytosis by guinea-pig leucocytes in guinea-pig serum more and more until it no longer is taken up. In a particular instance the bacillus now killed medium-sized guinea-pigs in doses of 0.00625 c.c. of a 24-hour broth culture. Similarly a strain of staphylococcus, whose virulence for rabbits was raised by successive inoculations soon became insusceptible to phagocytosis by rabbit leucocytes in

rabbit serum. A few days' growth outside the body, however, was sufficient to lower both virulence and resistance to opsonin.

The figures in Table 9 are not strictly comparable for the reason that the suspensions of the different strains, though made of as nearly the same bacterial content as possible, nevertheless may have varied considerably in respect to the actual number present in each. The differences in the degree of phagocytosis, however, are so marked as to leave no doubt of the close relation between virulence and resistance to opsonin.[44]

TABLE 9.—PHAGOCYTOSIS OF ATTENUATED AND VIRULENT BACTERIA.

Organism.	Leucocytes	Serum.	Phagocytosis.	
			Attenuated Strain.	Virulent Strain.
Streptococcus B 104	Rabbit	Rabbit	10	0
Streptococcus B 104	Guinea pig	Guinea-pig	16	1
Streptococcus B 104	Human	Human	10	10.5
Streptococcus B 104	Human	Rabbit	10.5	0
Streptococcus B 104	Human	Guinea-pig	40	0
Staphylococcus	Rabbit	Rabbit	36	0
Anthrax bacillus	Guinea-pig	Guinea-pig	15	0
Pneumococcus*	Human	Human	33	0
Pneumococcus*	Human	Human	33	3.1

* When first isolated by Dr. Rosenow this pneumococcus was virulent for rabbits and was not taken up by human leucocytes. After cultivation for one month on plain agar it had lost its virulence and also its resistance to phagocytosis. After passage through seven rabbits its virulence was restored to some extent and also its resistance to phagocytosis.

It seems, then, that the relative susceptibility of various bacteria to phagocytosis under the influence of normal serum is a very accurate index of virulence of which practical and possibly prognostic use might be made.

The question of the manner in which the bacteria when virulent protect themselves from phagocytosis is of great interest. Marchand[45] reached the conclusion that the resistance of virulent streptococci to phagocytosis depended on the physical state of the cocci because neither living nor dead cocci were taken up and because there was no phagocytosis of virulent cocci freed by washing from all soluble products and placed in filtrates of the non-virulent strain, while non-virulent cocci placed in filtrates of the virulent were taken up freely. My own experiments also show that virulent organisms, freed from antiopsonic substances by washing, on being heated at 55° C. for 30 minutes, are not opsonified when treated with normal serum. Similar treatment of the avirulent strains has no effect on their phagocytability. Now virulent streptococci that are not rendered phagocytable for rabbit and guinea-pig leucocytes by normal serum (rabbit, guinea-pig, human) are taken up to some extent by human leucocytes after treatment with human serum. We know also that virulent cocci are subjected to phagocytosis under the influence of immune serum and, further, that immunization of animals with virulent cocci increases the opsonin in the serum. Consequently, the insusceptibility of virulent cocci to phagocytosis probably does not depend on any lack of suitable receptors or affinity for opsonin, but rather, it would seem, on an increased resistance to its peculiar action, namely, so to modify the cocci that they lower the surface tension of the leucocytes in their neighborhood and thus lead to phagocytosis. The chemical and physical factors, e. g., a possible capsule formation, that protect virulent bacteria against opsonification are subjects for further investigation.

So far as our observations have extended centrifugated culture fluids of virulent streptococci, staphylococci and anthrax bacilli reduce phagocytosis of the corresponding non-virulent strains, principally, I believe, through direct action on the leucocytes because the fluids in question have but a comparatively slight inhibitive or destructive effect on the opsonin in normal serum, but reduce greatly by one hour's contact the phagocytic power of leucocytes with respect to previously sensitized bacteria. In full harmony with this loss in phagocytic power are the marked functional and morphologic disturbances in the leucocytes placed in fluids containing the products of the growth of virulent bacteria. Thus, when leucocytes are placed in the culture fluids of a virulent streptococcus and examined from time to time on the warm stage, they are seen to lose ameboid movement and to swell greatly in from 30 to 60 minutes, whereas the leucocytes in control experiments remain normal in form and motion several times as long.

Dr. Ruediger[46] has shown that the filtrates of virulent streptococcus cultures may suspend the destruction of non-virulent streptococci by leucocytes.

According to Dr. Rosenow's observations suspensions of virulent pneumococci do not prevent phagocytosis of other bacteria, and he has not been able so far to secure any evidence of a pneumococcal leucotoxin.

In serum-broth cultures of rabbit-virulent streptococcus (streptococcus M. 1 and B. 104) Dr. Ruediger finds that leucocytes undergo marked morphologic changes after from one to one and a half hours at 37° C. There is no phagocytosis or very little; the cytoplasm appears more or less homogeneous with indistinct margins and the nuclei may swell up into large masses with irregular outlines; many cells appear indistinct, the nuclei only faintly stained, and disintegration seems to be taking place. These changes are still more profound after three hours in the incubator. They take place to about the same degree in the culture fluid from which most of the streptococci have been removed by centrifugalization, but not nearly to so marked a degree in Berkefeld filtrates. Heating the centrifugated fluid at 56 and 62° C. for 30 minutes does not destroy its leucocidal powers. In 24-hour cultures of a non-virulent streptococcus there is good phagocytosis and only a few cells show any changes. In control specimens from sterile ascites broth the cells appear quite normal with definite deeply stained nuclei. Changes occur also in guinea-pig leucocytes treated with centrifugates of broth cultures of virulent anthrax bacilli and in rabbit leucocytes treated with centrifugates of cultures of virulent staphylococci.[47]

In some of our experiments Dr. Ruediger and I have obtained evidence that the serum of animals immunized with virulent streptococci may neutralize the leucocidal and antiphagocytic actions of virulent streptococcus filtrates, but much further work is necessary to secure definite results of general value.

It would seem, then, that as certain bacteria under the influence of stimuli from the host increase in virulence they become better able to defend themselves against phagocytosis in at least two ways, namely, by producing

44. Dr. Rosenow finds that pneumococci which have been recently isolated from pneumonic patients, as well as those that are virulent for rabbits, as a rule are relatively resistant to phagocytosis in normal human serum. The rapidity with which virulence and resistance to phagocytosis are lost on artificial cultivation vary greatly, and both properties are best conserved in media containing blood. While difficult, yet Dr. Rosenow, by prompt reinoculation of organisms obtained from the blood during the life of inoculated rabbits, has been able to restore lost virulence and with it relative insusceptibility to phagocytosis.

45. Arch. de Med. exp., 1898, vol. x, p. 253.

46. THE JOURNAL, A. M. A., 1905, vol. xliv, p. 198.

47. The leucotoxic power of staphylococci was first studied by van de Velde (La Cellule, vol. x, Ann. de l'Inst. Pasteur 1896, vol. x, p. 580), and by Denys and van de Velde (La Cellule, vol. xi), who showed that the leucocidin, as the particular substance concerned in leucocidal action is called, on immunization gives rise to a specific antileucocidin. The toxins produced by staphylococci have been studied also by Neisser and Wechsberg (Zeitschr. f. Hyg. u. Infektionskr., 1902, vol. xxxvi, p. 299).

substances that are harmful to the phagocytes and by an increased resistance to opsonification. Conversely we may think of the host as defending himself against certain infection by the production of opsonins and of anti-leucocidal substances.

VIII. GENERAL CONSIDERATIONS OF THE PRACTICAL AND THERAPEUTIC IMPORTANCE OF THE INVESTIGATIONS CONCERNING OPSONINS.

The Opsonic Value of Antistreptococcus Serum.—The usefulness of specific sera in the curative treatment of established streptococcemia and like diseases may be a limited one in so far as essential symptoms perhaps are due not solely to bacterial intoxication but in large measure to substances derived from abnormal changes in the constituent elements of the host. The fact, however, that in progressive infections of this kind there seems to be an unabated multiplication of bacteria in the blood and the tissues lend strong support to the view that the functional disturbances are dependent on the growth and activity of the bacteria.

If the conclusion already indicated be correct, namely, that certain virulent bacteria, so to speak, guard themselves against phagocytic destruction by means of substances that are harmful to the phagocytes and by resistance to opsonification, then one would expect potent antibacterial sera for organisms in this class to contain at least two kinds of substances, namely, antileucocidal substances and opsonic substances, powerful enough to subject the virulent strains to phagocytosis. Neufeld and Rimpau explain the action of their antistreptococcus and antipneumococcus sera as due to occupation of the bacterial receptors on which virulence depends and which give rise to the production of immune bodies.

At present the principal serum used in infections in the healing of which phagocytic immunity may be regarded as an essential phenomenon is antistreptococcus serum. Tests made a year ago by Dr. Ruediger and myself showed that the antistreptococcus sera then in general use in this country all possessed a lower opsonic index for various streptococci than normal horse serum, many samples being without any opsonic power presumably on account of their age. It would seem that a careful study of the streptococco-opsonic index of the different sera at different times might prove of interest for the purpose of determining not only the degree and duration but also the range of their opsonic activity with reference to different strains of streptococci of differing virulence, thus securing valuable indications of the content of specific antibodies in sera that have hitherto been insusceptible of adequate control.

Perhaps sera of increased opsonic potency might be obtained if opsonic receptors of virulent streptococci freed beforehand from other constituents of the bacterial cells could be used in the immunization of animals. The study of antistreptococcus sera with reference to antileucocidal, antistreptolytic and other antibodies may also yield valuable information. These remarks would seem to be equally applicable to antipneumococcus serum.

Considerations Relating to Leucocytosis.—The study of opsonins has given us a clearer conception of the relative importance of local and general leucocytosis. The use in the treatment of septic infections, so-called, of agents that increase the general leucocytosis (collargol, nucleinic acid, etc.) may be of benefit and quite rational if the increased leucocytosis be produced at times when the opsonic index is high and, further, if the agents used do not in themselves reduce or neutralize the opsonin.[48] In many of these conditions and in pneumonia, for instance, in which there is commonly a very high leucocytosis, it would seem that the opsonin is at fault as much as if not more than the leucocytes, and we need detailed investigations on this point.

The efforts of Mikulicz and others to enhance the resisting power of the peritoneum and of the body in general by the production of leucocytosis preliminary to abdominal operations associated with grave dangers of infection—"the summons of leucocytes as advance guards"—would seem to be a rational procedure in favor of which we have considerable experimental evidence. In this case also, care must be taken that the leucocytotic agents employed do not depress the opsonic index. The suggestion lies near at hand that the chances of the patient would be raised still further if the operation could be made during the positive phase of Wright, the period of increased bacteriotropic content of the blood, following inoculations with vaccines, properly dosed, of dead cultures of the bacteria most likely to cause infection, namely, streptococcus, colon bacillus, staphylococcus.

Considerations Concerning the Treatment of Various Local Infections.—There are various procedures employed, many of them more or less empirically, in the treatment of local infections, all of which serve in some way or other to increase the flow of blood and lymph through the area involved. Here belong hot applications of different kinds, rubefacients and irritants, massage, Bier's method of artificial hyperemia, the exposure to *x*-ray and radium, and also, in a measure at least, the Finsen treatment. Wright[49] has pointed out that the blind empirical use of some of these methods may not always be without danger when the blood possesses only inferior antibacterial power and that their effectiveness may be increased in various ways, but particularly when the antibacterial power of the blood, as measured by its opsonic index, is high either as a result of reactions to autoinoculations or to artificial inoculations of the proper bacterial vaccine. By the measurement of the opsonic index, then, valuable information may be obtained to guide in the treatment of local infections. Considering the practical impossibility in many cases of local tuberculosis of removing completely all infected tissue, it certainly would seem more desirable to undertake operation, if considered necessary, at a time when the tuberculo-opsonic index is high rather than when it is low and the general resistance of the patient to the bacilli that remain and may enter the opened lymph spaces consequently relatively reduced. The work of Wright and his followers on the antituberculo-opsonin in the blood of tuberculous patients also offers new points of view for the explanation of the healing of tuberculous peritonitis after laparotomy, long the subject of much discussion.

Brief Reference to the Therapeutic Inoculation of Vaccines.—Finally, I come to the most important practical part of this whole matter, namely, the value of the opsonic index in the successful treatment of infections, especially chronic and local and, above all, tuberculous, by means of the inoculation of bacterial vaccines, i. e., sterilized and standardized suspensions of bacterial cul-

48. Bulloch and Ledingham (Bulloch: Lancet, 1905, vol. ii, p. 1603) found that certain agents—"betol," tallianine increase the leucocytosis but not the opsonin content, while nuclein from yeast increases the opsonin (for what bacteria is not stated), and also the number of leucocytes, but the latter effect was inconstant.

49. Medico-Chirurgical Trans., 1905, vol. lxxxix.

tures. It is the merit of A. E. Wright, of London, who, since 1902, has been carrying out the underlying investigations to which I have referred so frequently, that this method of treatment has been placed on a firm and promising basis.[50]

According to Wright, many local infections persist, for the reason that the causative bacteria or their elements are not permitted to pass into the circulation in such numbers as to stimulate the machinery of immunization to form adequate quantities of antibodies at the proper time, and because the bacteria, in a measure, are protected from the action of such antibodies as may be present normally in the body or form in the course of the infection. Numerous tests by Bulloch and others show that in the tuberculous the tuberculo-opsonic index is subnormal. In lupus the average is 0.75 (Bulloch).

By measuring the resistance to the infective germ by comparison of the opsonic power of the patient's serum with that of the serum of normal persons, Wright and his followers have shown that in all infections there are times when the resistance of the patient is rising and times when it is falling. In the latter instance the repeated introduction of the corresponding bacterial vaccines serves to depress still further the opsonic index, i. e., to lower the patient's general resistance. The vaccines should be administered when the opsonic index is high—this is the fundamental principle of Wright's method—and by "properly adjusted and interspaced" doses; in other words, by controlling the effects by means of the opsonic index aim to maintain the antibacterial power of the blood at a high level. By numerous tests Wright has shown that in tuberculosis much smaller doses of new tuberculin than commonly employed give maxima' immunizing responses without any constitutional disturbances. For this he employs new tuberculin in doses corresponding to from 1/1000 to 1/600 mg. tubercle powder.

As pointed out already, Wright, in addition to the use of "properly adjusted and interspaced" doses of vaccine in the treatment of local infections, especially tuberculous, also employs means to increase the flow of blood and lymph through the infected area in order to favor as much as possible the action of the antibodies on the bacteria.

This, briefly, is Wright's method of treatment of infections by inoculations of the corresponding vaccines. Remarkable results have been achieved in intractable cases of bone, lymph node and subcutaneous tuberculosis. The application of the general method to pulmonary tuberculosis, in which Lawson and Stewart[51] and others have shown that tuberculin when properly given also increases the tuberculo-opsonic index, promises well and it is hoped that Wright's treatment may be given a thorough trial.

50. For the references to Wright's publications on this subject see his address "On the General Principles of the Therapeutic Inoculations of Bacterial Vaccines as Applied to the Treatment of Tuberculous Infection," Medico-Chirurgical Transactions, 1905, vol. lxxxix, and Lancet, 1905, vol. II, p. 1598. See also Bulloch, Practitioner, 1905, and Lancet, 1905, vol. II, p. 1603.

51. Lancet, 1905, vol. II, p. 1697.

Massage of Inflamed Tonsils.—Molinié of Marseilles is quoted by the *Gazette Méd. Belge* as having been very successful in treating tonsillitis by squeezing out of the tonsils the concretions and septic relics which keep up the trouble. He introduces his forefinger and compresses each tonsil in turn from below upward. The procedure makes the tonsil bleed a little, and this local bleeding also aids in the cure.

MALARIA IN THE TROPICS.*

WILLIAM C. GORGAS, M.D.

Colonel and Assistant Surgeon-General, U. S. Army; Chief Sanitary Officer, Canal Zone.

ISTHMUS OF PANAMA.

Since 1898 I have served almost continuously in the tropics—four years in Cuba and two years at Panama—part of the time with troops, but most of this time being connected with municipal sanitation.

At Santiago, Cuba, I was with the army at the Base Hospital at Siboney, where all the seriously sick were sent during the entire campaign against Santiago until the army returned home.

In Havana I had charge of the yellow-fever wards at Las Animas Hospital. Las Animas was the hospital for contagious diseases for the Sanitary Department of Havana, and, while a large majority of the patients treated by me there had yellow fever, a considerable number of malarial cases were also received, being mistaken for yellow fever.

Here at Panama I am in charge of the yellow-fever ward. All non-immunes with fever from any cause coming into Ancon Hospital are sent to these wards, and much the larger proportion of these cases are malaria. We treat something like two hundred cases of malaria each month in these wards.

I give here my experience in some detail so as to indicate what my opportunities for observing malaria in the tropics have been. This experience has impressed on me the fact that malaria in the tropics is by far the most important disease to which tropical populations are subject, either military or civil. While the percentage of fatalities is not nearly so great as from some other tropical diseases, the amount of incapacity caused by malaria is very much greater than that due to all other diseases combined. I was very much impressed with this at Santiago. While we had more deaths from yellow fever and typhoid fever than from malaria, the latter was the disease that prostrated our splendid little army. About the beginning of August there were very few individuals that were not suffering from fever, and the army, as a whole, was scarcely able to move. The mental depression caused by this general sickness can hardly be appreciated by any one who did not see it, and against a fresh enemy of greatly inferior strength our army at that time would have been entirely helpless. This campaign was a good illustration of what might occur to an army operating in the tropics and subjected to unchecked malaria. I have not at hand the statistics to which I can refer concerning the mortality from malaria during this campaign, but my recollection is that it was not very fatal. I recollect very few cases of pernicious malaria or black-water fever.

In a tropical city like Havana, where I spent the four years succeeding the Santiago campaign, malaria was by no means so general as one would expect. The anopheles have very little opportunity of breeding about a city except in the suburbs, but even at Havana a greater number of persons died from malaria every year than from yellow fever. In Havana all our efforts and attention were given to the eradication of yellow fever, and very little emphasis was laid in our reports on the effect which the mosquito work had on malaria. This, however, was very marked. The average number of deaths reported in Havana from malaria for many years had been about 350; in 1901, our first year of mosquito

* Read at the Annual Meeting of the American Society of Tropical Medicine, in Philadelphia, March 24, 1906.

work, it was 151; in 1902, 77; in 1903, about 50, and it has remained since that date at about 40. I conside· that for a city the size of Havana this means the practical extermination of the disease, as that number of cases in the ordinary course of events would be brought in from the outside, or be due to mistakes in diagnosis.

Panama, I suppose, is as favorable a place for the development of malaria as could be found. The towns of Colon and Panama, at the termini of the canal, are not large enough to do away with the breeding of anopheles; that is, anopheles breeding in the suburbs can very well travel to the centers of these towns, and the population living along the canal in little villages a mile or two apart, between Colon and Panama, are ideally situated for the development of malaria. About one-third of the canal runs through a low alluvial and marshy plain, and the other two-thirds pass through a hilly and mountainous country. Along the banks of the little rivulets, which run in every direction, the anopheles breed just about as well as in the marshy level country, and the very general infection of the population by malaria causes most of the anopheles near human habitations to become infected.

We knew from the experience of our predecessors on the Isthmus that malaria would be our greatest trouble, and we did what we could toward correcting the conditions. Our greatest endeavor has been toward draining the localities near all towns and dwellings, so as to make the ground as dry as possible, and in order to leave as few breeding places as possible for the mosquitoes. In places that could not be drained, oil was used very freely.

With a large body of laborers such as we have here, I think an equally important measure is the giving of prophylactic doses of quinin. We also screened as many of the houses as possible and influenced all inhabitants to use mosquito-bars. These measures followed up persistently have had a great effect in reducing the malaria.

With a force of 22,000 men on the pay rolls during February, we had only twenty-two per thousand incapacitated every day on account of sickness. As I said before, fully three-fourths of this sickness was due to malaria, but the total would not be a large sick rate in a healthy locality in the United States. In my wards at Ancon I have personally treated 1,055 cases of malaria in the last six months. In each of these cases a blood examination was made and the character of parasite recorded. The estivo-autumnal variety largely predominated, but the attacks in general were mild and yielded easily to treatment. Among these 1,055 cases we have had only five deaths. So far as personal care for malarial fever is concerned, I believe that the most important thing the individual can do is to take a small dose of quinin daily. While this will not always prevent attacks, in a given body of men it will enormously reduce the number, and I think will prevent a severe type of the disease when it comes. The good results we have had in hemoglobinuric fever have surprised me most. In these wards we have had twenty cases of hemoglobinuric fever in the past eight months, and of these we have lost three.

The treatment has been the persistent use of quinin as soon as we could get hold of the patient. For the first three or four days the quinin is given hypodermically, but as soon as the patient ceases to vomit it is given by mouth; twenty grains in the twenty-four hours hypodermically and thirty by mouth has been the ordinary course. I have seen no evil results that could fairly be attributed to the administration of quinin, and I have often wondered if it could be the same disease which the English have on the west coast of Africa and in which so many of their leading practitioners think that quinin does harm.

The malaria we have here at present among the whites seems to me about as grave, and no graver, than the malaria which I treated in the garrisons along the gulf coast in the United States.

I look forward very hopefully to a diminution in the prevalence of malaria down here. It seems to me that by the continuance of our present measures we ought still further to decrease malaria. Year by year the ditching will decrease the number of anopheles near the habitations along the Canal Zone, and the treatment of the patients in hospital and the constant giving of prophylactic quinin will decrease the number of people who are liable to spread the infection, and I believe that these two forces will act and react as time goes on. Our conditions have been as trying in the past year as they are likely to be. We have had a larger force of men than the French had. The population was very generally infected with malaria, and the ditching and draining had just been completed. All these conditions ought to improve steadily as time goes on, and it seems to me a perfectly rational hope that malaria will decrease in the same ratio. Even if we can not decrease malaria below what it is at present, we will have succeeded in building the canal with no greater number of days lost from disease than if we were building it at home. I hope to do better than this.

A COMPARISON OF THE PHARMACOLOGIC ACTIVITY OF THE FLUID EXTRACT OF SQUILL PREPARED ACCORDING TO THE UNITED STATES PHARMACOPEIA 1890 AND 1900.

E. M. HOUGHTON, Ph.C., M.D.
DETROIT, MICH.

Quite a number of more or less important changes in the method of making some of our important standard pharmaceutical preparations have been introduced in the new eighth edition of the United States Pharmacopeia. One of the most radical of these changes is the substitution of acetic acid (10 per cent. absolute acid) in place of alcohol (95 per cent.) as the menstruum for making fluid extract of squill. During the past eight years it has been my privilege to examine personally, or to check the results obtained by an assistant, many samples representing thousands of pounds of fluid extract of squill and other heart tonics for physiologic activity. The method of assay has been substantially that given in an article published in The Journal[1] for making quantitative pharmacological assays of the heart tonics.[2] For the sake of clearness it may be explained that the strength of the given preparation is determined by a comparison of the minimum fatal dose per gram body weight of frog of the unknown and the known standard, the minimum fatal dose of each being determined at the same time by injecting the properly diluted preparations into the abdominal lymph sacs of frogs of the same size and species and kept under the same conditions. The standard adopted for squill

1. The Journal A. M. A., Oct. 22, 1898.
2. Further details of this method of assay will be found in the 1905 edition of the National Dispensatory, page 1728.

has been a fluid extract prepared according to the seventh edition of the United States Pharmacopeia from first-class drug, and possesses the average physiologic activity of several fluid extracts produced from different lots of drug, made by the same formula.

Records for the past two years show that the strength of fluid extract of squill (U. S. P., 1890), as it is obtained from the manufacturer, fluctuates between 30 and 140 per cent. of the standard. Usually the activity of the percolate has been found to approximate the strength of the standard within 10 per cent., in this respect being much more uniform in activity than similar preparations of digitalis, which have been found to fluctuate between 50 and 300 per cent. standard.

Immediately after the issuance of the eighth edition of the United States Pharmacopeia, a commercial lot of fluid extract of squill was made according to the new formula which differs so radically from that previously employed. Some difficulty was experienced in making the percolate, and the final product when physiologically assayed was found to possess about 30 per cent. of the activity of the standard. At first it was thought that the drug was not completely exhausted and repercolation was resorted to, but subsequent tests showed that the physiologic action of the second percolate was not materially more active than the first (Table 1).

TABLE 1.—Fluid Extractum Scillae, United States Pharmacopeia, 1900. Percolated and Tested October, 1905.

Cage.	No.	Weight.	Dose per gm.	Result.
		STRENGTH OF UNKNOWN.		
6	1	29 gms.	.0016	Lived.
6	2	27 gms.	.0018	Lived.
6	3	32 gms.	.0020	Lived.
6	4	22 gms.	.0024	Lived.
6	5	24 gms.	.0028	Lived.
7	1	28 gms.	.0035	Lived.
7	2	30 gms.	.0040	Lived.
7	3	25 gms.	.0045	Lived.
7	3	25 gms.	.0045	Lived.
7	4	26 gms.	.0050	Died.
7	5	31 gms.	.0055	Lived.
8	1	31 gms.	.0045	Lived.
8	2	25 gms.	.0050	Lived.
8	3	35 gms.	.0055	Died.
8	4	31 gms.	.0060	Died.
8	5	32 gms.	.0065	Died.
		STRENGTH OF STANDARD.		
4	1	23 gms.	.0010	Lived.
4	2	25 gms.	.0012	Lived.
4	3	26 gms.	.0014	Lived.
4	4	23 gms.	.0016	Died.
4	5	28 gms.	.0018	Died.
5	1	23 gms.	.0012	Lived.
5	2	25 gms.	.0012	Lived.
5	3	28 gms.	.0014	Died.
5	4	22 gms.	.0015	Died.
5	5	27 gms.	.0016	Died.

Table 1.—Minimum fatal dose of standard .0015; minimum fatal dose of fluid extract being assayed between .0005 and .0055. The dose was not closely determined as the product was much below strength, and it was deemed advisable to fortify it by continuing percolation.

It seemed desirable as a check to examine the product of several reputable firms. Accordingly there was obtained on the open market the fluid extract of squill from three different houses made according to the new and the old formulæ. These were assayed as above, except that the end results were checked more closely (Table 2).

The names of these manufacturers are not given for obvious reasons, being designated simply by the letters A, B and C.

TABLE 2.—Comparative Strength of Fluid Extract of Squill Bought on the Open Market.

	U. S. P., 1890. Menstruum 75 per cent. alcohol.	U. S. P., 1900. Menstruum about 10 per cent acetic acid by weight
A	25 p. c. as active as standard.	44 p. c. as active as standard.
B	100 p. c. as active as standard.	53 p. c. as active as standard.
C	135 p. c. as active as standard.	50 p. c. as active as standard.

Sample A, United States Pharmacopeia, 1890, for some reason, probably owing to poor drug or imperfect extraction, is the least active alcoholic fluid extract of squill that has ever come to my attention. It is of therapeutic interest likewise to note the great variation in the activity of both the 1890 and 1900 preparations.

In order to be more certain of the results obtained from the use of the menstrua, four experimental lots of fluid extract of squill were made, two according to the United States Pharmacopeia, 1890, and two according to the United States Pharmacopeia, 1900, all from the same drug, extreme care being taken that the directions given be followed exactly so far as possible. No special difficulty was experienced in employing the alcoholic menstruum, but in the case of the acetic acid, after repeated trials, it was found absolutely impossible to percolate the drug according to the directions given, suction being finally resorted to in order completely to exhaust the drug (Table 3).

TABLE 3.—Comparative Strength of Fluid Extract of Squill Prepared from the Same Lot of Daug According to the United States Pharmacopeia of 1890 and 1900.

1, U. S. P. 1890, 140 per cent. as active as standard fluid extract.
2, U. S. P. 1890, 140 per cent. as active as standard fluid extract.
3, U. S. P. 1900, 60 per cent. as active as standard fluid extract.
4, U. S. P. 1900, 60 per cent. as active as standard fluid extract.

It may be observed that activity of both products is high as compared with the results given in Table 2. This probably is due to the great care exercised completely to exhaust the drug and to the high quality of the drug.

In order to meet any objections that might be offered against the results as shown by the special method of assay employed, the work was checked by experiments on dogs showing the comparative activity of the two products in producing changes in the blood pressure, which is perhaps the most characteristic physiologic action of the members of the digitalis series (Tables 4 and 5 and Figs. 1 and 2).

Experiment No. 8, Nov. 22, 1905 (Charts 1 and 2).

Dog, weighing 14 kilos, was anesthetized with chloretone and morphin. A manometer tube was connected with the right carotid; the time-marker recorded seconds.

At 10:45 a. m. the pulse rate was 100, blood pressure 46 mm., mercury, respiration 8.5 a minute. At 10:45.5 a. m., 0.3 c.c. of fluid extract of squill (U. S. P., 1890), diluted to 5 c.c. with physiologic salt solution, was slowly injected into the femoral vein.

At 10:46.5 a. m. pulse rate was 102 blood pressure 54 mm., mercury, respiration 8.

At 10:51.5 a. m. pulse rate was 96, blood pressure 55mm., mercury, respiration 7. The dog was kept quietly in place on the table until 2:40 p. m., when the experiment was repeated.

At 2:40 p. m. pulse rate was 116, blood pressure 48 mm., mercury, respiration 5.5 a minute.

At 2:41 p. m. 0.3 c.c. of fluid extract of squill (U. S. P., 1900), diluted to 5 c.c. with physiologic salt solution, were injected into the femoral vein.

At 2:41.5 p. m. pulse rate was 124, blood pressure 50 mm., mercury, respiration 8.

At 2:46.5 p. m. pulse rate was 138, blood pressure 45 mm., mercury, and respiration 11.

In this experiment particular notice should be given to the tracing (Fig. 1), which shows more strongly than words that the 1900 preparation produces very slight digitalis action. It may be objected that this animal was kept on the table until it was exhausted before the second part of the experiment was continued. Table 5 gives similar results, but is not open to this objection, as the animal received an injection of the 1900 product when first put on the table.

Experiment No. 10, Nov. 23, 1905 (Charts 3 and 4).

Dog, weighing 12 kilos, was anesthetized with chloretone and

morphin; a canula was inserted in the right carotid; no attention was paid to respiration.

At 8 46 a. m. pulse rate was 102, blood pressure 47 mm., mercury.

At 8:46.5 a. m. 0.3 c.c. of the fluid extract of squill (U. S. P., 1900), diluted to 5 c.c. with normal salt solution, were injected into the femoral vein. It at once produced a transient fluctuating rise in blood pressure, which subsided very quickly to normal.

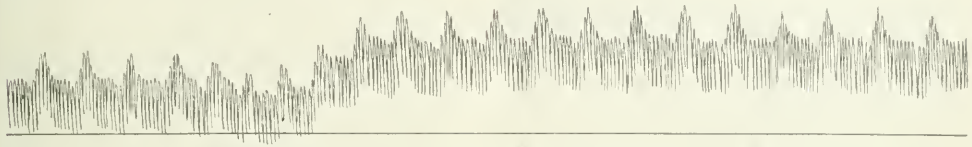
At 8:48 a. m. pulse rate was 104, blood pressure 46 mm., mercury.

At 9:15 a. m. pulse rate was 98, blood pressure still 46 mm.

At 9:20 a. m. pulse rate and blood pressure were the same as at 9:15. Fluid extract of squill (U. S. P., 1900), 0.3 c.c., was injected as before.

At 9:22 a. m. pulse rate was 100, blood pressure 52 mm., mercury.

At 9:27 a. m. pulse was 94, blood pressure 50 mm., mercury.



Pulse rate 100
Blood pressure 46 mm.
Respiration 8.5 a minute.
10:45 a. m.

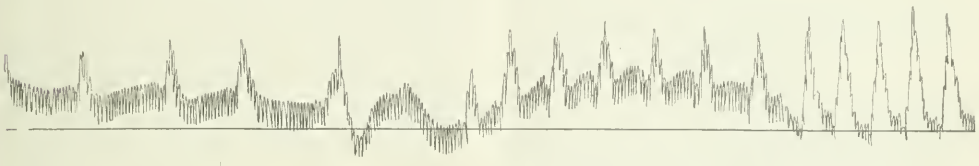
Finished injection into femoral vein .3 c.c. Fluidextractum Scillæ (U. S. P., 1890) diluted to 5 c.c. with physiologic Saline solution. Injected very slowly. 10:45½ a.m.

Pulse rate 102
Blood pressure 54 mm.
Respiration 8 a minute.
10:46:5 a.m.

Pulse rate 96.
Blood pressure 55 mm.
Respiration 7 a minute.
10:5:15 a. m.

Seconds

CHART 1. Experiment No. 8. Nov. 22, 1905. Dog wt., 14 kilos. Anesthetic chloretone and morphin.



Pulse rate 116
Blood pressure 48 m.m.
Respiration 5 5 a minute.
2:40 p. m.

0.3 c.c. Fluidextractum Scillæ (U. S. P., 1900) diluted as in Chart 1. 2:40 p.m.

Pulse rate 124
Blood pressure 50 mm.
Respiration 8+ a minute.
2:41 p. m.

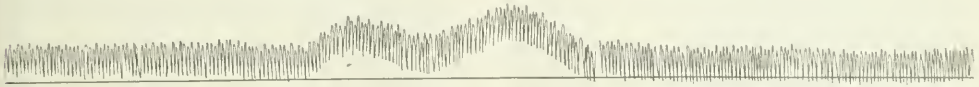
Pulse rate 138
Blood pressure 45 mm.
Respiration 11 a minute.
2:46.5 p.m.

Seconds.

CHART 2. Same dog as in Chart 1.

Normal tracing carotid

Canula in right carotid.



Pulse rate 102.
Blood pressure 47 m.m.
8:46 a.m.

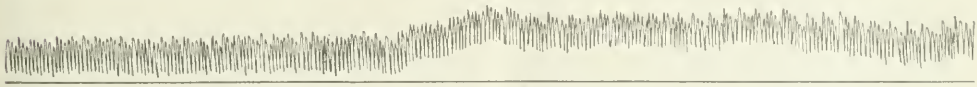
Finished injecting 0.3 c.c. Fluid extractum Scillæ (U. S. P., 1900) diluted to 5 c.c. with physiologic saline solution in femoral vein. 8:46.5 a.m.

Pulse rate 104.
Blood pressure 46 mm.
8:48 a.m.

Pulse rate 98.
Blood pressure 46 mm.
9:15 a.m.

Seconds.

CHART 3.—Experiment No. 10. Nov. 23, 1905. Dog wt. 12 kilos. Anesthetic, chloretone and morphin.



Pulse rate 98.
Blood pressure 46 m.m.
9:20 a.m.

Finished injecting 0.3 c.c. Fluidextractum scillæ (U. S. P., 1890) diluted to 5 c. c. with physiologic saline solution.

Pulse rate 100.
Blood pressure 52 m.m.
9:22 a.m.

Pulse rate 94.
Blood pressure 50 m.m.
9:27 a.m.

Seconds.

CHART 4.—Same dog as in Chart 3.

CONCLUSIONS

From these results we may conclude that acetic acid is not so satisfactory a menstruum as alcohol for making a fluid extract of squill. The therapeutic results obtained from the use of fluid extract of squill (United States Pharmacopeia, 1900.) will be variable and considerably less than would be expected from the use of the 1890 preparation. It would seem desirable that physicians in prescribing squill should indicate that they desire the preparation of the United States Pharmacopeia. 1890, when they wish to obtain the usual therapeutic action of squill.

130 Longfellow Avenue.

A CASE OF HEMORRHAGE FROM THE STOMACH, DUE TO CIRRHOSIS OF THE LIVER, IN WHICH GASTROENTEROSTOMY WAS DONE ON THE SUPPOSITION THAT THERE WAS GASTRIC OR DUODENAL ULCER.*

WILLIAM J. TAYLOR, M.D.

Attending Surgeon to the Orthopedic Hospital and Infirmary for Nervous Diseases, and to St. Agnes' Hospital; Consulting Surgeon to the West Philadelphia Hospital for Women.

PHILADELPHIA.

NARRATIVE OF CASE.

Patient.—A man of 40 years of age, of rather medium height and weight, family history negative.

Previous History.—There was no tendency to tuberculous or other constitutional disease, and he had never had syphilis. He had always enjoyed good health, was a steady, hard worker in an office where he had large business responsibilities, and he took unusually good care of his health. He lived in the country, where he walked, and rode a bicycle. He ate plain food and never touched liquor or tobacco. About thirteen years previously he had had a severe attack of typhoid fever with very high temperature, but from this he made a complete recovery. His wife said that he had never been ill, and had never taken any medicine beyond an occasional dose of calomel for his liver, which at times had been torpid. He was a dark brunette with rather sallow skin, but his three children have about the same color and appearance.

History of Present Illness.—During the past summer he had great anxieties and business cares involving much additional care and responsibility, and for this reason, he told me, he had been particularly careful of his own health, lived on the simplest kind of food, had special bottled milk brought to his office which he drank between meals, as a precaution against letting his health run down. He could not recollect having had the slightest indigestion or any symptoms referable to his stomach.

Hemorrhage.—On Sept. 21 he reached his home in the country at 10:30 p. m., having been hard at work in his office in the city until late, and went out to the toilet in the yard. He strained quite hard at stool and then came in through the kitchen, which had been closed up and was very hot. He felt nauseated, picked up a basin, and vomited a large amount of blood, which, by actual measurement, was a quart and a pint.

Treatment.—His wife, hearing him come into the house but not in from the kitchen, went to look for him, and got to him just at the end of the vomiting attack. He was so weak that she put him down flat on the kitchen floor, and his pulse disappeared entirely from the wrist. His wife, who is a physician, gave him strychnin and ergot hypodermically. His little daughter had been ill with typhoid fever and there was in the house and ready a sterile salt solution with apparatus for intracellular infusion. This his wife got at once and pumped into him one quart of the solution, aided by a trained nurse who was in the house, and then she summoned other assistance. Undoubtedly the man would have died from the loss of blood if this plan of treatment had not been instituted so promptly. Some of the saline solution was also injected into the bowel, and after its use brownish-red blood came away.

Subsequent History.—Conditions improved, and in about two hours he was lifted by two men and carried into the next room and laid flat on his back on a mattress on the floor. In less than half an hour he had another severe hemorrhage from the stomach, vomiting without effort one quart and half a pint of blood. His collapse was most profound, and Dr. T. Branson, who had been hastily summoned, and Dr. McCollin gave him strychnin and ergot hypodermically, and thirty drops of adrenalin (repeated in an hour) was given by the mouth. Morphin was also administered. His condition was so bad and his weakness so profound that they could not remove his outer clothing, and he was kept flat on the floor for five days. He was seen at this time also by Dr. Musser, who agreed in the diagnosis of ulcer and advised that a gastroenterostomy be done. This was also urged by Dr. Branson, but Dr. John H. Gibbons, who saw him at the same time, was opposed to immediate operation.

At the end of five days the man was taken to the Bryn Mawr Hospital and kept under observation for two weeks. Nothing whatever was given him by the mouth and he was nourished entirely by the rectum. The bowel was irrigated daily with normal salt solution, and tarry evacuations persisted until about the twelfth day. Peptonized broth and other peptonized preparations were given every six hours. Malted milk enemata were tried, but were always expelled. For two weeks the man had no food by the stomach, and, while the rectum retained the nourishment introduced into it, he became cross, irritable and slightly delirious as the result of extreme hunger. He was taken back to his home on October 7, where I saw him for the first time on October 9.

On this date an enema was given, and after some straining he complained of distress and gas in the stomach and bowel. On inserting a rectal tube to carry off the gas the end became covered with tarry material and on irrigation more was found. No food was given by the mouth for twenty-four hours. The irrigations were dark-colored for five days.

The patient reacted well from this setback, but the anemia was much more marked. With cautious use of food by the mouth and rectal feeding his general condition improved very much and his color showed he was making blood fast.

On the morning of October 15 he awakened his wife, who was lying asleep on the foot of his bed, to tell her that he felt very uncomfortable in his stomach—he had a feeling of distension and nausea. Almost immediately he vomited a considerable quantity of blood, and during the day he passed tarry material from the bowel. This day he was brought in an ambulance to the city, where, after his arrival, he again vomited a little blood and had black, tarry stools.

Consultation.—Dr. M. J. Lewis saw him with Dr. McCollin and me in consultation. He was extremely pale, showing evidences of internal hemorrhage, although his pulse was fairly good. He had edema of the feet and fluid in the abdomen; but this we thought to be confined to the large bowel and was probably a collection of fluid blood. The heart's action, considering the profound anemia, was good. The kidneys were acting well and the spleen and liver did not seem to be altered in size from the normal. His temperature was slightly above normal. He had vomited some little blood the day before, and had passed, and was passing, dark, tarry material from the bowel. His condition was so extremely grave that we deemed it best to wait, if possible, for a few days before deciding on operation, to enable him to regain the ground lost from this additional hemorrhage. He was given adrenalin chlorid, strychnin and nourishment by the bowel.

Examination of Blood and Urine.—On this date the following examinations were made of the urine and blood:

Urine: Light amber, clear, no sediment, acid reaction; sp.

* Read before the College fo Physicians of Philadelphia, Feb. 7, 1906.

gr., 1023; no albumin; no sugar; centrifugated specimen contained only a few leucocytes.

Blood:

	Per cent.
Polymorphonuclear	58
Small erythrocytes	32
Large erythrocytes	4
Transitional	4
Basophiles	2
	100

Macrocytes and microcytes present.
Hemoglobin, 45 per cent.
Coagulation time, 3 1/3 minutes.
Microscopic:
Leucocytes, 2,400.
Erythrocytes, 1,280,000.
No malarial organisms.
Widal, negative.

Course of Disease.—The next day his general condition had decidedly improved. There had been no more vomiting of blood and no bloody stools. He did not appear so completely exsanguinated, although still very pale, and on October 19 Dr. Lewis again saw him with me in consultation, when we found his color better. He had also gained in strength, but there was still some general edema. For twenty-four hours he had taken some Valentine's meat juice by the mouth in addition to the rectal feeding.[1] There was little or no change in the physical condition since the last consultation, two days before, and not quite so much liquid in the ascending and transverse colon.

Operation.—Dr. Lewis again saw him with me early, October 21, and his condition had improved so much that we decided on immediate operation, and for this purpose he was taken to the Orthopedic Hospital and carried directly into the operating room. His condition was such that it was not deemed advisable even to take him in the elevator upstairs to a bedroom. Ether was given him by Dr. George W. Spencer, and the skin of the abdomen was shaved and prepared after he was on the operating table.

An incision was made through the right rectus muscle, and as soon as the peritoneum was opened there gushed out a large quantity of perfectly clear, straw-colored fluid. This escape of fluid was so marked that every one present who saw it immediately thought of the possibility of malignant disease and spoke of the necessity of a more careful examination of the abdominal cavity than a simple operation for gastric ulcer would ordinarily require. It was almost impossible to relax the belly wall without danger to his life from the anesthetic.

The vessels of the stomach and omentum were much engorged and resembled a colored diagram of an injected subject. The stomach was examined over its anterior surface, but no ulcer or induration could be detected. It was not dilated; indeed, it was smaller than normal. On the anterior or free border of the duodenum, about one and a half inches from the pylorus, was found a thickening of the gut wall about three quarters of an inch in its longest diameter, almond-shaped, not circular, and much unlike the surrounding surface. It was distinct in outline, but not hard or indurated, as would be the case in chronic ulceration, and this I took to be an acute ulcer, probably the site of the hemorrhage. There were numerous, very recent, easily separated adhesions about the duodenum, liver and mesentery. The edge of the liver was examined by the finger and by sight, but nothing abnormal was distinguished, and the gall-bladder seemed normal. There was nothing unusual in the portal space, and the pancreas seemed to be of normal size and consistency.

The omentum and colon were lifted up, a slit was torn in the mesocolon and with the finger, and the whole of the posterior surface of the stomach wall examined without finding any induration or evidence of ulceration. A posterior gastro-enterostomy with a short loop was then rapidly performed by Moynihan's method by clamps. Pagenstecher thread was used for both hemostatic and peritoneal sutures. The mucous membrane in the incision in the stomach and intestines was cut out with scissors. Owing to his weak condition and the profound shock caused by the operation no effort was made to suture the slit in the mesocolon to the stomach wall, although this was quite large.

There was nothing unusual in the technic of the operation, other than difficulty was experienced in pulling out the stomach sufficiently far to clamp it. A pint of normal salt solution was introduced into a vein in his left arm, and he was given strychnin and atropin hypodermically.

He reacted nicely from the shock of the operation and did not vomit. Nothing was given by the mouth for seventy-two hours, but during this time he was nourished by the rectum. Salt solution was also given by the bowel.

Postoperative History.—On the morning of the third day he had three small stools, the fecal matter coming out through a rectal tube; the first and second contained some few dark and very old bloodclots, mixed with the fecal matter, but from that time on there was no evidence of blood in the stools. There was no distension of the intestines nor disturbance of the stomach, and he was given first water and then Valentine's meat juice, and for some days was nourished in addition by the bowel.

On October 27, the sixth day, as his pulse, temperature and respiration were normal, he was given some scraped beef, a soft-boiled egg and toast by the mouth, without any discomfort following.

His color steadily improved and his strength increased, and on October 28, or just one week after the date of operation, his blood showed 52 per cent. of hemoglobin, 2,170,000 red cells and 2,800 white cells.

By the end of another week he was feeling perfectly well and was digesting all food most satisfactorily. Indeed, the only articles of food which showed any appearance in the stools were two grapes which he had swallowed apparently without chewing, and these had slipped from the stomach into the bowel. He had some edema of the feet and ankles.

On November 7, or three weeks after the operation, he was again seen by Dr. Lewis in consultation, when there was very marked edema over the whole of the body—the feet, ankles, genitalia, chest wall and even the forehead and cheeks. He was passing only a limited amount of water, although the urine showed no evidence of disease of the kidneys.

Urinalysis.—November 8.

Macroscopic: Light yellow, cloudy, slight flocculent sediment, acid reaction, sp. gr. 1017. No bile. No sugar. Faint trace of albumin.

Microscopic: Centrifugated specimen contains a great quantity of calcium oxalate crystals and leucocytes, with a number of epithelial cells.

Physical condition.—The abdomen was distended by fluid, so much, indeed, that his abdominal binder had to be let out several inches, and on a careful physical examination by Dr. Lewis free fluid was found in the pleural cavities, particularly so on the right side. At this time his blood count had improved. The spleen did not appear to be enlarged, neither did the liver seem to be contracted, although on this one point I have not a note made at the time; but the impressions of Dr. Lewis and Dr. McCollin, as well as my own recollection, all go to show there was no apparent diminution in the size of the liver. As the edema was very marked, we were fearful of some form of obstruction to the portal circulation.

Treatment.—We agreed that diuretics in the shape of Basham's mixture, with strychnin and careful feeding, would be the best plan of treatment, and considered that the edema might be accounted for by the extreme poverty of his blood. The amount of urine, which had been scant, increased under this plan of treatment by leaps and bounds until he was passing from 80 to 90 ounces of urine in twenty-four hours. The edema rapidly disappeared, the fluid apparently left the abdominal cavity, and he steadily improved in health and strength.

At the end of three weeks he was allowed to sit up in bed and to go out and about in a little over four weeks.

Blood Examination.—By November 22, or at the end of four weeks, an examination of the blood showed: hemoglobin, 55

1. On October 18, 1905, Dr. L. Webster Fox found considerable thinning of the choroid coat and retina. The remains of a hemorrhage between the optic nerve and macula were visible. The blood vessels in the neighborhood of the hemorrhage were enlarged. He had, also, high degree of myopia, for which Dr. Fox had refracted him in 1898.

per cent.; red cells, 2,810,000; leucocytes, 4,800. Cells were of good size and shape.

General Condition.—All this time his color was improving; he was eating and sleeping well, digesting his food perfectly, and his stools were normal in appearance and color. He became so well and strong that it was impossible to keep him away from his office, to which, at the end of seven weeks, he insisted on going with regularity, but keeping short hours and doing only a small amount of work.

PERIOD OF APPARENT RECOVERY.

On December 27, or at the end of nine weeks, he came to my office and reported that he had gained in weight, which was now 151½ pounds, or about his normal weight. All edema had been gone for weeks, and he had gained in strength. He was going to his office each day for a few hours and simply assuming direction of the work without doing any hard work himself. His digestion was perfect. A careful examination of the abdomen showed the scar to be in good condition. There was no distension of the abdomen and I did not detect any marked diminution in the size of the liver nor enlargement of the spleen, or did the superficial abdominal veins seem unduly prominent. He told me he had eaten a somewhat hearty and injudicious Christmas dinner, but that he had felt no ill effects from it. He did tell me, however, that he had had some dark stools, not the black stools seen so commonly in persons who are taking iron as he was doing, but brownish-black. Several of the stools were not homogenous as to color, but were partly dark and partly light. These dark and partly colored stools had somewhat alarmed his wife, and he came to see me largely to tell me about them and to relieve her anxiety. His general condition was so satisfactory that I did not attach very much importance to this symptom, and advised him merely to take food between his meals, to be careful as to the amount which he ate at any one time, and suggested that he eat only a few articles at each meal.

RELAPSE.

He did not feel well on January 1 and his wife noticed that he was paler than usual, and complained of discomfort in the stomach. He went into town after eating a simple breakfast, however, and went to his office where he remained until 2 p. m. He spent the remainder of the day at the house of a relative, but ate little and slept most of the afternoon, and then returned to his home in the country. He walked from the station to the house—about half a mile—and went to bed about 9:30 p. m.

Hemorrhage.—A little after midnight January 2 he awakened his wife, saying that he felt nauseated, and started for the bathroom but fell at the bedroom door, unconscious and pulseless. Almost immediately he passed by the bowel a large amount of blood, which was dark and contained numerous clots. In a few minutes he regained consciousness, called for a basin, and vomited a large quantity of dark blood and some few clots, showing that the bleeding must have been going on for some hours. The total amount of blood lost by the bowel and from the stomach must have been even greater than at the time of his first hemorrhage in September.

Subsequent History.—I saw him in about 4 hours, when his pulse was 96, full, quite strong, and of good volume. He was perfectly conscious but extremely blanched in appearance and was sweating profusely. He had no more hemorrhages that day and passed a very good night, but about 11 a. m. January 3 he had another hemorrhage which was bright red in color and contained also a few old currant-jelly like clots. He was still further blanched in consequence of this hemorrhage but reacted very well from it, and his pulse, while rapid, had a good volume.

On Jan. 3 his pulse was very fair but he was terribly blanched; his abdomen was scaphoid with no distension whatever; there was no enlargement that could be detected of the spleen; but the liver dullness was greatly diminished—so much so that it did not come anywhere near the edge of the ribs. There was no distension of the abdomen nor any possibility of intestine floating over the edge of the liver and thus obscuring its outline. Certainly there was some condition present producing portal congestion and Dr. Gibbons and I both believed him to be suffering from an acute cirrhosis of the liver.

On January 4 Dr. Lewis saw him with us again in consultation and now the diminished size of the liver was very apparent, but not so easily demonstrated as the day before, for the large bowel was filled with blood from further hemorrhage. Early on the morning of January 5 he steadily grew worse, had another hemorrhage and bleeding constantly from the bowel until he died on the night of January 6.

On this day a blood count showed: Hemoglobin, 14 per cent.; red cells, 1,300,000; white cells, 16,000.

AUTOPSY.

A postmortem was performed Jan. 7, 1906, by Dr. Longcope.

Anatomic Diagnosis.—Atrophic cirrhosis of liver; enormous dilatation of veins along the greater curvature of stomach near the cardia, with erosion of mucous membrane of stomach, and hemorrhage. Gastroduodenostomy; adhesions between omentum and anterior parietes; slight ascites and rightsided hydrothorax; edema and congestion of the lungs.

General Appearance of Body.—The body was 168 cm. in length with marked rigor mortis. There was very slight postmortem lividity over dependent parts. The mucous membranes and skin surfaces were exceedingly pale, and there was slight edema of the forehead and a suspicion of edema of the ankles. On the right side of the abdomen there was a linear scar 12 cm. in length, extending up from the umbilicus; it was completely healed. On incision the subcuticular fat was found present in fair amount and light yellow in color. The muscles of the thorax were red; those of the abdomen much paler. On opening the abdominal cavity the omentum was found to be adherent to the anterior parietes immediately beneath the abdominal wound and for some distance to the right of it. The adhesions were fat and contained a number of blood vessels, some of which were almost as large as a match stick. The area of parietal peritoneum covered by adhesions measured 7.5 cm. in length by 6 cm. in width. The liver was just visible to the right of the xiphoid cartilage. The urinary bladder was greatly distended. The abdominal cavity contained a small quantity of almost colorless, clear fluid. The intestines were bluish-gray in color, distended, and the serous surfaces were everywhere moist, smooth, and glistening.

Thorax.—The lungs were voluminous and met in the middle line. The left lung was bound to the chest wall by numerous delicate fibrinous adhesions. There was no fluid in the left pleural cavity; the right pleural cavity contained about 200 c.c. of very pale, clear fluid. The pericardial cavity contained a slight excess of clear fluid. The serous surfaces were smooth and glistening.

Heart.—The epicardium was smooth; there was a moderate amount of fat; the cavities contained pale firm clots and fluid blood; the muscle was exceedingly pale and yellowish in color, rather soft. The left ventricle was found to be 10 to 12 cm. in thickness. The valves were normal with faint thickening at the base of the aortics. The coronary arteries were delicate and patulous. The aorta was smooth and rather narrow.

Lungs.—The left lung was very large and heavy. The pleura was covered with fibrous tags, and there were small hemorrhages over the pleura. On section the cut surface oozed quantities of frothy fluid. The surface was smooth and pale pink; air was present throughout. Bronchi at the root of the lung contained frothy fluid; the vessels were clear. The right lung was exactly like the left except that the pleura was free from fibrous adhesions.

Spleen.—The spleen measured 17x11.5x6.5 cm. and was much enlarged, very soft, exceedingly pale, pinkish mottled with purple. It was regular in outline. The capsule was much thickened but free from adhesions. The pulp was exceedingly pale and very soft, with extensive coarse reticulation. Between the reticular bands the pulp was depressed and the space seemed only partially filled. There were adhesions between the gall-bladder and hepatic flexure of the colon, so that the gall-bladder and hepatic flexure were covered by a continuous coat of peritoneum. All the vessels were normal in the portal space.

Liver.—Weight, 1070 gm.; size, 23x14x9 cm.

The liver was quite small, slightly irregular and very firm. The capsule showed some irregular thickening and through it injected blood vessels were seen. There were no adhesions. The surface was finely granular. The inferior surface was much more coarsely granular and in places there were deep pittings. The color was a tawny yellow. On section the cut surface was seen to be rough and presented a very irregular, coarsely granular appearance, producing an artificial lobulation. Between the lobules there were tiny depressed lines, pinkish in color. The portal connective tissue was much increased and filled with small injected blood vessels. Many of the bile ducts were also injected with bile. The gall-bladder was fairly large and covered posteriorly with adhesions. It contained thick, dark green bile. The bile ducts were patent.

Kidney.—Size of the left kidney was 11x5.1 cm. The kidney was of medium size, regular and decreased in consistency. The capsule stripped well, leaving a smooth pale yellowish gray surface. On section the cut surface showed great pallor. The cortex and medulla were in good proportion. The medullary pyramids were regular and pale pink. The cortex was regular and pale yellowish, the striæ were very poorly seen, but when visible appeared to be regular. The glomeruli were invisible. The cortex varied from 5 to 7 mm. in thickness. The pelvis appeared to be normal.

Pelvic Organs.—The urinary bladder, prostate, testes and seminal vesicles were not examined.

Stomach.—The stomach was fairly large. At a distance of 8 cm. from the pylorus, an anastomosis was found between the stomach and the loop of duodenum a few cm. from where it entered the peritoneal cavity. The point of anastomosis was on the posterior wall just posterior to the attachment of the omentum to the greater curvature. All about the line of anastomosis there was much fat which was attached to the wall of the stomach and duodenum and hid the line of anastomosis. On opening the stomach much dark brownish-black grumous fluid escaped, together with some blackish blood clots. The mucous membrane was pale, thin, and showed toward the fundus some mammillation. The opening between the stomach and the duodenum was beautifully smooth, the edges were round, and one could scarcely tell where stomach mucosa stopped and mucosa of duodenum began. A suture still hung free from the line of anastomosis. There was a loop of tough black string 6 cm. in length. The ends of the loop emerged from exactly opposite sides of the wound and hung free in the stomach. Attached to the dependent part of the loop there was a mass of soft greenish-black material about the size of an almond, but with stringy margins looking something like a bunch of seaweed. On the peritoneal surface of the stomach along the greater curvature and about 5 cm. from the cardia there was a bunch of tortuous enormously dilated veins, which covered an area about 7 cm. in diameter. They were collapsed, but some of them seemed as large as a thumb. The mucous membrane and wall of the stomach covering them was exceedingly thin and the tortuous vessels showed through the mucous membrane and appeared to run in a ring 5 cm. in diameter. At one point over the veins there was a tiny erosion in the mucous membrane about 2 mm. in diameter. On injecting the veins with Berlin blue the coloring matter escaped from this tiny erosion, but from nowhere else in the mucous membrane. About the cardiac end of the esophagus there was another small varix. The largest single veins there were about the size of a slate pencil. Fluid injected into these veins did not escape through the mucous membrane. The veins anastomosed with the vessels along the lesser curvature of the stomach. The splenic and mesenteric veins were enormously dilated and showed many anastomoses.

Other Abdominal Organs.—The duodenum was apparently normal. The mucous membrane of the first portion of duodenum was delicate. There were no scars or ulcers. The pancreas was apparently normal. The other organs were not examined.

HISTOLOGIC EXAMINATION.

Heart.—Sections of this organ show a good deal of fat in the pericardium. The myocardium is edematous; in patches the fibers show a fine fatty degeneration. The striæ are not well-marked and there is much fragmentation.

Spleen.—Sections of the spleen show chronic interstitial splenitis. The capsule is thickened. The pulp spaces are empty and collapsed. There is marked general increase in connective tissue with great thickening of the trabeculæ and thickening of both media and intima of blood vessels. The Malpighian bodies are very small and in them, too, there is an increase of connective tissue.

Liver.—Sections of the liver show interlobular cirrhosis. There is marked increase of connective tissue of the portal spaces, cutting the section into coarse lobules. This is very slightly cellular and there is slight, if any, increase in bile ducts. The liver cells are generally granular and show some fatty degeneration. In certain localized areas the liver cells are very large, pale, finely granular, and contain sometimes two or three nuclei. The capillaries about the central veins are large but empty.

Kidney.—Sections of the kidney show extensive degeneration of the epithelium, and some slight increase in connective tissue of cortex. The tubular epithelium shows the most extreme grade of degeneration in patches. The cells are granular, frayed, often desquamated, and the nuclei refuse to stain. Some tubules contain large fat droplets. The ascending loops of Henle are particularly affected. There is no cellular infiltration.

DISCUSSION OF CASE.

The great interest in this case centers, of course, in the diagnosis and in the probable cause of the development of cirrhosis of the liver.

Here was a man, 40 years of age, who had lived a most simple and exemplary life, and who had never taken alcohol in any form, had never had syphilis, nor any tendency, either inherited or acquired, to tuberculosis or other constitutional disease. At the time of operation, as soon as the peritoneum was opened and the clear serum gushed out, doubt as to the accuracy of the diagnosis of acute ulcer of the stomach was at once entertained by all present, and for this reason a more careful, although very rapid, examination was made, by sight and touch, of all of the organs within easy reach. The edge of the liver was seen, and it did not present any gross changes such as would have suggested cirrhosis, and the finger, passing over its anterior surface, did not detect any roughness. The other organs were normal in size and consistence, but I thought, and, indeed, those present believed with me, that there was a distinct ulcer on the free border of the duodenum about one and one-half inches from the pylorus. Here was a spot a little less than an inch in diameter and rather oblong in shape, which was different in color from the surrounding gut; it was indurated, and in grasping it with the fingers gave the sensation of thickening of the intestinal wall, such as is noticed in the very early stages of ulceration of the intestines in typhoid fever. There was, however, no marked induration, such as would have been present if there had been an ulceration of long standing, and not only my assistant, Dr. Macy Brooks, but also Dr. Morris J. Lewis, agreed with me in thinking that this was probably the site of the hemorrhage.

The examination of this place in the gut after death did not disclose any true ulceration; all induration and thickening had disappeared, but at this point the mucous membrane seemed somewhat less thick and its surface had a slight difference in appearance from the surrounding mucous membrane. This was certainly not a healed ulcer. Indeed, it could not have been an ulcer at all; but it must have been an area of hyperemia which, if the gastroenterostomy had not been performed, might have become an ulcer. It is possible, however, that this might simply have been a muscular spasm of a limited portion of a wall of the gut.

The operation of gastroenterostomy was of the most signal benefit by providing drainage for the stomach, thus greatly lessening the local congestion and consequent hemorrhage. The patient was able almost immediately to digest freely a variety of foods in normal amount, and all hemorrhage, both by mouth and bowels, ceased at once. The omentum attached to the parietal peritoneum directly beneath the scar in the belly wall was most happy in its effects; the large blood vessels in it permitted the portal stasis to be greatly relieved, thus accomplishing by accident that which is attempted in Talma's operation.

Our error in diagnosis was very great, but the results accomplished in respect to comfort to the patient—ten weeks of perfect relief from all hemorrhage—somewhat atoned for our mistake.

The details of differential diagnosis between this and other forms of portal congestion and the various forms of ulceration of the stomach and intestines must be left largely to the medical diagnostician in consultation in the case; but I did not give sufficient prominence, in forming my diagnosis, to the sudden and violent hemorrhage occurring without any antecedent symptoms of disorders of digestion, and without there being any pain either before or after its occurrence. While the absence of pain and the sudden overwhelming hemorrhage are all in favor of portal obstruction rather than definite ulceration, yet many cases of acute ulceration are reported by Moynihan and other writers of large experience where all other symptoms referable to the stomach have been wanting.

This somewhat lengthy report is made in the hope that much may be gained in the discussion of the details of this extremely interesting case, and because we have been most fortunate in having had an autopsy made by such an expert pathologist as Dr. W. T. Longcope. I wish to thank him again for the most careful and painstaking manner in which this examination was made.

REVIEW OF LITERATURE.

Dr. R. B. Preble,[2] Chicago, has collected reports of sixty cases of fatal gastrointestinal hemorrhage due to cirrhosis of the liver, all that had been reported in literature up to that date. The most common cause was varices of the esophagus. In the great majority of the cases the cirrhosis was atrophic. In one-third of the cases the first hemorrhage was fatal, and in the other two-thirds the hemorrhages continued at intervals over a period varying from a few months to several years, the maximum time being eleven years. His conclusion is that in one-third of these cases the diagnosis can be made at or before the time of the first hemorrhage; in the other two-thirds the diagnosis can not be made at all, or only after months or years, during which time other symptoms of cirrhosis have developed.

Esophageal varices were present in 80 per cent. of the cases. In only 6 per cent. in these cases which showed esophageal varices was the cirrhosis typical.

One death was due to erosion of veins in the stomach near the cardia. He states that these veins in the cardiac end of the stomach are part of the portal system, while those of the esophagus are part of the systemic system; that they connect by anastomotic branches, which, as a rule, are too small or two few to contribute much to the formation of a collateral circulation when the portal system is obstructed; when, however, the anastomosis is free they become an important factor, and their dilatation may so completely compensate for the veins obstructed in the liver that the clinical course of the case is altered and obscured.

The compensation may be so complete that all the clinical symptoms on which a diagnosis of cirrhosis of the liver must depend, namely, the splenic tumor, the ascites and the subcutaneous abdominal varices, are wanting, and the patient, while apparently in good health, dies suddenly from hemorrhage from the stomach. Hemorrhage was the first and only symptom in ten out of thirty-five of these cases. Two patients whom he mentions, a man of 45 and a woman of 22, were both perfectly temperate in their habits, with no previous history of any predisposition toward cirrhosis, and in both a diagnosis was made of ulcer of the stomach, but the autopsy demonstrated that the stomach and intestines contained no lesions whatever.

2. Am. Jour. Med Sciences, March, 1900, p. 263.

THE ULTIMATE RESULTS OF KIDNEY FIXATION.*

J. H. CARSTENS, M.D.
DETROIT, MICH.

As a more or less movable kidney seldom occurs without other morbid conditions of the body, it is often very difficult to tell which of the various symptoms found in a case are produced by the movable kidney and which are produced by the other pathologic condition; therefore, the controversy about the symptomatology and the relief obtained in fixing movable kidneys.

My object in writing this paper is to help clear up some of the points at issue, and I have taken my own experience as a basis from which to draw conclusions. I have gone back five years—to July 1, 1900—and selected all those cases operated on in which the kidney was apparently the only trouble and in which there were no other serious complications or only such other light operations required as curettage, hemorrhoids and catarrhal appendicitis, etc. Cases in which complicated operations were required, such as gall-bladder operations, abdominal hysterectomies, etc., have been excluded as not proper for this inquiry. All other conditions not requiring surgical interference, such as the digestive symptoms, nervous symptoms, pain in the back in the region of the kidney, were considered and taken note of. The patients that came to me sometimes knew they had a movable kidney, sometimes they did not, but in either case they were suffering from the following symptoms:

A feeling of distress and pain was experienced on the afflicted side, in every case the right except one. There was more or less distress. When standing or when lifting anything they would often have a severe colicky pain, which they had generally learned to relieve by forced expiration of the air from their lungs, by bending forward and twisting their body in a peculiar manner, each finding his or her own way of being relieved. Perhaps they would have no trouble for days and weeks at a time. Some of the patients would notice a swelling or lump in the side that would disappear when lying on their back. They would consult their physician and the diagnosis was made.

In nearly every case there was a disturbance of digestion, especially of the intestinal variety, accompanied by bloating; in fact, many patients complained only of that, and on investigation a loose kidney was found.

* Read before the Tri-state Medical Society, Michigan, Indiana, Ohio, Jan. 9, 1905.

Nearly all patients lost flesh, whether they knew what the trouble was or not. The nervous disturbances were well marked in nearly every case. They can be probably best described by calling the condition neurasthenia, which, of course, varies so much in symptoms, more or less severe as hysteria. In general I may say these patients suffered from that indescribable nervousness and restlessness which we find in irritation and disturbances of the sympathetic system of nerves, often accompanied by hypochondriasis and despondency. There was no severe pain or distress in any cases except in those in which I assumed there was a kinking or twisting of the ureter.

In order to get at the ultimate result I wrote out a circular, which I sent to the patient and also to the family physician, expecting thus to hear from one or the other, if not from both, and get the report of the largest number of cases. As already stated, I carefully selected those cases in which I thought the kidney was at the bottom of the trouble. For the five years mentioned the patients number thirty-two, and I received answers from fourteen patients and eighteen answers from the physicians. There were some duplicates. In six instances personal examination was made. The facts in each form the basis of this article.

In the circular letter I asked the following questions:

1. *Has the kidney remained in place?*
2. *Has the pain and distress been relieved?*
3. *Have the stomach and digestive symptoms improved?*
4. *Have any other symptoms of pain or distress been relieved?*

The object of the first question was to find out whether my present technic was perfect. Apparently there has been only one failure which required a second operation. I shall take up the question of technic at some future time. The object of the second question was to find out whether the pain and distress caused by the kidney itself has been relieved. The object of the third was, "Did a floating or movable kidney really produce digestive disturbances?" The fourth was simply put in to get the general results.

CONDENSED REPORT OF CASES.

CASE 1.—Miss A. C., aged 24. Operation Feb. 24, 1900. Family physician wrote: "Yes, is married and has a baby; moved away."

CASE 2.—Mr. F. Operation Sept. 3, 1900. All questions answered "Yes" by family physician. "Works hard."

CASE 3.—Dr. C., aged 28. Operation Nov. 10, 1900. Seen one year later; feeling good.

CASE 4.—Mrs. W. D. J., aged 30. Operation April 15, 1901. First question answered "Yes"; second, "Not entirely; never had digestive trouble; still has dysmenorrhea."

CASE 5.—Mrs. E., aged 26. Operation May 7, 1901. Reported by her physician, who answers all questions with "Yes" and adds: "Her health is better now than it has been for the last ten years."

CASE 6.—Mrs. J., aged 25. Operation July 26, 1901. There was a small ovarian cyst which I removed through the vagina and fixed the kidney in place. Her doctor answers all questions "Yes" and adds: "She has been in good health ever since."

CASE 7.—Mrs. S., aged 25. Operation Oct. 1, 1901. Patient had floating kidney, result of a fall apparently. Her doctor answers all questions "Yes" and adds: "Delivered her of a child two years after operation."

CASE 8.—Mr. G., aged 25. Operation Jan. 27, 1902. I operated on in August, 1901, with an *en masse* suture through the kidney of silkworm gut. When he went to work it came down again, and this time I sewed the resected capsule to the muscle. He has worked hard at farming ever since and writes: "Digestion very much better."

CASE 9.—Miss M., aged 17. Operated Oct. 29, 1902. When lifting a very heavy trunk she noticed something giving way and I found the kidney the only trouble. Stitched in place and her family physician reports by answering all question "Yes."

CASE 10.—Miss M. G., aged 21. Operation March 7, 1903. Physician answers: "Kidney not in proper place, but fixed a great deal better than before." To third question: "A great deal; she can do a good deal of work."

CASE 11.—Mrs. M., aged 29. Operation Jan. 8, 1903. Only trouble floating kidney. All questions were answered "Yes."

CASE 12.—Miss L., aged 16. Operation Feb. 21, 1903. Both kidneys floating. All questions answered "Yes" by her family physician, who adds: "Recovery was slow, but progressive. The girl is now comparatively strong and healthy. It took about a year for complete recovery." She writes: "The kidney has remained in place and I am real well and working every day."

CASE 13.—Mrs. H., aged 27. Operation April 15, 1903. Curetted for endometritis and floating kidney fixation. Report from family physician answers all questions "Yes," which she repeats, but complains of bladder.

CASE 14.—Miss J. K., aged 17. Operation April 30, 1903. Had appendicular colic and floating kidney; could not tell which was most distressing. Removed appendix and stitched kidney in place. She has been perfectly well since.

CASE 15.—Mrs. C. Operation June 30, 1903. Floating kidney with torsion and attacks of severe pain. Kidney fixed in the usual manner. I found liver large and made a small exploratory opening, looking for gallstones, but found none; fixed the coronary ligament to the lower angle of the wound. Family physician answers all questions "Yes" and adds: "She has had no more severe attacks of pain and is much improved."

CASE 16.—Miss D., aged 24. Operation Feb. 14, 1904. A very hysterical patient. Kidney fixation only. Excepting the last she answers all questions "Yes."

CASE 17.—Mrs. G., aged 27. Operation Feb. 27, 1904. Fixed right kidney and double decapsulation for albuminuria. Kidney in place and much improved for six months. Left the city and address not known.

CASE 18.—Mr. S., aged 27. Operation March 23, 1904. Double kidney fixation. All questions answered "Yes." Personal examination.

CASE 19.—Mrs. C., aged 36. Operation Dec. 15, 1904. All questions answered "Yes."

CASE 20.—Mrs. W., aged 45. Operation Aug. 1, 1904. First case of left kidney fixed in place. Her family physician answers all questions "Yes" and adds: "Some distress and nervous symptoms have been relieved." She also answers herself in the same way.

CASE 21.—Miss C., aged 35. Operation Aug. 30, 1904. Patient was suffering from severe dysmenorrhea, for which I inserted a stem pessary and fixed the kidney. The stem pessary dropped out soon after. Her family physician reinserted one lately. He reports kidney still in place. To the second question he answers: "Not entirely." To the third question, "No," and adds: "There was considerable improvement for two or three months and then relapse." Her present condition evidently due to the dysmenorrhea.

CASE 22.—Mrs. G., aged 31. Operation Dec. 15, 1904. Neurotic patient. She answers: "Yes, the kidney is in place; has been relieved of pain and distress, but gradually had return of her headache." To the third question she answers: "Yes, but suffering from constipation." To the fourth question, "Yes."

CASE 23.—Miss T., aged 30. General ptosis. Operation April 25, 1905. The right kidney seemed to cause much trouble; both kidneys fixed. Answers first and second questions "Yes" and adds: "Must still wear abdominal belt. Stomach does perfect work; bowels still give trouble."

CASE 24.—Mrs. B., aged 47. Operation June 10, 1905. Kidney in place. She is the first patient who complains of pain in the region of the incision; perhaps it was pulled up a little too tight. She had other troubles and really does not belong here, but is mentioned on account of pain in the incision.

CASE 25.—Miss P., aged 28. Operation May 28, 1905. Neurotic. When examined four months later kidney was in place and patient had gained five pounds. She walks four to five miles a day. She is not relieved of general abdominal ptosis.

Since reading this paper I saw a patient on whom I operated

five years before and who had not received my letter. She had been perfectly well and worked hard during this time until three months ago, when she again had pain in the right side, which increased. I found the kidney movable, evidently caused by very hard work.

DISCUSSION OF RESULTS.

These condensed reports are more than three-fourths of the total number of cases selected and ought to give the general average ultimate results. To the first question, Has the kidney remained in place? the answers are all "Yes." (One early case was operated on the second time.) Has the pain and distress been relieved? is also answered with "Yes," except by one, who complains of pain in the incision of the back. To the third, Have the stomach and digestive symptoms improved? most answered "Yes," except a few, who evidently expected also relief from headache or chronic constipation The fourth question, Have any other symptoms, pain or distress been relieved? is answered "Yes" by nearly all patients, while a few still have other troubles.

I have always claimed that the whole question was one of correct diagnosis. I have any number of cases of movable kidney which I do not operate on when they produce no serious symptoms. I have always operated on cases in which I did not know if the kidney or the other pathologic conditions produced the trouble. In nearly every operative case which also has a loose kidney I fix the latter in order to be sure that I cure my case, otherwise the patient will not be relieved and blame me for not doing so. In case of general abdominal ptosis, fixation of the kidney will be of little benefit, although it may relieve one symptom, viz., the distress caused by the kidney, and I always refuse to operate on those cases except the patient has a clear understanding of the doubtful benefit. Still, some of those cases receive a great deal more benefit than they or I expect. I never make any promises. If, however, there is kinking and twisting of the ureter, or albumin makes its appearance in the urine, then I operate, as I have found that fixing a loose kidney and decapsulating it pretty thoroughly relieves, or I might say, cures the early stages of so-called Bright's disease.

At the same time, fixing a floating kidney does not mean that you get it in the exact position where it was or should be, but by fixing it high up as near to the original site as possible you prevent it pulling on or irritating other organs or the solar plexus of nerves; you prevent congestion, and kinking or twisting of the ureter. You simply fix it so that it stays in that locality subject only to that mobility which is required in respiration. You get it as near as possible in its normal position, but that will not cure smallpox nor fracture of the arm nor ingrowing toe nails. It will cure neither piles nor whooping cough. It will not relieve the headache caused by astigmatism. It will not relieve nervous affectations of syphilis nor elevate moral impulses.

As far as the mortality is concerned, I myself have never lost any case, neither in this series nor in other cases of fixation of the kidney. The mortality should be absolutely nil, although an unavoidable death may take place from some accident, chloroform, etc. In a few cases there was a superficial stitch abscess, but this does not interfere with complete recovery. I keep them in bed fifteen or sixteen days and in three weeks they can return home. It seems to me that I am perfectly justified in making these conclusions:

1. Movable kidneys can be permanently fixed by a proper technic.

2. Undoubtedly many disturbances of digestion are caused by movable kidneys, probably by causing irritation of the sympathetic nervous system, perhaps of the solar plexus.

3. Fixation of a loose kidney will relieve some digestive disturbances.

4. Many of the nervous symptoms in this condition are relieved after a short time.

5. A proper diagnosis must be made before operating and the kidney found to be the cause of the trouble beyond any reasonable doubt.

6. The fixation of a floating kidney can not cure cancer of the stomach, remove gall-stones, subdue an inflamed appendix, nor dilate a constricted bowel.

CESAREAN SECTION IN THE TREATMENT OF PLACENTA PRÆVIA.*

W. A. BRIGGS, M.D.

SACRAMENTO, CAL.

Placenta prævia in its manifestations and in its combined mortality of mother and child is the most appalling complication of pregnancy. In its management the courage, judgment and knowledge of the obstetrician will be taxed to their uttermost. It behooves him, therefore, to be prepared for every contingency of this multifarious condition. To paraphrase a paraphrase of Addison, she who has a hesitating physician is lost.

Within the brief period of three months I have seen four cases of total placenta prævia.

CASE REPORTS.

Case 1.—This case occurred in the practice of Dr. S. E. Simmons and formed the basis of a paper read by him before the Sacramento Society for Medical Improvement. In this paper he laid particular emphasis on the importance of early diagnosis, insisting that every pregnant woman should be carefully examined with special reference to this condition as early as the sixth or seventh month. This is an important point universally neglected.

Patient.—The patient, a multipara, in the ninth month, was practically moribund from hemorrhage when the physician reached her. He delivered with forceps within fifteen minutes, and maintained the circulation with hypodermoclysis and hourly hypodermics of adrenalin for twenty-eight hours, when death took place from circulatory failure.

Remarks.—Nothing, I believe, could have saved this woman. Completely exsanguinated by a sudden and enormous hemorrhage, when Dr. Simmons reached her she was in a state of vasomotor paralysis from which, notwithstanding vigorous and well-directed measures, she never rallied. This case, with any respect whatever for the canons of surgery, certainly was not suitable for Cesarean section.

Case 2.—This was one of total placenta prævia in the seventh month; there was rather sharp hemorrhage. Dr. Sutliff made a diagnosis of total placenta prævia, in which I concurred. Fetal heart sounds were inaudible, and, as bleeding had ceased, it was thought best to leave the case to Nature. Three days later labor set in and was completed without further hemorrhage.

Case 3.—Mrs. S., a multipara, in the ninth month of pregnancy, was taken with hemorrhage and attended by Dr. Sutliff, who packed. Hemorrhage was repeated and profuse, and in Dr. Sutliff's absence the husband packed the vagina at least once. The patient was sent to a hospital where I saw her at 10 p. m., Feb. 4, 1905. She was extremely anemic; the cervix was undilated and undilatable; the lower segment was boggy in entire circumference as far as finger could reach; the sac was ruptured and largely emptied; the head was at superior straight, but unengaged; hemorrhage was profuse; the child was alive, but feeble.

In the opinion of both Dr. Sutliff and myself Cesarian sec-

* Read before the Nevada State Medical Society, May 10, 1905.

tion offered the only hope for the child, and practically the only hope for the mother. It was accordingly proposed and accepted.

Operation.—I operated, with the assistance of Drs. Sutliff and Parkinson at 11 p. m., following the plan prescribed. The child was delivered alive in two minutes; the shock and loss of blood were slight; the uterine contraction was prompt and efficient.

Postoperative History.—Uterine infection, suspected at the time of operation, was quite evident the day following. Fearing some accident, however, I delayed intrauterine treatment until the fifth day. From this time on an intrauterine douche, followed by an intrauterine injection of clove oil and glycerin, with the patient in the Sims' position, was given every six hours until her condition was greatly improved, and then every eight or twelve hours until convalescence was established. Within an hour after each injection the temperature dropped nearly or quite to normal, with a corresponding subjective improvement in the patient's condition. The patient left the hospital on the fifteenth day after operation, and both she and her child have done well since.

Case 4.—Mrs. T., primigravida, in the ninth month, was taken with severe uterine hemorrhage Feb. 8, 1905, at 7 p. m. On examination Dr. Sutliff found a total placenta prævia with long, undilated and undilatable cervix, and with the head presenting at upper straight. In consultation I confirmed the diagnosis and concurred in advising immediate Cesarean section.

Operation.—I operated at 10:30 p. m., with the assistance of Drs. Sutliff and S. E. Simmons. The extreme corpulence of the patient necessitated a freer incision, but without any effort the child was delivered within three minutes. The lower uterine segment was filled with blood, dammed back by the vaginal packing. The hypodermic of ergot was given late, and the uterus did not contract at all promptly or vigorously, but hemorrhage was kept fairly under control by compression of the aorta. The loss of blood, however, was considerably greater than in the previous case. The child could not be resuscitated, although Dr. Simmons thought he felt a few heart beats.

Postoperative History.—The uterus was also infected in this case and the same treatment was employed. The patient left the hospital on the tenth day, completely recovered. Examination May 27 showed uterus somewhat enlarged, but entirely free from abdominal wall.

DISCUSSION OF CASES.

The course pursued in these cases was justified, I believe, both by the conditions present and the results obtained. In the third case with total placenta prævia, undilated and rigid cervix, head presenting but unengaged, sac ruptured and largely emptied, any other procedure would have sacrificed the child inevitably, and probably the mother.

In the fourth case, with total placenta prævia and a long and rigid cervix, the same assumption is not unwarranted.

DIAGNOSIS AND TREATMENT.

Early diagnosis of placenta prævia is imperative. During the sixth month a thorough pelvic examination should be made in every case of pregnancy. The vaginal examination should be supplemented by a rectal one in order to determine the condition of the posterior and lower segment of the uterus, which it is sometimes difficult or impossible to reach by the usual method. Having made a positive diagnosis of total placenta prævia, I believe that serious hemorrhage and likelihood of infection consequent on repeated packing and manipulation should be prevented by early operation, prophylactic Cesarean section.

The difficulty with this dictum, it seems to me, will rather be with its application than its acceptance. To me it seems quite clear that taking time by the forelock and with due deference to the interests of both mother and child, selecting the opportune moment for surgical intervention, we may materially reduce the death rate, maternal no less than fetal.

But what is the opportune moment? The moment of maximum viability of fetus compatible with minimum danger to mother. In other words, the furthest point of pregnancy which does not materially compromise the safety of the mother—as a rule, probably, the last week of the eighth month or first week of the ninth month; earlier, of course, if hemorrhage has already occurred.

PLAN OF OPERATION.

Besides the avoidance of hemorrhage and infection, there is another important advantage in electing the time for operation—all preparations can be properly made.

In an emergency, preparation can be made in a few minutes: Shave abdomen, rub well with clove oil, scrub with sterile soap and water, wash off with alcohol, cover with sterile gauze, sheet or mackintosh with median slit, sterilize hands by same method and cover them with gloves.

Only a few instruments are absolutely necessary: Knife, scissors, needles and holder, hemostats, silk and silkworm sterilized by boiling; in fact, in case of necessity, one might do with sharp-pointed scissors, a hemostat or two, needles and thread.

Whenever time permits the most painstaking preparation should be made, and the most careful plan of operation should be laid out beforehand. Two lives are at stake, and each must be surrounded with every possible safeguard. These precautions consist of three days in bed preliminary to operation: a clear and aseptic digestive tract; free ingestion of water twenty-four hours before operation; thorough antiseptic preparation, and the strictest asepsis in every detail. Competent assistants should be provided in sufficient number; one, with every preparation for resuscitation, to take the infant immediately after delivery; one to compress the aorta after the uterus is emptied; one to compress the uterine arteries if need be, and two to hand instruments, to use hypodermoclysis or venous infusion and to render other necessary assistance. Each assistant should be thoroughly instructed in his special duties; sutures should all be threaded and ligatures cut; saline solution and apparatus for flooding abdomen, hypodermoclysis or venous infusion, ergot and adrenalin solution, Faradic battery, everything possible pertaining to the operation should be in readiness for immediate use, so that, from start to finish, there may not be the slightest hesitation, hitch or delay.

Anesthesia should be induced by a skilled anesthetist, beginning with ethyl chlorid and finishing with ether.

Ten minutes before the first incision a full dose of ergot should be administered hypodermically. Should arterial tension drop, adrenalin chlorid, 1/50 grain, may be given intravenously or hypodermically, but not mixed with ergot, as it might hinder the absorption of the latter and predispose to abscess or to necrosis.

With everything planned and prepared, a median incision from 15 to 20 cm. in length should be made over the most prominent part of the fundus, extending ordinarily about equally above and below the umbilicus, occasionally one-third above and two-thirds below. The abdominal incision should be made quickly, but not hurriedly, and should be completed before the uterine incision is made. While the assistant presses the edges of the abdominal wound against the uterus, the uterus and amnion are incised at either the lower or the upper

angle of the abdominal wound; either Kocher's director or two fingers of the left hand are introduced, and the uterine and amniotic incision is completed with angular scissors. The infant is seized by the feet, or, if the head presents, by the neck, and lifted carefully out of the womb and handed to the assistant selected for this purpose. The cord is clamped in two places with suitable hemostats and cut between.

No attempt at uterine hemostasis should be made until the child is delivered, when the second assistant, after cleansing the wound, should introduce the right hand behind the uterus and compress the aorta, in order to control uterine hemorrhage and to maintain the arterial tension of the central nervous system. If bleeding be not sufficiently controlled in this way, the third assistant should grasp the neck of the uterus with both hands, low down, and firmly compress the uterine arteries. Under the influence of the ergot, the uterus should now begin to contract; if not, it should be stimulated with a strong Faradic current conducted by aseptic cords and electrode; one pole should be applied to the fundus and the other to the back.

The placenta and membranes are removed in their entirety; if separated, by lifting and twisting; if not separated, either by the same process or by introducing the hand between the placenta and uterus and carefully peeling them off. The afterbirth must be examined thoroughly; if fragments remain and the condition of patient permits these should be found and removed. The uterine muscle should at once be stitched with No. 2 catgut alternately from the lower and the upper angle at intervals of one centimeter. A curved needle and holder should be used to carry the stitch into the muscularis just below the peritoneum and out of it just above the mucosa; the order is reversed on the opposite side. An assistant ties the stitch at one angle, while the operator introduces another at the other angle.

The wound is cleansed, and over the intramuscular suture the peritoneum is sutured with continuous Lembert catgut suture. The abdomen is cleansed, if necessary, and left full of physiologic salt solution, particularly in case of anemia or shock. The wound is closed by the tier method.

UTERINE INFECTION.

In consequence of repeated tamponing, uterine infection is a frequent and serious complication of placenta prævia; but with prompt, rational and energetic treatment it may be often aborted. The two cases of infection here reported were treated by the method to be outlined; the earlier one somewhat tardily, because of an exaggerated and probably groundless fear of preventing repair of the uterine wound, the later one promptly, and both patients recovered.

The method which I had previously used with excellent results in a number of cases of puerperal infection, and had described in the *Occidental Medical Times* and in *American Medicine*, is as follows:

> Immediately on evidence of probable uterine infection cleanse the vagina, and under strict antiseptic precautions, with the patient on the back, wash out the uterus thoroughly through a soft rubber uterine irrigator. This may be improvised with two soft rubber catheters—one No. 12, full length, the other No. 16, one inch longer than the depth of the uterine cavity, and fenestrated in several places so as to permit easy outflow—tacked together by two or three stitches. Then place the patient in Sims' position and inject from two to four ounces of 5 per cent. oil of cloves and glycerin. Leave the irrigator *in situ* and repeat the irrigation and injection from four to eight hours apart. Ordinarily I put the patient in Sims' position after washing out the uterus and before injecting the glycerin, and let her remain there as long as she can without particular discomfort. One of these patients bore the Sims' position very well; the other found it painful and had to discontinue it.

SUMMARY.

1. Every pregnant woman should be examined during the sixth month to determine the presence or absence and, if present, the degree of placenta prævia. The examination should be made bimanually both by vagina and by rectum and stethoscopically by the vagina and by the abdomen.

2. In case of central placenta prævia, elective Cesarean section of Sänger type should be done at the moment of greatest viability of fetus compatible with least danger to mother.

3. In case the fetus is dead and labor does not set in spontaneously, it should be induced after placental circulation is shut off.

4. In emergency cases, when the patient is not exsanguinated and a sufficiently experienced operator is at hand, the Sänger-Cesarean section with presumably clean or superficially infected uterus should be done, and the Porro-Cesarean operation if the uterus be positively and deeply infected. (A) In case of total placenta prævia with (1) undilated and undilatable cervix, (2) cancerous or fibroid cervix, pelvic tumors, pelvic contraction or other obstacle to the usual obstetric procedure; (3) ruptured sac with escape of amniotic fluid and presenting but undescended head. (B) In cases of lateral placenta prævia with living child, uncontrollable bleeding, and either (1) undilatable cervix or other obstacle to the indicated obstetric procedure, or (2) ruptured and emptied sac with presenting but undescended head.

5. In elective cases complete and thorough preparation should be made, and the operation systematically planned; distinct functions should be assigned to each assistant.

6. In imperative emergency cases, the surgeon must operate with what may be at hand—scissors, hemostats, needles, thread, antiseptic, ether.

7. Hemorrhage may be prevented by giving a full dose of ergot hypodermically ten minutes before beginning the operation, compressing the abdominal aorta as soon as the child is delivered, grasping the neck of the uterus low down with both hands and firmly compressing the uterine arteries and by Faradic stimulation of the uterine muscle.

8. Shock may be obviated and relieved by preventing hemorrhage; by rapid operation; by introducing physiologic salt solution into the colon, connective tissue, blood vessels and abdomen; by hypodermic or intravenous injection of adrenalin chlorid solution, and by compressing the abdominal aorta.

9. In the after-treatment, purgation should be avoided; colon injections of saline solution from eight to sixteen ounces, may be given at intervals of from three to eight hours; the bowels may be moved by enemata; epsom salts, two to four ounces; glycerin, three to six ounces, asafetida mixtures fifteen to thirty ounces.

10. On the first evidence of uterine infection prompt and energetic measures of local disinfection should be instituted by means of antiseptic exosmosis and drainage.

Normal Diet.—Dr. Harry Campbell, London, says that the minimum normal diet is the smallest quantity of food adequate to maintain a man at the lowest weight compatible with the highest attainable level of health.—*Clinical Journal.*

MORTALITY AFTER PROSTATECTOMY.*

BENJAMIN TENNEY, M.D.

Surgeon Boston Dispensary, formerly Instructor in Anatomy Harvard Medical School.

AND

HENRY MELVILLE CHASE, M.D.

Assistant Surgeon Boston Dispensary.

BOSTON.

Any operation whose mortality varies between 15 per cent. and 30 per cent. for institution work and 4.4 per cent. in the work of an individual does not seem to be based on uniform details.

We have had no deaths as yet in our own prostatectomies, but, with the expectation that later we shall have to report fatal cases and the hope of making them as few as possible, we have gathered from recent literature and personal communications of others interested in this line of work more than a thousand cases of prostatectomy with reference to the mortality and its causes.

We have accepted as possibly due to the operation every death reported as occurring within six weeks of the date of operation. This compels us to omit some extensive lists which only report mortalities occurring within a shorter period. If it be unfair to the operation, as it apparently is in some cases, it must include all cases about which there can be doubt in the mind of any one. A cerebral embolus following an enema given the day before a patient was to go home, and a fatal pneumonia beginning three weeks after operation and a satisfactory convalescence, seem to show the hand of Providence rather than of the surgeon. We have included all such cases and not attempted to edit or explain for the sake of more favorable statistics for the operation.

There is no question but that the reports still show a higher mortality for the transvesical than for the perineal operation, but the difference in mortality is much greater among operators of experience doing the same operation than between the gross results of the two operations. Whether there is any anatomic or physiologic factor which makes one operation more dangerous than the other under proper conditions, we doubt.

Our own cases have been operated suprapubically because the preliminary examinations have convinced us that these particular individuals could be operated more safely in that way. We expect to operate through the perineum when we find prostates which seem more readily approached from below, but with the wide variations in size and location of the obstructing masses or lobes an invariable route of approach seems to us too "consistent" to be the wisest course.

Our figures are taken from original reports which have been published within the past five years with one or two exceptions. The gross mortality compared with that found by other collectors of statistics is shown in Table 1.

TABLE 1.

	Perineal.	Mortality (per ct.).	Suprapubic.	Mortality (per ct.).
Proust[1]	813	7.13	244	12.0
Watson[2]	530	6.2	263	13.3
Escat[3]	382	11	164	18.0
Tenney and Chase	617	7.6	396	9.8

Reports from certain operators are included in Table 1 which lack the details necessary for further consideration according to our plan. Omitting these, we have 816 cases whose age and mortality appear in Table 2.

TABLE 2.

Cases.	Ages.	Mortality, per cent.	Decade mortality, per cent.
8	39-49	0	
31	50-54	10	5.8
89	55-59	4.5	
201	60-64	7	9.5
221	65-69	11.3	
175	70-74	13	15.
65	75-79	18.5	
24	80-84	8	
0	85-89	0	
2	90-94	50	

Most patients with prostatic obstruction present symptoms before 70, even if the catheter is not absolutely required, and these figures show better than any amount of argument the desirability of early operation. We have operated on three men aged 72, 77 and 78, and on one patient of 68, whose heart and arteries were at least ten years older. All recovered, but their convalescence was in marked contrast to that of our younger patients. The oldest surviving patient in this list was 92, operated suprapubically.

Age of itself is no argument against the operation, but conditions which often accompany and sometimes precede old age may increase the risk beyond the patient's wish to face it. No patient willing to face a moderate risk of death in order to escape the misery of such catheter existence as we sometimes see should be denied his chance of lightening his labor and sorrow because of his more than threescore years and ten. He has better than four chances of recovery to one of dying in any five-year period before ninety in the hands of the average operator.

In studying the seventy-three deaths, we first notice that there are fatal periods. There were twenty-three deaths, or more fatalities in the first forty-eight hours than in any other two days.

Another period of mortality includes the seventh, eighth and ninth days, which show twelve deaths. On the thirteenth and two following days there were six deaths, and on the twentieth to twenty-second days inclusive there were seven deaths. Two-thirds of all the deaths came during these fatal periods.

The table showing the time of death of the fatal cases is to us very interesting. First, the duration of life following the suprapubic and the perineal operations is almost identical. Of the 38 deaths in 384 suprapubic operations, 11 (or less than one-third) occurred during the first forty-eight hours, 19 (or one-half) during the first week and 25 (or two-thirds) during the first ten days.

Of the 35 deaths in 417 perineal operations there were 12 (or one-third) within the first forty-eight hours, 19 (or one-half) within the first week and 25 (or nearly three-quarters) within the first ten days. There were no deaths on the twelfth and thirteenth days. Contrast these results with one reported series of 51 patients with three fatal cases, only one of which occurred before the eighteenth day, and another series of 160 cases with one death before the thirteenth day in a total of seven mortalities!

These two series are included in our 617 perineal prostatectomies, with 7.6 per cent. mortality. Taking these out we find two men doing 211 operations with two deaths within twelve days, compared with "the field" doing 406 perineal operations and losing twenty-two patients within the same period. When we include the suprapubic operations we find a total of 45 fatalities in 790 operations within the same period, and these figures do not include the high institution mortality referred to at the beginning of this paper. It does not

* Read before the New England Urological Society, at Boston, May 3, 1906.

1. Proust: Annals des Malad. des Org. Genitourin., 1904, p 1697.
2. Watson: Annals of Surgery, June, 1904.
3. Escat: Annals des Malad. des Org., Genitourin., 1904, p. 1635.

seem as if rapidity of operation could account for the different results, for the two men referred to do not use the most expeditious method. Neither does it seem from published reports that their cases are specially selected. We have tried in various ways to account for this surprising difference—1 per cent. as against 6 per cent.

It has been stated by Moullin, Richardson and others that patients with stone in the bladder are more favorable subjects for operation than others. Our list contains 107 cases complicated by vesical calculus with a mortality of 13 or 12 per cent., as compared with 8.6 per cent. mortality among the cases without stone. If the presence of vesical calculus has any bearing on the mortality it is unfavorable.

The age of 23 patients dying within the first forty-eight hours gives a possible clue to the reason for the large number of early deaths. Three were in the fifties, out of seven dying in that decade, seven of the thirty-nine deaths in the sixties, thirteen of the thirty-five deaths in the seventies, none in the eighties and one patient of ninety-four.

The corresponding figures for forty-six patients dying within the first twelve days give us six deaths in the fifties, or 86 per cent. of all deaths in that decade, twenty deaths in the sixties, or 51 per cent. of the decade mortality, nineteen in the seventies, or 54 per cent. of the decade mortality, and one patient of 94. The number is too small for permanent conclusions. So far as it indicates anything it is that the older men are less likely to stand the shock and loss of blood in the operation, and that the younger men stand the sepsis, uremic complications and confinement less well than the elders. We have also tabulated the causes assigned for death in these 46 cases and have kept the perineal and suprapubic results separately.

TABLE 3.

Cause of Death.	Within 48 hours. Suprapubic.	Within 48 hours. Perineal.	Within 12 days. Suprapubic.	Within 12 days. Perineal.
Uremia	2	5	9	9
Shock and hemorrhage	4	1	4	2
Pulmonary	2	0	5	1
Sepsis	0	2	1	3
Cardiac	2	2	2	3
Collapse	0	0	1	2
Anesthesia	1	2	1	2
Unknown	0	0	0	1
Total	11	12	23	23

No man can tell how many of these deaths were inevitable, but we are convinced, in view of the experience of the two operators referred to, that some were unnecessary and that it is not entirely a problem of speed or technic in the operation. We believe that many of these disasters could have been prevented by the exercise of greater care before, during and after the operation.

Before operation the bladder must be made as clean as possible by irrigation or by drainage through a permanent catheter or a cystotomy tube. The heart and kidneys may require stimulation, the bowels may need attention for some days, and the skin is not to be forgotten when uremia is a possible complication.

During the operation the anesthetist has a great responsibility—only second to that of the surgeon, who must choose for himself the methods most desirable in each individual case. We believe that the after-care of these cases during the first few days is a more important matter than the special technic of any operation. Patients do not bleed to death on the table. A severe hemorrhage at the time of operation is located and controlled, but the bleeding into a limp bladder or the gauze dressing is easily overlooked in a busy hospital. Many of these cases deserve the cause of death given by one surgeon: "hemorrhage and neglect." The kidneys must be kept active and sometimes profuse sweating and purgation must be resorted to. Drains must be kept open, and we believe in frequent irrigation with mild antiseptics, though some men consider it unnecessary. Watering the patient during the first hours of his convalescence is more important than feeding him, which fact must be driven into the ordinary nurse against her will.

Last, but not least, he must be taken out of bed at the earliest possible moment and made to sit up, if only for a few minutes at a time. Our patients have been out of bed by the second or third day and regularly after that.

A prostatectomy is not a completed piece of handicraft, like most clean laparotomies or dissecting operations, after which the surgeon can wash his hands and leave the case to the care of the ordinary nurse or house officer. Each patient should have careful and intelligent attention almost constantly during the first forty-eight hours, and the same sort of attention later at frequent intervals until his convalescence is well established. The more feeble the patient the more necessary is this care.

Prepare the whole patient as well as the operative field for the ordeal; do not attempt too much at one sitting, and remember that the need of minute attention to the patient's condition has only begun when the anesthesia is over. These are the precautions which seem to us most essential to a low mortality after prostatectomy.

Note.—With the exception of cases tabulated in Proust's admirable book on Prostatectomy, we have taken all our cases from original reports. The references are much too numerous to be given here, comprising as they do, more than 150 different articles. We wish gratefully to acknowledge personal letters from Drs. Fuller, Young and Watson, which have been of material assistance in preparing this paper, and to express our appreciation of the great value of articles with full details of cases, convalescence and after results such as that published by Dr. Murphy in The Journal of the American Medical Association two years ago.

308 Marlborough Street.

THE ECONOMIC PRODUCTION AND DISTRIBUTION OF CLEAN MILK.

JOSEPH ROBY, M.D.
Deputy Health Officer.
ROCHESTER, N. Y.

An editorial in The Journal of the American Medical Association December 9 states: "The question as to whether milk is better food for children in a raw or Pasteurized state is easily answered in a few cities where supervision of dairies is properly carried out and the standard of dairy cleanliness high. Under such circumstances, there is no question that the raw material is the best in every way. . . . The conduct of a clean modern dairy requires a large outlay of buildings and apparatus and a much larger force of helpers than is to be found in the average dairy of the present. In order to procure clean milk in our cities, therefore, we must either raise the price of milk or resort to some artificial method of rendering it innocuous. Unfortunately, any increase in the price of milk would fall most heavily on the more prolific poorer classes, and for this reason is objectionable, though it might be possible to educate the general public up to the desirability of this step. Meanwhile the question of Pasteurization is of importance."

From an economic standpoint it would seem that

clean milk could be produced as easily as Pasteurized milk, for properly to Pasteurize milk and effectually to cool it after this process must require fully as expensive, if not more expensive, apparatus.

I desire to emphasize three points:

First.—Remarkably clean milk can be produced without an expensive plant.

Second.—The steps necessary to produce such a milk.

Third.—A scheme for improving the entire supply of cities.

Physicians who have devoted themselves more or less to the diseases of children have been responsible, as a rule, for certified milk, the certificate usually meaning a certain percentage of fat and total solids and a low bacteriologic count. What is said here will have to do only with milk of a low bacteriologic count or clean milk, because we are "firmly convinced from the results in Rochester that this is much more important than high fat percentages."

As Professor Conn of Wesleyan pointed out, it is not so much the number of bacteria in milk as it is the kind. Low counts, however, show how the milk is produced and handled, and if there are few of any kind, of course, there must be few injurious ones. von Behring and his pupils, by feeding young animals non-virulent cultures of anthrax bacilli, seem to have proved that the mucous membrane offers practically no resistance to the entrance of living bacteria into the blood, and the frightful mortality among young infants and the frequency with which they suffer from gastrointestinal infections would seem to prove this for the young of man. This has led von Behring to make the statement that an infant should not receive milk containing more than 1,000 bacteria to the c.c., or quarter of a teaspoonful.

Since the establishment of the Rochester municipal stations and a more efficient milk inspection the death rate in children under 5 has markedly decreased, not only relatively to increased population, but absolutely.

In 1904 the milk stations were unusually popular, and there were many protests against closing them, and we found ourselves with a considerable number of infants demanding clean milk, which they were unable to get for love or money. That is to say, there was no one in Rochester supplying a milk that could be depended on to run below 100,000 bacteria to the c.c. A great many men would occasionally have counts of 75,000, 50,000, or even 10,000, and the next month they would get over 500,000.

The average monthly counts in Rochester for the last six years vary from about 100,000 per c.c. in winter to about 500,000 per c.c. in summer.

Milk is supplied to Rochester very much, I imagine, as it is to other cities of the same size. There are several large dealers who get railroad milk and put out 1,000 or more quarts; small dealers getting railroad milk, and farmers who produce and peddle their own milk.

In spite of the continued object-lesson of these stations to milkmen (for the portable bottling and sterilizing plant has been located at a different farm almost every year), in spite of the opportunity for the milkmen to see how anxious the people are to get clean milk, and in spite of an invitation from the Academy of Medicine to milk dealers to get their milk certified, until this year no one has been found who would do it. In November, 1904, a bulletin containing about such advice as is given later in this paper, warning them about scarlet fever, diphtheria and typhoid and offering to give a rebate to assist in purchasing sterilizers, was sent to every milkman. Then, in order to get some milkman to produce a really clean milk, a letter was sent to about twenty men who had had rather low bacteriologic counts and who produced their own milk, for, of course, those who bought their milk could not control its production. This letter simply asked them to come into the health office, where it was explained to them what it was necessary for them to do, and on our part we said that we would try to get twenty people who would agree to take a quart of milk at the advanced price of nine cents a quart, six cents being the usual price in Rochester.

Much to our disappointment, we have never had a single order for the sterilizers, and we could only find one man who was willing to try to produce unusually clean milk, for we had at least hoped to be able to divide the city into quarters and have one man for each quarter, so that each man's route would not be too long.

The farmer who did qualify had not the advantages of a college education and his barn, although one of the best cow barns in Monroe County, is a very ordinary one. The main building is of two stories; the basement is of stone and partially underground on one side, and the upper part is of very rough boards, with a new, but inexpensive wooden cow barn attached so as to form a T. There are no cement floors. There is an inexpensive wooden milkroom, with wooden floor, situated about thirty feet from the barn. Fortunately the man had a steam boiler and had constructed a metallic-lined wooden tank for cooling the milk. This tank was converted into a sterilizer by making the cover fit tightly and running the steam pipe into it, so that a temperature of 212 degrees could be easily obtained and all the utensils sterilized. The cattle are ordinary grade cows, with a few Jerseys, but all tuberculin tested.

The directions embodied under Point 2 were given. The milk is poured from the milking pails into the bottle filler, the bottles filled, capped and sunk in ice water. No aërator is used. In well-equipped modern dairies these may work well, but we have been afraid to advise it, unless one could control the air in the milkroom rather better than seemed possible here, and it seemed to us one more chance for infection. We think we have also killed the dreaded animal, heat bugbear. We have not talked to a single milkman who has not held up his hands in holy horror at the idea of putting a tight cover on milk while it was still warm. And yet this can be done, and there will be no animal odor if the barn is clean. If milk produced in this way is kept cold at 45 degrees, it will keep sweet almost indefinitely. A quart of milk was opened every day to test it, and it kept sweet for sixteen days, and might have kept longer had there been any left.

The bacteriologic counts of this milk in 100 examinations have given an average of 3,853 cubic centimeter or ¼ teaspoonful, with 21 below 1,000, the lowest 240, and only one (29,000) above 20,000.

Thus our first point has been proved, for this man has certainly done without an expensive barn, what many another small farmer could do.

As to the second point, very long and complicated rules have been given to milkmen, and have been put down in such a way that the men have not attempted any of them, because they did not realize which was the most important. We think that the rules should be very few and arranged in the order of importance as follows:

First.—The protection of the milk from infection by scarlet fever, diphtheria and typhoid.

If one of these diseases develops on the farm, the patient must be immediately removed from the premises and must not come in contact with any one who has anything whatever to do with the milk. The milkroom, barn and cows should be thoroughly cleaned and every utensil must be sterilized by steam.

In case of diphtheria every one on the farm must have an immunizing dose of antitoxin.

These rules should be strictly enforced and the dairyman must be made to report these diseases to the health office; failure to do so, either wilfully or through ignorance, should mean a permanent revocation of the license. If no other place is available, patients with these diseases should be removed to a hospital, even at the expense of the municipality.

Second.—Cooling the milk and keeping it cold, or at least below 50 degrees. At first thought all might not agree to this being so important, but on reflection it will be self-evident. Practically, at least, sterile milk can not be drawn from the cow, so we start off with an excellent culture material already infected, and, if allowed to stay or to get warm, these bacteria multiply beyond comprehension, so that a milk containing 3,000 bacteria per c.c. in the beginning at the end of twenty-four hours would contain many millions, and be infinitely worse than one containing 30,000 at the start, that had been kept cold all the time. If kept very cold the bacteria would not increase much, and the number might be even less in twenty-four hours.

Third.—Keeping the utensils clean, or better, sterile, is about as important as keeping the milk cool. Milkmen must be made to understand that their "scalding" is not so efficacious as actually boiling water in the utensil, or submitting it to steam under pressure for some time, and that nothing like clean milk can ever be produced unless the vessels are comparatively sterile.

Fourth.—Milking directly through sterile cheese cloth into a pail with a small (five-inch) opening. On some thirty comparative counts, versus the open pail at the milk station during 1904, this cut the average count exactly in half. Cheese cloth covers must be changed at the time the pail is emptied.

Fifth.—Keeping milk tightly covered. These five points are absolutely necessary, and without following them milk with few bacteria can not be produced. Milk produced in this way will probably run about 10,000 to the c.c. Now every one of the subsequent points that are followed will reduce the count a certain amount, so that in perfectly equipped and managed dairies the count may run regularly at 1,000 or below. These points are:

Sixth.—Discarding the first draws from each teat.

Seventh.—Keeping the cow absolutely clean.

Eighth.—Keeping the milkers' hands and clothes clean.

Ninth.—Keeping the ceiling clean and free from dust; preferably it should be lathed and plastered.

Tenth.—Keeping the barn clean and using shavings for bedding instead of straw.

Eleventh.—Being careful not to stir up the dust just before or at time of milking.

Of course, in a barn constructed entirely of cement the last four requirements can be much more easily carried out.

Mrs. Cooke of the New York Commission assures us that just as good, if not better, milk can be produced in good dairies without the cheese-cloth strainers over the pail. We do not doubt but that this is so, but unless the last points can be closely followed the strainers seem necessary.

So much for the method of getting a certified milk plant started in cities where there is no such milk supply. But what are we to do for the great mass of people who can not afford to buy certified milk delivered in glass jars at an advanced price?

For the supply of cities we offer this scheme: There should be as many certified milk farms as possible, where the milk is to be put up in bottles at the farm and delivered in this way directly to the consumer. When the cities are small, like Rochester, so that the farmer can be within driving distance, the delivery wagons would start directly from the farm; in large cities they would have to start from railroad stations. For those who are not able to pay a considerably advanced price for this milk, we suggest that the city have a can-sterilizing plant—not a plant for sterilizing milk, dirt and bacteria together—located near the various railroad stations where milk comes in. After delivery the cans are returned to this sterilizing plant, washed by machinery, a cheese-cloth cover put over the can, then the metal cover, and over the entire top of the can a stout canvas cover with a purse-string arrangement so that no dust can get in. These cans are then slid into a sterilizer and sterilized by dry heat. The cans are then shipped back to the farms. The milkman receives his can, takes off the canvas cover, removes the metal cover and milks directly through the cheese cloth into the can. When the can is full, the cheese-cloth strainer is removed, put into a canvas bag, and subsequently returned to the city's sterilizing plant. The metallic cover is replaced on the can, and the can immediately sunk in ice water up to the neck. This can is then carried by rail to the city, and there the milk may be bottled, or the milk may be delivered directly from these cans. This milking, shipping and delivering pail or can should hold about fifteen quarts and have a small 5½-inch opening. The cooling tank should be made so that it overflows at a level just below the cover of this can. This scheme would necessitate the farmer having as his only apparatus a plain wooden tank or trough large enough to hold all his cans and enough ice properly to cool the milk. He would not have to handle the cans at all. In fact, he must be instructed not to handle them. He would not need an expensive milkroom.

This is the application of surgical principles to the milk business. Whenever surgical instruments or dressings are handled they become infected. The efficiency of this one-can scheme was tried in November, 1905, with the following result:

We had no special pail and no quart dipper, the can was opened, a quart poured off and a sample for bacterial examination taken each time.

Five hours after milking, 161; five minutes later, no growth (somewhere under 277); ten minutes later, 242; one and one-half hours later, 200.

The milk was on the wagon all this time.

Bottle milk, the same day, contained 13,000.

As in the dilutions made, only one colony grew; it it seems probable that 161 show some accidental contamination and that 200 would have been the right count with a heavier dilution.

TREATMENT OF THE BITES OF COPPERHEAD SNAKES

BY LOCAL FREEZING COMBINED WITH THE FREQUENT APPLICATION OF A POTASSIUM PERMANGANATE SOLUTION.

C. W. R. CRUM, M.D.
JEFFERSON, MD.

For several years I have averaged about two cases of bites of copperhead snakes a year, and finally hit on a plan of treatment which gives me such good results that it may be worth while to communicate it to others.

My earliest experience with the use of caustics locally and whisky and ammonia internally was unsatisfactory in many respects, although I had no deaths. During the past year I treated for two months a fearful ulcer of the finger and hand which was caused by cauterization with caustic potash for snake bite. The final result was a contracted palm and stiff fingers.

Several years ago Dr. Thomas R. Brown[1] published an account of some experiments with potassium permanganate as an antidote to the venom of snakes of the viper class, e. g., rattlesnakes, copperheads and vipers. Previously I had used this drug in a measure, but afterward I used it almost entirely, at first hypodermically. Being refused this method of administration on one occasion, I used permanganate solution locally on compresses and apparently with good effect. Shortly after I hit on the plan I now pursue which gives me results incomparably better than anything I have known of heretofore. My plan is to freeze the area around the bite with ethyl chlorid spray, incise through the wound, usually making two parallel incisions of almost an inch in length through the two little wounds made by the fangs. Then I soak the part for a few minutes in strong permanganate solution and apply dressings wet with this solution. The edge of this dressing is raised up every half-hour or hour and fresh solution poured over the surface. The incisions, which are trifling, usually heal in a day. Certainly, so far as my experience goes, an incision in an area poisoned by snake bite appears to heal with extraordinary rapidity even in the absence of any effort at asepsis.

This method I have now used successfully in eight cases. I am inclined to attribute some virtue to the freezing by ethyl chlorid over and above the mere anesthetic effect. If the patient is seen within one hour after the bite, he is usually all right in two or three hours, with the exception of trifling swelling. The extension of the poison seems to be checked very shortly after this application. Internally I usually employ a few doses of strychnin, but occasionally use whisky and ammonia as well, perhaps out of respect to local prejudice.

The three cases cited herewith are, respectively, one illustrating the happiest result of treatment, another the most serious case, and the third the most peculiar case of all the instances of poison bites that I have met with.

CASE HISTORIES.

CASE 1.—A boy, aged 8, visiting in the country, was bitten in the wrist by a huge copperhead. The snake was killed and was a typical specimen. It was during the month of August when snake bites are supposed to be most venomous.

I saw the boy within half an hour. Chloroform was employed to control the child, but ethyl chlorid was nevertheless used locally. The pain from the bite seemed to be intense. The arm was already much swollen and blue. The incisions were made. There was some bleeding, which was encouraged by immersion in warm water. The permanganate solutions were applied as usual.

It was 10:30 a. m. when I left the house. On my return at 4 p. m. the boy was out in the mountains playing, and the swelling was scarcely apparent. I did not see him afterward as he was considered well.

CASE 2.—The second patient was a young woman school teacher who with a party of young people was doing some mountain climbing on an August day. She trod on a copperhead of medium size, which stuck its fangs into her foot just in front of the ankle.

It was perhaps two hours before she reached our village, but she had already been sufficiently dosed with whiskey to insure of the good effects of such treatment—if it has any. In my absence a neighboring doctor prescribed onion poultices and more whiskey. Shortly after this she became nauseated and vomited, and could take no more whiskey. It was nearly four hours after the time of the bite when I first saw her. The leg was much swollen, the whole body was of a jaundiced hue, and over the leg were splotches of deeper copper color. The general condition was one of extreme prostration. The pulse was almost indistinguishable, the respiration shallow, but the mind was clear. I gave some aromatic spirits of ammonia and had turned to look after the local wound when the patient became unconscious and respiration stopped. She was given a hypodermic of strych. 1/30 and nitroglyc. 1/100, and artificial repirations were instituted. In a few minutes the injection was repeated. Respiration was re-established shortly afterward, the pulse returned with more force, and the patient revived.

Recovery was followed by a prolonged convalescence. There was marked anemia with a decided aortic murmur for some time. The mottling of the leg persisted for months.

I instance this case because of its gravity, the length of time from the bite until the extreme symptoms set in, and the evidence it afforded of the destruction of the red corpuscles of the blood.

About the time of the publication of the observations of Dr. Kelly and Dr. Brown another article appeared elsewhere in which were compared the relative effects of cobra viper venoms. The statement was made that both venoms contained two toxins, a poison destructive to red corpuscles and a nerve-destroying poison. It was also stated that the blood-destroying element was in excess of viper venom so that death occurred, if at all, some time after the bite, and with distinct evidences of destruction of red blood cells. Cobra bite, on the other hand, was said to be more rapidly fatal on account of the very large excess of the nerve-destroying poison in the cobra venom, the fatal result being accompanied by other evidences of implication of the nervous system.

From this article[1] also I received the impression that very young snakes—infant snakes—of the viper class were very poisonous and that this poison had a somewhat different action from the venom of the older snakes. By the way, it is the popular opinion among our mountain dwellers that large snakes are not more to be dreaded than smaller ones of the same species, and this certainly coincides with my observation. A very peculiar case came under my notice about six years ago, before I had used my present method of dealing with poisoned bites.

CASE 3.—A woman was walking barefoot in her garden on the mountain side. She was bitten on the side of the foot by something she did not see and could not find in the low vegetation that was there. She was a young woman of exceptionally fine physique and robust constitution.

Four or five hours later, when I first saw her, there were two very tiny spots at the side of her foot, and the leg was much swollen, but was white and edematous rather than blue or cop-

1. Johns Hopkins Hospital Bulletin, vol. x, 1899, p. 224.

per colored. She complained of a great deal of thirst, and the body was hot. The pulse was 120, and I was surprised to find a temperature of nearly 102 F. She declared that she had been perfectly well before. There was great pain in the foot and leg, which lasted for some days and required the use of opiates.

On the second day the temperature was 104 F. in the afternoon, and reached that point on several succeding days. An evening temperature of at least 102 F. persisted for three, or perhaps four, weeks. The woman became as much debilitated as from an attack of typhoid. Indeed the general conditions made one suspect typhoid,, and the blood was sent to the state health department on three or four occasions for a Widal test. One report was "suspicious," the others were uniformly "negative." The conditions in the leg persisted. It was pale and edematous. The dorsum of the foot gave a boggy sensation of fluctuation, and was incised deeply on three separate occasions. There was merely an exudation of watery fluid, and the incision did not cause any great pain. But the strangest thing to me was that the incisions healed in twenty-four hours.

Some very small snakes were seen in the garden the day after the woman was bitten. Could she have been bitten by a very small snake? This case has always been a matter of speculation to me, and I would like information on it. The woman has never quite recovered her former good health, and I understand that the affected leg is still different from the other.

Concerning the matter of the very poisonous nature of the bite of new-born snakes of the viper class, I remember a story from the Philadelphia Zoo. A rattlesnake and a boa-constrictor were separated by a fine-meshed wire screen. One night the rattlesnake hatched out young. The next morning some of her venomous brood were found about the dead body of the boa-constrictor.

REMARKS ON SAHLI'S DESMOID TEST OF THE STOMACH.

MAX EINHORN, M.D.
Professor of Medicine at the New York Postgraduate Medical School.
NEW YORK.

In the beginning of 1905 Sahli[1] published a new method of testing the functions of the stomach. It consists of placing methylene blue or iodoform in a little rubber bag and tying it tightly with thin raw catgut.

This "desmoid bag" is swallowed by the patient after a large meal (dinner) and the urine or saliva is tested for the presence of methylene blue or iodin. Methylene blue colors the urine green or blue; the iodin or the iodoform may be demonstrated in the saliva by means of starch paper and fuming nitric acid (violet color). The reaction appears in healthy persons usually from six to eight hours after swallowing the desmoid bag. Its occurrence at this time points to a proper function of the stomach; if the reaction occurs later or not at all, it points to insufficiency of the stomach. This test is based on the fact that raw connective tissue, including catgut, is digested only by the gastric juice, according to Schmidt,[2] and not by the pancreas.

Sahli prefers his method to the usual examination of the stomach contents. He says: "I believe that the desmoid reaction informs us not only how quickly the gastric juice is able to dissolve the connective tissue, but indirectly it shows how well the meal with which the bag has been given has been digested."

It is natural that such a method, if practicable, might be of considerable use. Investigations on the value of Sahli's method were made by Eichler,[3] Kühn[4] and Kaliski.[5] They were all favorable and Sahli's assertions were entirely confirmed. Kaliski even says that the various degrees of acidity can be determined from the strength and the time of occurrence of the reaction. He says in his conclusions:

"1. A deep blue color of urine after from four to seven hours speaks for hyperacidity. If the acidity is normal the reaction occurs after from seven to twelve hours; the first urine is light blue.

"2. In subacidity or motor insufficiency the reaction occurs only on the following day."

As already mentioned, the reaction is based on the solubility of raw connective tissue (catgut) in the gastric juice and not in the pancreatic secretion. Ogata and Schmidt have made these assertions regarding connective tissue. While I[6] was working on my method of testing the functions of the digestive apparatus by means of glass beads loaded with different food stuffs—I looked for a substance that would be soluble in the stomach and not in the bowel. Naturally I turned to catgut because it can be so easily handled. At first I was satisfied with the results obtained. Soon, however, it became evident that catgut was also soluble in the digestive apparatus of patients with marked achylia gastrica. This proves that catgut may be digested in the bowel. In order to establish this fact I made the following experiment: A catgut bead was placed in melted mutton fat and, after solidification of the fat which thus coated the bead entirely, it was given to healthy persons. These beads were then recovered in the stool and found without the catgut. The latter must have been digested in the bowel, as the stomach could not attack the fat.

Although these experiments seemed to show that catgut was hardly suitable as an indicator for gastric digestion, yet I decided to try the desmoid test on some patients. I selected several cases of achylia gastrica, simple and complicated, and tried the desmoid test on these patients. As there was no gastric juice present in these patients, the desmoid test, if it were to be really useful, ought to be negative, otherwise it could not be used for ascertaining the condition of stomach digestion.

REVIEW OF THE CASES.

CASE 1.—A. S., male, was suffering from achylia gastrica, took a desmoid bag filled with methylene blue. Five and one-half hours later the patient noticed that the urine was blue.

CASE 2.—G. N. W., male, suffering from achylia gastrica and subacute enteritis, was examined Feb. 13, 1906, one hour after a test breakfast, with the following result: HCl = 0; rennet = 0; T. A. = 8. He then received Sahli's desmoid bag with methylene blue. Seven hours later the urine was blue.

February 17: The stomach contents were again examined after a test breakfast: HCl = 0; rennet = 0; reaction, neutral. Shortly after this examination (at about 10 a. m.) the patient received a desmoid bag with methylene blue. At 12:30 he took his dinner consisting of a plate of soup, veg-

1. Sahli: "Über die Prüfung des Magenchemismus unter natürlichen Verhältnissen und ohne Anwendung der Schlundsonde. Desmoidreaction, eine neue Untersuchungsmethode." Correspond Oesterblatt f. Schweizerärzte, 1905, Nos. 8 and 9.
2. Schmidt, Ad.: Deutsch med. Wochft., 1899, No. 49.
3. Eichler: Berlin. Klin. Wochft., 1905, No. 50.
4. Kühn: Münch. med. Wochft., 1905, No. 50.
5. F. Kaliski: Deutsche med. Wochft., 1906, No. 5.
6. Einhorn, M.: "A New Method of Testing the Functions of the Digestive Apparatus," Med. Rec., Feb. 10, 1906.

etables, two scrambled eggs, butter and bread. At 3:30 p. m., three hours after this meal, the stomach contents were removed; the chyme was yellowish from admixture of eggs, its reaction was neutral, and it did not contain rennet ferment. An hour later the patient emptied his bladder, the urine was blue.

February 18: The piece of rubber without the catgut was found in the stool.

February 21: The patient took another methylene desmoid bag. In the evening the urine was its natural color, also on the following day. The urine, therefore, did not turn blue.

February 24: The patient again received a desmoid bag.

February 25: The urine was of a normal color and did not turn blue.

Case 3.—L. L., male, suffering from cancer of the stomach, achylia gastrica and enteritis, took a methylene blue desmoid bag Feb. 20, 1906. On the following day (eighteen hours after taking), the urine was colored greenish as well as the stool. An examination of the stomach contents on February 21 showed entire absence of gastric juice.

Case 4.—C. P., male, suffering from achylia gastrica, was examined on Feb. 24, 1906, one hour after Ewald's test breakfast. *Result:* HCl = 0; rennet = 0; reaction, neutral. Shortly after this the patient received the methylene blue desmoid bag; four hours later the urine was blue.

REMARKS.

In these four cases in which there was a complete absence of gastric juice the desmoid reaction was positive. Only in Case 2, in which the desmoid test was applied four times, a varied condition was observed, the test being twice positive and twice negative. I usually examined these patients with the desmoid test on the days on which I tested their gastric secretion by means of the stomach tube, in order to be certain that no gastric juice was present. As the desmoid test was usually positive, I had to conclude that it was entirely unsuited for the examination of the stomach secretion, i. e., that it did not indicate whether gastric juice was present or not.

Sahli himself has been led to think that some error might be attached to the method, for he says: "On the one hand we have cases in which the test breakfast shows a lack of free HCl and yet the digestion appears to be sufficient according to the desmoid test; on the other hand, there are cases in which the digestion appears to be insufficient with the desmoid test, although after the test breakfast free HCl is found. I naturally thought at first that the desmoid test had some inherent fault. I was unable to discover it, however, and came to the conclusion that, on the contrary, these differences and apparent contradictions furnish a plain illustration of the value of the method and the defectiveness of previous procedures."

Sahli thinks that after a test dinner there is sufficient gastric juice even when the test breakfast shows an absence of free HCl. This would hardly correspond with the usual clinical experience. In order, however, to controvert even this objection of Sahli's I made the following experiment: In Case 2 I made a second desmoid test. Five hours after the patient had taken the methylene blue desmoid bag and three hours after a larger meal I again examined the stomach contents and found first, an entire absence of gastric juice and, second, no blue coloration of the stomach contents, although the urine voided shortly afterward was blue. In this case the reaction must have occurred in the bowel; otherwise the urine would not have been colored.

All in all, I must say that Sahli's desmoid reaction is unsuitable for the examination of the stomach functions because catgut is digested in the bowel as well as in the stomach.

SANITARIA AND TENT COLONIES.

DO THEY PREVENT AND CURE TUBERCULOSIS?*

DANIEL LICHTY, M.D.
ROCKFORD, ILL.

Whether sanitaria and tent colonies are the best means of treating and preventing tuberculosis is, it seems to me, a seasonable question. We easily recall how our old friend, the pendulum, is called on to picture for us a point. The proneness of a majority to assemble at either terminal of the arc is too true to be successfully refuted. The psychopathy of majorities must still be recognized.

It is not from a spirit of unkindly or adverse criticism or vicious iconoclasm that the subject is presented here in the form it is, but in order that a negative presentation may bring out the discussion the subject merits. It is realized that this exclusive and expert management as a form of treatment of tuberculosis has passed beyond the incubating period and is now in its maturity with abundant material for its defense. The potency and beneficence of pure air and sunlight has always been recognized. When the king asked Diogenes what greatest favor he could do for him, Diogenes asked the king to step out of his sunlight.

THE HOME THE UNIT.

As the home is the universally admitted unit of the state, its stability and integrity should be recognized as the first of all the agencies in the prophylaxis of disease, as well as in the prevention of crime. On the home foundation is built all that is good in state or individual, ethnically, ethically and sanitarially; here is the battle-field of bacteria, the vanquishing of which means the prevention as well as the cure of disease.

The ever-present and forever-enduring desire of the physician is to prevent disease, to alleviate suffering, to exalt mankind and to save and prolong human life; or, as Sir Thomas Browne, the quaint doctor-philosopher of the early seventeenth century, euphoniously expressed it, "It is better to appease pain than to invent pleasure." He who first and best does this, by word of mouth or touch of pen or hand, best serves his fellow-men; this endeavor, often arising to an aspiring, and may be some times erring ardor, has led men's minds to widely diverging views and ways.

In the zenith of his fame the eminent Louis Agassiz received urgent and complimentary invitations from numerous learned citizens and bodies across the seas to visit them, to aid some line of study or to direct some interesting research to a satisfactory conclusion; to all of which he replied that he had a field nearer home in which he wished to direct investigation. Immediately the scientific world was agog to know what great discovery was about to be made, and students and scientists began soliciting invitations and making inquiries as to his work. He replied that there were a great many things in his backyard strange to him and that needed investigation. So I am assured that in the investigation and study of the prevention and treatment of tuberculosis there are a great many things in our own vestibules as well as backyards that need investigation. We have not kept near enough home, in more senses than one; home study and homemaking is a neglected profession.

RESPIRATION.

The so-regarded simple, though most important, function of existence, respiration, hardly receives a

* Read at joint meeting of the Winnebago County Medical Society and the Central Wisconsin Medical Society, Jan. 30, 1906.

thought in our economy or training until deranged. The newly born babe is so wrapped in its swaddling clothes that it has to battle for its breath, and the numerous instances of "found dead in bed" are only cases of a babe smothered for want of air. Even the quality of air it gets is strained through many layers of soiled and not aseptic cloths. From this time on, no thought is given to the kind of air it breathes; it lives by sufferance and by suffering alone; but what it shall drink and later eat engages all attention. Food, food for the palate and not for the needs, is sought in every clime, in land and sea, and air, *but not of the air itself;* lowest fungi and highest thorough-bred alike are devoured; "balanced ration" and more often unbalanced are devised and consumed, and only the extreme limitations of the receiving viscus stops the intake. Then what medicines are sought to digest the incongruous mess? Every acid and every alkali, enzymes and peptones, natural and synthetic, are invoked to aid and digest the monstrous mass—for it is no longer food—remaining in the worn and wearied stomach.

The waters of Abana and Pharpar, of the mountains and valleys of Egypt, Europe and America, have been sought and urged for drink; they have been boiled and filtered of their organic salts and others added; they have been drunk boiling hot and ice cold; their gases driven off and others added at the ingenuity or option of the concocter. With the gastronome thought continues dominant for newer foods and more of them, for more capacity and more area, while the pneumogaster remains an unknown and faultily used territory.

Malnutrition from gastritis, apepsia, benign and malignant disease of stomach, if basically admitted, are as prevalent as tuberculosis and about as fatal, because more unamenable to managerial treatment; and from this polluted pool there is poured through the chyle duct into the vena cava descendens into the right auricle and into the lungs many of the diseases of the lungs. Chalmette, of the Pasteur Institute, announces, in his latest report, that, in the immense majority of cases, tuberculosis of the lungs is acquired through this channel from ingestion of bacillus-laden dust and food débris.

The literature on cooking is coexistent with civilization; enough recipes are written to fill a national library, and cooks, outdoing doctors in recompense, are the highest salaried of artisans. But who, with respiratory diseases causing more deaths than all other diseases combined, has heard as much written or said of the amount or quality of air to breathe or how to use it, or who teaches or studies pneumodynamics? From the proximal vestibule at the nose to the most distal cecа of the respiratory tract, who knows among the laymen, or cares among physicians, what becomes of the involuntary tidal air, to say nothing of the residuary air, or how to use the complemental or supplemental air we will know swarms with bacteria?

At early catechism, we were taught that "God breathed into man the breath of life," and most people go on as though the same beneficent Power was going to continue the pumping act for them. Complete inspiration and expiration is seldom called into use except by vocalists and professionals. If, after the indifferent use and wear of the brief period of adolescence, puberty is reached in the rocky road of life and there is a scratch a hacking cough and a "puncture" has taken place somewhere in the "inner tubing," and there is a hemorrhage or an emphysema, then alarming and immediate repair is demanded and the call is very imperious. Had the vestibule and anterior filters been kept clean, not to say aseptic, the areolar tissue of the lungs been systematically and persistently exercised, the alveoli expanded and, accustomed to use and good air, their capacity would have enlarged, their resiliency strengthened as exercise strengthens any part, resistance would have been increased, the invader vanquished and the abrasion, ulcer, puncture, would not have taken place.

The complete demands for oxygen in the economy are scarcely ever met; the adolescent boy goes about with stooped shoulders and a disfiguring acne, because his respiration does not stimulate his pleuritic or cutaneous capillaries and their accompanying lymphatics. His sister is flat-chested, has a pasty skin, cold hands and feet, a dislike for duty, an irritable temper and a lackadaisical manner, with often recurring amenorrhea, because of deficient respiration and lack of hematin and oxygen. She is the near and easy target for pulmonary tuberculosis, because no one taught her the importance of the life-saving function of complete respiration; she did always breathe, it will be said, but how much of the normal respiratory capacity of her lungs did she employ? She probably never knew the exhilaration of oxygen stimulation, the "compound oxygen" of God's laboratory? Her physician never called her attention to the necessity and quality of this food. He was derelict. He gave her an alluring preparation of iron with probably a label "made in Germany" on it (instead of made in Pittsburg). He may have recommended her to eat more and to walk in the air, but she did not know how to breathe or what for. If she ever had vocal lessons, it was to sing and never thought of it as to live; her lungs, her thorax, her physical heart, she knows nothing about; these organs and their functions are as ephemeral to her as are the nebulæ of the heavenly constellations which she will soon join in the primary class, unless she learns to breathe. Ask her to expand her chest, and she may reach an inch on the tape, scarcely over; put her at a spirometer and she may go beyond the one-hundred mark, more likely under; she retains in her lungs from day to day, may be from week to week, the residuary air of a germ-laden church, dance hall, theater, schoolroom, Pullman sleeper or dirty street car. The shallow tidal air is never supplemented by an inspiration or expiration that would replace the toxic compound; the autointoxication of residuary food is now well taught and acknowledged; but the autointoxication of vicious and residuary air, who teaches or knows about this? The girl's bronchioles and air cells had become constipated and needed a purge. She can not get refuge in the ubiquitous pill, but she must breathe, exhale, or be left pneumotoxemic, probably tuberculous, certainly listless.

Our pneumonias are no longer regarded as local infections, but systemic; and so is tuberculosis, with this distinction that one is acute and overwhelming, and the other insidious and usually chronic; both are residual air toxins; both are preventable diseases. No one taught this creature how to breathe or its necessity. She was waiting for germs lurking in that residuum to incubate; a more favorable soil, undisturbed, with warmth and moisture and rest could rarely have been prepared; she was waiting for the afternoon hectic and the delayed or missed menstruation before any one told her she ought to have air to breathe. Some one again derelict! Her lungs are atrophied to flabby appendages in her thin thorax from nothing but disuse; inability to inhale, less to exhale, non-resisting to disease from non-use. Non-resisting! This suggests the keyword to the preven-

tion of tuberculosis, which is breathe, breathe good air. The report of the National Bureau for the Prevention of Tuberculosis says, at the close of papers and discussions, that "the problem would soon disappear of itself if it were possible for everybody to breathe fairly pure air, to be clean with a reasonable effort, and to have enough of the right sort of food to eat." This is what called into existence the sanitaria where people get and are taught this; the isolated cottage, the lone tent and the open field. It should be taught in the home and practiced there first.

RESPONSIBILITY OF THE FAMILY PHYSICIAN.

When this health-breathing opportunity and period has passed and the sanitaria and the tents are reached, the golden apple has been stolen from the Hesperian garden of youth and the battle with the hydra-headed dragon of tuberculosis is begun. Can either or both defeat this foe? Again some one was derelict! Doctors as much as laymen have allowed themselves to be directed by the sugary sibillation of "specialist" and "expert"; the family physician, the most important factor in sanitary science and sanitary society, has been rendered by this presence too timid; he has not been persistent and positive enough; his innate modesty has influenced his dictum. The family physician is the agent to advise to prevent tuberculosis; the so-called "specialist" may be a medium to confirm the wisely-guarded suspicion and diagnosis of the family physician and convey the unpleasant intelligence to the subject or the family; but his affiliation with a teaching faculty of a medical college or a connection with a sanitarium or a tent colony has done and can do nothing to prevent tuberculosis in a family. Simon A. Knopf, the early interne in one of the first large sanitaria in Germany and the leader in urging states to provide infirmaries for the tuberculous poor, said,[1] at the Atlantic City session of the American Medical Association in June, 1904, "We must look to the family physician for the early curable cases." Further on he says, "The bacteriologic examination in individuals with early symptoms, even if repeatedly made, is but rarely positive, for there is not enough disintegration to show the presence of bacilli." In another paper he says, "No matter how many sanitaria and special hospitals for the consumptive poor we may have, we must look to the family physician for the bulk of the work in fighting the great white plague." Dr. Osler, who needs no introduction, said, "In the warfare against tuberculosis the man behind the gun is the general practitioner; the battle can not be won unless he takes an active, aggressive and accurate part."

STARTLING STATISTICS.

Applying statistical tests to this subject will not avail, because in its complexities are involved too many varied factors; all those of a complex body and of a complex disease, besides those of age, heredity, employment and environment; to detach a segment or fragment in this cycle and employ it in a consideration of the whole would be impossible and unreliable. Tuberculosis has domestic, filial, social and economic facets that must be adjusted to each other without friction in the management, and that means the treatment of tuberculosis.

Sociologists furnish the startling statistics[2] of four million families in the United States who subsist on four hundred dollars a year; employing the usual multiple of five to a family and there are over one-fourth of the inhabitants of the nation living on an income so close that there is no computation that would permit them to avail themselves of the alleged advantages of a sanitarium or a tent colony at present prices of management or supply them with the needed beef, eggs and milk at present trust prices. Should the bread winner himself be stricken, conditions would be still more deplorable. According to Robert Hunter's estimate, there are an equal number of willingly unemployed peripatetics, indigent by birth and training, disseminators of disease and vice, lawless in the moral code and utterly devoid of any appreciation of sanitation, on whom the law can apply no restrictions except vagrancy, which they court when winter time comes, polluting and inoculating fellow-prisoners in jails, almshouses and rural homes.

The question whether a patient should be told of his affliction is no longer a negative one; there is more safety in knowing and battling aright than in being deluded with ignorance of the disease and battling wrong. Then there is the aid through instruction that can be given to make a winning fight by one who, through study and training, knows, and that one is the family physician.

At the Tuberculosis Exposition in Philadelphia, Feb. 23 to March 1, 1906, of the dozen or more papers presented, not one dealt with *tuberculosis in the home*. The state, the municipality, the factory and the railroads were dealt with, but there was not a word about the home. And yet it is stated that the most attractive as well as graphic feature at the international congress at Paris last December was the little "model cottage bedroom, hygienically fitted up in the most modern and inexpensive way, showing not a speck of dust on the brightly varnished, lacquered or polished surfaces." An ideal object-lesson for a home and one practically attainable by any one anywhere. Even if statistics of sanitaria and tent colonies were admitted as to their real curative claims, they would be of little value. At the Philadelphia meeting of the Pennsylvania Society for the Prevention of Tuberculosis held last December in the Phipps Institute the statement was given out[3] that 90 per cent. of the people of this climate and country had implantations of tuberculosis some time or other; and with the familiar estimates variously furnished that from 8 to 11 per cent. of all deaths are from this disease, it must follow, if even the greater mortality per cent. is taken, that nearly 80 per cent. recover. Germany gives similar estimates, saying that "every one has had at some time a focus of tuberculosis," an estimate and claim no present sanitaria or tent colony has excelled or equalled.

Then, too, thus far in the crusade against tuberculosis, the inmates of all private and many public sanitaria have been volunteers of superior heredity and social environment; and even from these have been selected only those who on inspection and physical examination gave promise of successful management. Quoting Simon A. Knopf[4] again on sanitaria treatment, "Sanitaria are usually unwilling to receive cases that do not offer a favorable prognosis." Advanced cases are never taken. At the international congress held in Paris last autumn the statement was made and not refuted that "German sanitaria confessed that they accept only about three out of every ten presented them." Thus the presentation of figures from sanitaria as at present manipulated are of but little value until numbers and cases are admitted without regard to class or condition. Then,

1. The Journal A. M. A., Feb. 11, 1905.
2. "Success," January, 1906.
3. According to the Philadelphia American, Dec. 8, 1905.
4. New York Med. Record, November, 1905.

as to selection of applicants without bias, and on diagnosis only, another usually unadmitted difficulty is encountered. Dr. Bridge[5] says that "tuberculosis of the lungs always exists for a considerable time before it announces itself by signs or symptoms." Also Drs. Bradford and Seymour of Gouverneur Island Hospital, New York, in a paper read before the Hospital Alumni Association, at the Academy of Medicine, Jan. 13, 1905, say, "There are a not inconsiderable number of cases of such doubtful character that we keep them under observation many weeks or months before we can arrive at a diagnosis, if we are able to do so at all," and this in a dispensary where only "chest disease" patients are sent. One dispensary in Philadelphia last year passed on 900 patients of the poorer class without reporting a single case of tuberculosis. Still, in the face of such evidence, Dr. Trudeau of Saranac Lake Sanitarium says that "the average family physician can not make a diagnosis of tuberculosis." We all realize that to err is human, but to diagnose is divine. Those of us who have passed beyond the dogmas of the lecture room and the dicta of the so-called "expert," and have trained experience and historical data of cases and families extending through years, know that diagnoses have often been confirmed or defeated by the great arbiter Time, and that the family physician's early and guarded suspicions and directions as surely matured into a positive diagnosis and cure as those hastily culled by the college professor or the prolific and fluent author.

PLEA FOR HOME TREATMENT.

If, as Dr. Trudeau says, the family physician can not recognize tuberculosis until the physical symptoms have become well marked, then some one has been derelict; this doctor has the great five senses and the same gyra and convolutions; he has a diploma from the same college as his mentor, signed by the same faculty attesting his competency; he has access to the same text-books and reads the same journals; he is not distracted by the myriad subjects that divert his city confrère, and he studies his cases clinically as well as physically and can have bacteriologic examinations, and his diagnosis is to be relied on. The fast mail and rural free delivery keeps the remotest doctor in touch with the latest and the best at all times. He can become as faultless in technic and diagnosis and as familiar with management and direction of tuberculosis cases as the sanitaria director or employé. Knowledge is not confined to the few, but is the common heritage of all. The institutionalizing of a community is to be guarded against; the rightly cultivated independence of the average American citizen is to be encouraged and his dependence to be deplored. It is the initiative of the American that has marked his successful progress in civil, military and industrial life, and it is this that is to make him the efficient helpmeet of the family physician in the conflict with the great white plague. The dependence, servility and stoicism of the peasant on the other side of the pond is not to be taken as a guide for the citizen on this side; let us avoid institutionalizing him. The social and economic question, the first to be considered, can be best met domiciliarily; of these the family physician knows more for the family's sake and for society's sake than any one else can possibly know. The depression that domestic or rural isolation burdens the tuberculous child or adult with will deter its progress in an institution; ennui and nostalgia, the concomitants of a strange environment, both great depressants, would not have to be contended with in the home, besides the psychic stimulus of the family doctor's visits and his helpful words to the family would certainly be more inspiring than the words and presence of the indifferent patrol or nurse of an institution. The educational advantages of such a nucleus in a neighborhood would also be of incalculable advantage, because each would be an object-lesson carried on in the identical environment that the restored subject must spend the remainder of his or her days in.

Already S. A. Knopf, whose name I have freely used because of his close identity with sanitaria work, is modifying his views to adjust them to the home and has suggested the elevated house recess, the porch-lodge and window canopy inside the house to protect the patient and still be really in the open air, but under the care of parent or family, thus favoring domiciliary treatment. Numerous other devices, resourceful parents and an ingenious doctor will invent and adjust to the cottage, the tenement as well as to the mansion.

In a recent address before the Civic Betterment Association of Philadelphia, in the Civic Club's rooms, Dr. Walsh said:[6] "If consumptive patients are curable at all, they can be cured at home," an indication of the trend of thought among those engaged in research work. This is also the highly commendable sentiment and spirit prevailing in the Visiting Nurses' Associations of the various cities and states[7] which provide home treatment, nursing, care and, most and best of all, instruction and adjustment among thousands of consumptive poor with their own facilities in their own environment. It is this education of common people along common lines of wholesome living, the nutritive values of foods and their economics; above all else, the value of pure air and the means of obtaining it, that will vanquish this common foe of mankind. That this was the sentiment of the Paris international congress last October was brought out by Cheinisse in the *Semaine Medicale* October, 1905. Cheinisse remarks that "the first enthusiasm for the sanatoria as the sole means of salvation from tuberculosis has subsided. The recent international congress showed this declining tendency in a marked degree. The sanitaria for the well-to-do person who can modify his mode of life afterward so as to maintain the benefit derived is still the great benefit claimed at first. Members of the working classes, however, return from the public sanitarium to their old poverty-stricken environment. Their zeal and conviction will gradually be modified, and they will refrain from using their pocket cuspidors for fear of the prejudices of the proprietors and fellow-workmen, as it stamps them as dangerous. The rôle of the sanitarium in prophylaxis is thus illusory; its therapeutic rôle, evidenced by the restoration of the working capacity, is more than dubious, as it is subordinate to the natural progress of the disease and to the occupation of the individual. On the other hand, the expense of the public sanitarium as conducted in Europe (who would expect them to be any more economically conducted in profligate America) is out of all proportion to its purely palliative effect among the laboring classes." Cheinisse cites Beco to the effect that the sanitarium has been too long regarded as the pivot of the antituberculosis campaign, when in reality it is only a secondary element. He adds that experience in Europe has also shown that, "besides the true scientific and useful dispensaries,

5. Bridge "Tuberculosis."

6. Philadelphia American, Dec. 8, 1905.

7. The Journal A. M. A., Dec. 2, 1905.

pseudodispensaries spring up for advertising purposes, which, under the guise of benevolence, are in reality but centers of competing interests to advertise politicians connected with the inception and promotion of the dispensary. Thus patients find themselves at the mercy of regrettable practices where séances of electrization or ozonation, or exploitation of pharmaceutic specialties substitute real hygienic regulations." One need but look about in our own country to see where yankee enterprise would very soon lead to in such schemes.

The congress adopted a resolution to the effect that the sanitarium and the dispensary are neither exclusive nor predominant in the campaign against tuberculosis, but that the problem of healthy homes will always dominate its prophylaxis. Its control belongs to the individual and to the family and its prevention to the tutelage of the family physician.

The original unit of society remains the family, and through it the factor to prevent tuberculosis is the family doctor. There are, and will be only a few sanatoria, but there are and will be many family physicians.

The errors of our homes and home lives are so inconsistent and palpable that it is a wonder we have passed them by. Against constant knowledge and teaching, homes are made as hermetically tight as mechanical skill can make them. We chide the poor for listing their windows and stuffing the keyhole; but the well-to-do have impervious walls, double storm windows and double air-locks or pneumatic caissons at their doors; air is reheated from gilded radiators and pallor is the stigma of its inmates, and non-resistance to disease is their fate. Sunny days are the claim and boast of regions seeking recognition as health resorts and the preachment of the sanitarian; yet the architect is ignoring all this and designing houses and porches to shut out all the sun possible; porches that throw the house "in the shade" are in vogue. As if this were not enough, they erect a massive quartet of twenty-ton pillars to support a two-ton roof, and shade all the area possible. In the home the sunny window is taken up with a few straggling plants set in stable compost, while the baby or the invalid is hid in a shady and darkened corner behind the stove or over the radiator.

It has been asserted without contradiction that the demise of the North American Indian by the tuberculous route is due to his exchange of the tepee for the modern house. But the lesson and application is lost; for we triplicate their errors and invite the disease, and then with an atavism fought through many generations promptly relinquish our boasted civilization and again seek the tepee and the bush for relief without inurement to the storm or the relentless sun, and expect immediate relief from our woes.

Let us be sensibly consistent, and consistently sensible in this struggle against a self-invited foe; teaching that it is every one's duty to be enrolled in the defensive warfare, that the home is the fortress from which the battle must be fought in both its prevention and its cure; that the family doctor is the commanding general and must be prepared to do his duty to all, and the victory is ours.

Uncinariasis.—G. Peri (*Atti dei Lincei*), discusses how far *Ankylostoma duodenale* is parasitic in other animals than man. Peri has been able to infect dogs both by way of the mouth and through the skin, and there are good reasons for believing that horses are also susceptible to the infection. The practical importance of the liability of the domestic animals is obvious.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XX.

ALTERATIVES.

Alteratives are tonics, which, in some unknown way, favorably influence the processes of nutrition which have been disturbed by disease. They include the hematinics, which were discussed in the preceding chapter, the various preparations of mercury, and many, if not all of the preparations containing iodin, either free or in combination.

A number of drugs of vegetable origin, such as sarsaparilla, were formerly classed as alteratives, but these are, for the most part, merely purgatives, or else devoid of therapeutic interest.

The use of the thyroid gland in thyroid disease and in obesity, and of the newly discovered serum of Beebe in exophthalmic goiter, have a scientific basis, but the employment of the iodids in rheumatism and in syphilis, and of the mercurials in the latter disease is empirical, and in this connection the pharmacology of these agents is of minor importance since it throws little light on their therapeutic applications.

While the attempts to investigate the action of these agents have not led to satisfactory results, we may refer to the conclusions of J. Levi, who sought to compare the effect of mercurials and of potassium iodid on the metabolism and on the blood of syphilitics. He used potassium iodid and various organic and inorganic preparations of mercury in the second stage of the disease on 252 patients.

Levi found that the mercurials increase organic combustion and hasten metabolism in this condition. With the gradual disappearance of the disease the processes of nutrition improve, but relapses are frequent. He found no evidence, however, of a specific influence on the micro-organism of syphilis, but according to the most recent view mercury is antagonistic to this micro-organism.

If the use of mercurials be too greatly prolonged the number of red blood corpuscles is diminished. Levi found that potassium iodid had a similar general influence on the nutrition o syphilitics. While it causes an increase in the body weight, improves the blood, and adds to the muscular strength, it retards combustion and lessens metabolism. He explains its uses in tertiary syphilis by supposing that it neutralizes the disease products without increasing organic combustion.

Nearly all observers are agreed that the action of mercurials is almost wholly independent of the preparation chosen, the only essential for its action being that it shall be absorbed. Mercury probably circulates as an albuminate, which is soluble in the blood because of the excess of proteids and chlorids which it encounters there.

Owing to the obscurity of many of the symptoms of syphilis, and also to the fact that a comparatively large number of people are not willing to have it known to their physician that they suffer with so loathsome a disease, the condition is peculiarly favorable for the practices of charlatans. While there is no disease that more urgently demands the skill and judgment of the specialist, there is none, perhaps, that is so frequently treated by incompetents and even by patients themselves.

While we have always with us the humiliating spectacle of numerous nostrums ostensibly advertised only to the medical profession, some of them of vegetable origin and wholly worthless in syphilis, others consisting of one form or another of mercury and possessing few or no advantages over the older and better known official mercurials, we are also daily confronted with advertisements which disgrace our boasted civilization in that they seek to persuade the deluded victims to palter with the useless nostrums in the vain effort to treat themselves.

Mercury and the Mercurials.

HYDRARGYRUM.—U. S.—Mercury, or quicksilver, has been known from remote antiquity, and from the earliest times has played an important part, not alone in the industries, arts and superstitions, but also in the medical practices of the people who are acquainted with it.

Even at present, this substance, in the form of preparations produced by mechanical subdivision of the mercury, is widely used for external application as well as for internal administration. Several of the preparations of mercury have been mentioned under other headings, and we shall content ourselves, therefore, with recounting a few of the salient features of these several substances.

HYDRARGYRUM CUM CRETA.—U. S.—Mercury with chalk, also known as gray powder, represents 38 per cent. of metallic mercury, with clarified honey and prepared chalk.

Average dose: 0.25 gm. (4 grains).

MASSA HYDRARGYRI.—U. S.—Mass of mercury, better known as blue mass, contains 33 per cent. of metallic mercury, with glycyrrhiza, althæa, glycerin and honey of roses. An analogous preparation without the glycerin is frequently found in the shops under the somewhat incongruous title, "Powdered Blue Mass."

Average dose: 0.25 gm. (4 grains).

The mass of mercury and the mercury with chalk are widely used as mild mercurials and are especially popular for use with children.

Probably the most widely used as well as the most popular of all the preparations of mercury as an antisyphilitic is:

HYDRARGYRI IODIDUM FLAVUM.—U. S.—Yellow mercurous iodid occurs as a bright yellow, amorphous powder, without odor or taste, and is practically insoluble in water and in alcohol.

Average dose: 0.01 gm. (10 mg. 1/5 grain).

HYDRARGYRI IODIDUM RUBRUM.—U. S.—Red mercuric iodid occurs as a scarlet-red, amorphous powder that is nearly insoluble in water, but soluble in 116 parts of alcohol; it is also soluble in solutions of the soluble iodids and in solution of mercuric chlorid.

Average dose: 0.003 gm. (3 mg. 1/20 grain).

HYDRARGYRI CHLORIDUM CORROSIVUM.—U. S.—Corrosive mercuric chlorid, more popularly known as corrosive sublimate, has been used by the Chinese from a very early period. It was used by the early Arabian physicians, and a process for its production was described by Geber in the eighth century.

Mercuric chlorid occurs as colorless, rhombic crystals or crystalline masses, or, more frequently, as a white powder, and is odorless, but has an acrid and persistent metallic taste. It is soluble in about thirteen parts of water and in five parts of alcohol, more freely soluble in solutions of the alkaline chlorids.

Average dose: 0.003 gm. (3mg. 1/20 grain).

HYDRARGYRI CHLORIDUM MITE.—U. S.—Mild mercurous chlorid, better known as calomel, has been known to some of the Eastern people from a very early period. It appears to have been introduced in Europe about the beginning of the seventeenth century. It occurs as a heavy white powder, without odor and practically without taste, and is insoluble in water and in alcohol.

Average dose as an alterative: 0.05 gm. (1 grain).

There are several additional compounds of mercury, but as they are not used for internal administration they need not be enumerated in this connection.

Uses of Mercurials.

Since the use of mercury as an alterative is largely limited to those conditions resulting from syphilis, either acquired or congenital, we shall at present confine ourselves to discussing its employment in this way.

The pathology of syphilis is very often so obscure that it should be treated by the specialist when possible, and the following is intended for the general practitioner who finds himself compelled to undertake the treatment of such cases.

There are many distinct symptoms that are manifested by patients with a syphilitic history which fail to respond to the sons otherwise healthy), but which at once disappear when mercury is given.

Many authorities are opposed to any form of constitutional treatment for the first stage of syphilis because we have no specific, and the treatment may mask or even prevent the appearance of those symptoms which render the diagnosis absolutely positive, without preventing the ultimate effects of the disease, thus condemning the patient to the hardships of a long and painful course of treatment without positive knowledge of its necessity. Others rely on their ability to diagnose syphilis by the chancre and the history of the case, and proceed at once to the use of mercury.

Inasmuch as it is supposed that mercury has comparatively little immediate influence on the course of the disease at this time, we should be very sure of the correctness of our diagnosis before beginning a course of treatment which, to be effective, must be continued for many months, and is in itself not free from danger to the patient's health.

When the history of the case, together with the chancre, renders an immediate diagnosis certain, treatment should be instituted at once.

All mercurials are irritant when dissolved and there are serious objections to all the different available methods of administration. Chief among these objections is the disturbance of digestion, which is not wholly obviated even when the mercury is injected hypodermically or applied by inunction.

Diarrhea is often a troublesome result, for which opium is advised, but the evils attending its use are obvious and its presence should always be suspected in nostrums containing well-known mercurials that are advertised as being guaranteed not to cause diarrhea or other gastric disturbances. Mercury is eliminated by all the channels of excretion and the kidneys not infrequently suffer serious injury. It follows that we must try to find the method best suited to the individual case, and attention is directed to the following means of administration with some of the objections to be guarded against or at least kept in mind:

It is generally agreed that since there is no essential difference between the action of the various organic and inorganic salts of mercury in syphilitic conditions, we should be guided in our choice of agent by the method of administration which experience teaches us to be best suited to the individual case. If the digestion suffers from internal administration of mercurials, intramuscular injections may be tried; if these are too painful, inunction may be resorted to; but whatever method is followed we must be alert for the appearance of untoward effects and the diet must be the object of especial attention, one being selected which is nutritious while it is easily digested.

The mercurials are to be avoided or used only with great caution in cachexia due to other causes than syphilis, as their tendency to disturb digestion may increase the trouble.

They must be used only with the greatest caution in acute nephritis, but they seem to be less deleterious in the chronic form, though here, too, their action must be carefully observed.

Mercury is particularly potent for harm in pregnancy, especially in the latter months; abortion may occur or the child may suffer from mercurial poisoning.

For internal use either mercurous or mercuric iodid is usually preferred. The combination of mercuric chlorid with potassium iodid merely means the giving of mercuric and potassium iodids, as the reaction occurs as soon as the two substances are brought into contact. When the mercuric chlorid is used it is best given alone, in dilute solution, as it is incompatible with a great many substances.

Mercuric iodid may be given as follows:

R.	Hydrargyri chloridi cor.....gr. iii	20
	Potassii iodidi.....gr. x	60
	Aquæ dest., q. s. ad.....f.℥iii	100

M. Sig.: Ten drops in water after each meal. Increase each dose daily by one drop until symptoms of mercurialism are noted, then reduce to one-half.

This is not given as an example of the so-called mixed treatment, the dose of potassium iodid being entirely too small to be effective.

An example of a prescription for mixed treatment would be as follows:

R.	Hydrargyri chloridi cor.....gr. i	06
	Potassii iodidi.....℥ii	8
	Aquæ dest., q. s. ad.....f.℥iii	100

M. Sig.: One teaspoonful after each meal.

The object of giving the mercurials after meals is to insure the protection of the stomach, which the presence of food affords, against the irritant action of the metal.

The menstruum or diluent for the prescription for mixed treatment may be varied in a number of ways. The water may be substituted by any one of the medicated waters by elixir adjuvans, aromatic elixir, compound tincture of gentian, compound syrup of sarsaparilla, or by a mixture of one or more of these vehicles; the most important point to be guarded against is the attempt to combine the potassium and mercuric iodid with alkaloids in solution, as the mixture of potassium and mercuric iodids is one of the most effective of precipitants for alkaloids.

The characteristic effects of mercury are to be carefully watched for and when the gums become slightly tender the dose is to be reduced somewhat in amount and given but twice a day—after the morning and evening meals. It would be well to wash down the dose with milk, the proteid of which will serve to protect the stomach against the irritant action of the mercury.

Mercurous iodid is not so corrosive as the mercuric, or red iodid, and it is often given in pill form with some colloidal substance, such as extract of gentian.

The following is an example of the method of giving it in this way:

℞. Hydrargyri iodidi flav.....gr. vi |40
Extracti gentianæ.....gr. lx 4|

M. Fiat pilulæ No. lx. Sig.: One pill after eating.

This dose may be gradually increased by giving two pills after the mid-day meal, then two twice and finally three times a day until the symptoms of mercurialism mentioned above are seen. The dose is then reduced, as in the case of mercuric iodid, and given after the principal meals.

The mild mercurous chlorid, or calomel, may be used, but it is so insoluble that it is impossible to regulate the amount that is absorbed. Next to the administration by the mouth, the intramuscular injection is to be preferred, but it causes great pain and may result in abscess unless caution is observed. The addition of cocain hydrochlorid has been recommended by some authorities, but we should bear in mind the danger of forming a habit which is, if anything, even more terrible than syphilis.

The injection should be made by the physician, as the patient can not be trusted to do it satisfactorily.

Eight milligrams (one-eighth of a grain) of mercuric chlorid, or of the unofficial mercuric salicylate,[1] is dissolved in about ten minims of normal saline solution and injected deeply into the gluteal muscle, care being taken to avoid the spot which supports the body when the patient is seated. The part should then be massaged gently and an icebag or cold compress applied to relieve pain.

The injections may be repeated two or three times a week. The inunction method is very commonly employed in the establishments at Hot Springs, Ark., where many syphilities are treated.

The inunction may be done as follows: After inducing diaphoresis, 3 grams (about 45 grains) of mercurial ointment are rubbed into the skin, not on it, daily. As this must be applied to a rather large extent of surface it is customary to select six regions which are utilized on successive days, returning on the seventh day to the first region. These are the adductor surfaces of the thighs (the most convenient when the patient is to rub the ointment into his person), the armpits and the regions just below, extending anteriorly, and the subscapular regions of each side.

The ointments of the oxids of mercury and the oleate of mercury are more irritant than the mercurial ointment or the blue ointment, as the diluted mercurial ointment is now called.

Too much stress can not be placed on the necessity of giving close attention to the various bodily functions during the mercurial treatment to maintain the appetite and digestion unimpaired, to regulate the bowels and to secure scrupulous cleanliness of the body. The mouth should be the object of especial attention; carious teeth should be filled and the mouth and teeth kept thoroughly cleansed.

1. Six grains (0.4 gms.) of mercuric chlorid to the fluid ounce (30 c.c.) will equal ¼ grain (8 milligrams) in ten minims.

The Iodids.

The use of the iodids, like that of mercury, is well established on clinical evidence and we can only speculate as to the way in which it produces its effects in syphilis, chronic rheumatism and asthma.

OFFICIAL PREPARATIONS.

Iodum.—U. S.—Iodin occurs as bluish-black rhombic plates that have a metallic luster, a distinctive odor and a sharp and acrid taste. It is only slightly soluble (1/5,000) in water, but is readily soluble in ten parts of alcohol. It is also soluble in an aqueous solution of potassium or of sodium iodid.

Iodin was discovered about 1812 by Courtois, a French manufacturing chemist, but it was not used in medicine until after 1820, when its medicinal virtues were first made known by Dr. Coindet, Sr., of Geneva.

Average dose: 0.005 gm. (5 mg. 1/10 grain).

Liquor Iodi Compositus.—U. S.—Compound solution of iodin contains 5 per cent. of iodin and 10 per cent. of potassium iodid in distilled water.

Average dose: 0.20 c.c. (3 minims).

Tinctura Iodi.—U. S.—Tincture of iodin, as now official, represents an alcoholic solution of 7 per cent. of iodin and 5 per cent. of potassium iodid. The resulting tincture is freely miscible with water and with alcohol.

Average dose: 0.10 c.c. (1½ minims).

Acidum Hydriodicum Dilutum.—U. S.—This is a new addition to the Pharmacopeia and is intended primarily for the preparation of the syrup of hydriodic acid. It should contain not less than 10 per cent. by weight of the absolute acid.

Average dose: 0.50 c.c. (8 minims).

Syrupus Acidi Hydriodici.—U. S.—This is a clear, colorless, syrupy liquid that contains about 1 per cent. of absolute hydriodic acid.

Average dose: 4 c.c. (1 fluidram).

Attention may here be called to the fact that some of the manufacturers of so-called permanent syrup of hydriodic acid have taken advantage of the fact that glycerin is less susceptible to chemic change with hydriodic acid than syrup, and are, therefore, offering a glycerite of hydriodic acid under the name of syrup. While it can not be definitely proved that this substitution is a dangerous practice, it is, nevertheless, one of the little dishonesties that are so frequent in other lines of trade and should not be countenanced in connection with the production or the use of medicinal substances.

Syrupus Ferri Iodidi.—U. S.—This syrup, in harmony with the Brussels conference agreement, now contains about 5 per cent., by weight, of ferrous iodid.

Average dose: 1 c.c. (15 minims).

The official salts of iodin are all freely soluble in water and are also soluble in alcohol and alcoholic liquids. They are, in the order of their popularity and use:

Potassii Iodidum.—U. S.

Sodii Iodidum.—U. S.

Strontii Iodidum.—U. S.

Average dose of any of the above: 0.50 gm. (7½ grains).

Ammonii Iodidum.—U. S.

Average dose: 0.25 gm. (4 grains).

While mercury is employed in all stages of syphilis, but is most useful in the second stage, the iodids are employed in the second and third stages, but find their greatest field of usefulness in the third. The iodids enjoy a peculiar reputation in the treatment of those symptoms of tertiary syphilis, such as periostitis, which are manifested in connection with the bones.

Bronchitis, in those who suffer with a rheumatic or gouty diathesis, often shows greater improvement under the influence of this drug than with any other treatment.

The iodids are rarely used alone in the second stage of syphilis, but in combination with mercury, known as the mixed treatment, already referred to, they appear to be of value.

There can be no doubt of the usefulness of the iodids in relieving the symptoms occurring in the third stage of syphilis, and we have few therapeutic facts which are better attested.

The saturated solution of potassium iodid is, perhaps, the most commonly used form of administration.

The preparation of this may be entrusted to the pharmacist or it may be ordered as follows:

℞. Potassii iodidi 3i 30
Aquæ dest., q. s. ad. ..f. 3i 30

M. Ft. solut. Sig.: Five drops after each meal, the dose to be increased by one drop each day.

The increase in the amount to be taken may be continued until the symptoms of iodism arise or until sixty or more drops are taken daily.

The patient is to be instructed as to the symptoms to be expected, such as pain in the region of the parotid gland, etc.

We are as far from being able to explain the action of the iodids in chronic rheumatism and asthma as in syphilis, but their usefulness is indisputable and unquestioned.

It is of little consequence whether we choose potassium or one of the other inorganic iodids or an organic preparation. Potassium iodid has long been the most popular of all of the available preparations and will probably continue to be the most useful or, at least, the most frequently used.

Thyroid Gland.

When it was found that the feeding of thyroid substances would obviate the symptoms which ordinarily follow the removal of that gland, the suggestion was made that it might be effective in combating the symptoms associated with disease of the gland. This was found to be true, and the fact that the substance is effective when given by the stomach at once suggested that there must be some active principle formed in the gland. This principle, called iodothyrin, containing 9.3 per cent of iodin, possesses the same therapeutic properties as the gland substance; under its uses a great increase in metabolism occurs, superfluous fat disappears and an increased combustion of proteid takes place, explaining its use in obesity and the necessity for a diet rich in proteid when this substance is used for such conditions as myxedema.

GLANDULÆ THYROIDEÆ SICCÆ.—U. S.—Dessicated thyroid gland is officially described as "the cleaned, dried and powdered thyroid glands of the sheep, freed from fat." It occurs as a yellowish amorphous powder, having a peculiar odor; it contains the active ingredients of the thyroid tissue. It is partially soluble in water.

Average dose: 0.25 gm. (4 grains).

Thyroid gland or iodothyrin is indicated in obesity and after removal of the thyroid or when the latter, through disease, fails to function properly, as in myxedema and in hypoplastic follicular goiter.

NOTE.—In THE JOURNAL, April 14, page 1107, in Chapter 16 of the special article on "The Pharmacopœia and the Physician," the average dose of aqua camphoræ was given as 1 c.c. instead of 8 c.c. (2 fluidrams).

Clinical Note

EMPYEMA DUE TO THE INFLUENZA BACILLUS.*

HEBERDEN BEALL, M.D.
Medical House Officer, The Johns Hopkins Hospital.
BALTIMORE.

Empyema due to the influenza bacillus is probably of more common occurrence than is generally believed. Last year Boggs[1] reported from this clinic the only case found in the literature in which this organism has been demonstrated. I give below an abstract of this case and report a second case, in which I obtained the influenza bacillus in pure culture from the pus from the pleural cavity.

CASE 1.—(Bogg's case). A. B., male, white, aged 60, a tailor, was admitted to the hospital March 1, 1905. None of his family had had tuberculosis.

History.—The patient had always been well, except for a chronic cough. His present illness began about one year before admission, with a severe attack of bronchitis; at this time the expectoration was very profuse and he spat a little blood; occasionally he had fever and sweats. He had not been quite well since this attack and four weeks before admission his condition became much worse. The chief complaints on entering the hospital were pain in the side and night sweats.

Examination.—On examination he was found to have a diffuse bronchitis and a small amount of fluid in the left pleural cavity. This fluid, removed by aspiration, was clear and yielded no growth or ordinary media. The patient at this time had an irregular fever and sweats. His sputum was abundant, tenacious, mucopurulent and blood-streaked, and from it was grown *Bacillus influenza* in pure culture. The patient was discharged on request, not much improved. He was re-admitted eighteen days later, feebler and with more fever and drenching sweats. There were signs of a pleural effusion and small amounts of bloody fluid were withdrawn on several occasions; this was not saved for cultures. He had at this time a moderate leucocytosis. Two weeks after his admission pus was obtained from the pleural cavity and from this influenza bacilli grew in pure culture.

Treatment.—The patient was transferred to the surgical side. At operation the pleura was found much thickened and a considerable amount of grayish, odorless pus was evacuated. There was rapid improvement.

CASE 2.—L. H., male, white, aged 23, a saw-mill hand, was admitted to the hospital Nov. 14, 1905, complaining of "pain in right side, cough and night sweats."

History.—There was no tuberculosis in his family and he had always been healthy. As a child he had had measles, chickenpox and whooping cough; he had not had pneumonia, had never had a chronic cough or an hemoptysis. So far as he knew, he had never suffered from any cardiovascular or gastrointestinal disease. His work was moderately heavy and in a saw mill, where he was much exposed to the weather.

Present Illness.—The patient had been perfectly well up to March 1, 1905. On March 2, eight months before admission, he caught cold after exposure and had "grip" for five days; he was then up and around for eleven days, but did not feel well enough to return to his work. On March 13, he was awakened by a sharp pain in the right side of his chest; the pain became very severe and required morphin. He grew rapidly worse, became delirious, and remained so for two weeks. About four weeks after the onset he began to have cough, which was worse on lying down; he became short of breath and had to sleep in a sitting posture. About this time also he began to have drenching night sweats. After being ill for two months his right chest was aspirated and a pint of thick creamy fluid was obtained. This relieved the dyspnea and cough for a short time. Three weeks later paracentesis was tried again, but unsuccessfully. The cough, which was worse at night, gradually grew better. He had no hemoptysis at any time. On admission the chief complaint was of night sweats.

Examination.—Aside from the thorax no abnormality was made out. Examination of the chest showed signs of a moderate effusion into the right pleural cavity. The heart was not displaced. There was no anemia; the leucocytes were 9000. His pulse was 72 and the temperature ranged from 96 to 98.2 F. An exploratory needle was introduced and 15 cc. of a thick yellowish green pus obtained.

Treatment.—The man was transferred to the surgical side for immediate operation. The eighth, ninth and tenth ribs were resected and about 600 cc. of greenish pus evacuated. The cavity showed but slight tendency to collapse and on leaving the hospital he had rather a deep sinus, which discharged freely.

Microscopic Examination.—The report of the microscopic examination of the tissue removed is as follows: "Pleura lined with a hemorrhagic granulation tissue; no evidence of tuberculosis."

Bacteriologic Examination.—In stained smears of the pus obtained by aspiration were seen pus cells, much granular detritus and a few influenza-like forms. From this pus, agar plates, bouillon, glycerin agar and human blood agar slants were inoculated. No growth was obtained except on the blood agar. After twenty-four hours there appeared on this medium fairly numerous, clear, dewy, discrete pinpoint colonies, which were just visible. Transfers were made repeatedly to all the

* From the Medical Clinic of the Johns Hopkins Hospital.

1. Boggs: "The Influenza Bacillus in Bronchiectasis," Amer. Jour. Med. Sciences, Philadelphia and New York, 1905, vol. cxxx, pp. 902-911.

usual media, but no growth was ever obtained except on blood agar. On this, the organism grew fairly well and was kept growing for two months. The organism was a very minute bacillus with a tendency to polar staining; it often seemed constricted at its middle and often looked like a small diplococcus. It was non-motile. Involution forms appeared after several days' growth, long chains, resembling streptococci, and long thread-like filaments. This bacillus was best stained with dilute carbol fuchsin; it stained but feebly with methylen blue; it was Gram-negative. It corresponded in every particular, therefore, with the influenza bacillus described by Pfeiffer.[2]

These two cases are strong proof that Pfeiffer's bacillus may cause an empyema, and were cultures made systematically on the proper medium it is likely that this organism would be found to be the cause of not a few cases of "sterile pus" in the pleural cavity.

New Appliance

A CONVENIENT BURETTE APPARATUS

FOR USE IN THE CHEMICAL EXAMINATION OF THE GASTRIC CONTENTS.

WARREN P. ELMER, M.D.
Instructor in Medicine, St. Louis University.
ST. LOUIS.

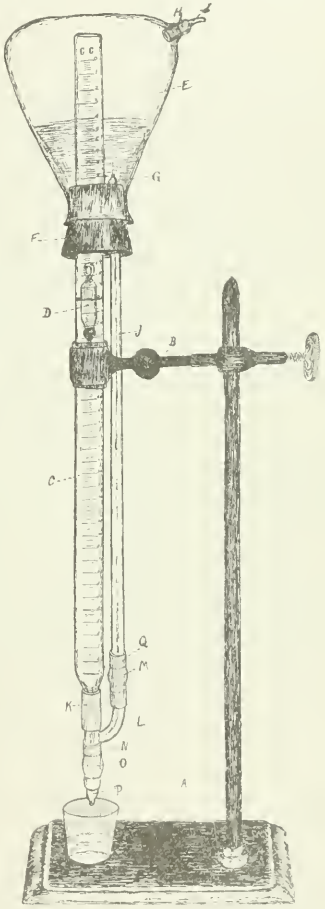
The growing importance of the chemical examination of the gastric contents as an aid to diagnosis renders it important that the up-to-date physician have such appliances at his command that this may be accomplished with the least possible waste of time and at the least possible expense.

With this fact in view I present the following description of a burette apparatus for decinormal sodium hydrate which I have found convenient for the titration of gastric contents:

The device consists of an ordinary burette stand (A), a burette clamp the jaws of which are covered by cork or rubber (B), a 50 c.c. burette (C) graduated in tenths, and fitted with a float (D). Through one of the openings of a two-hole soft rubber stopper No. 4 (F) is thrust the upper end of the burette in such a manner that the top of the burette projects above the stopper about four or five inches and the small end of the stopper is toward the top of the burette. Through the other opening in the stopper is thrust the end of a plain glass tube about one-fourth inch in diameter (J) drawn out by heating in a flame to a point (G), the opening of which is about a millimeter in diameter. The length of the tube should be that of the burette from this point to the bottom. The stopper thus equipped is placed in the neck of a 250 c.c. wide-mouthed Erlenmeyer flask (E), through one side of the bottom of which a hole (H) has been blown by heating it in the flame of a Bunsen burner until red and blowing vigorously, then heating again until the edges are smooth, and cooling slowly to prevent the glass becoming too brittle. In this opening, which is to serve as a vent and also as an opening for filling, is placed a small one-hole rubber stopper, through the opening of which is placed a small glass tube, drawn out so that the opening does not exceed one millimeter in diameter. This will allow sufficient air to enter and, if one wishes, it could be made to contain a little soda lime, thus freeing the air entering the flask from carbon dioxid and keeping the decinormal sodium hydrate absolutely accurate.

The bottom of the burette (C) and the free end of the glass tube (J) are connected by means of pieces of rubber tubing (Q-K) to a glass "T" tube (L), the stem of which is bent by heating in a Bunsen flame until it is parallel with one of the arms. The diameter of this tube is the same as the tube (J). Such a tube can be purchased for a small sum, but is rather difficult to make. Between the end of the long tube (J) and the T-tube (L) a space (M) is left about one-fourth inch long, in which a small piece of glass rod or a glass ball is placed to act as a valve. This can be made by heating a piece of glass rod one-fourth inch long and the diameter of the tubing until the edges are smooth.

To the free arm of the T-tube is attached by means of another piece of rubber tubing (N) a piece of glass tubing (P) three-fourths inch long and the same diameter as the T-tube and drawn out to a diameter of about two millimeters at the point. Between this tube (P) and the end of the T-tube a space (O) is left similar to that between the end of the long tube and the bent arm of the T-tube and similarly filled with a piece of glass rod or ball. By squeezing the rubber over the point (M) fluid flows from the flask into the burette and



can be stopped at any desired height, so that titration may always begin at the same point on the burette and by squeezing the rubber over the point (O) fluid is allowed to flow out of the burette in a very fine stream, which can be instantly shut off by releasing the rubber.

My idea of going so minutely into the description is that by following the directions any physician can make a similar apparatus, or at least have it made at a comparatively small expense. The decinormal sodium hydrate keeps very well in the reservoir (E) and is ready for use at a moment's notice, thus making the chemical analysis of gastric contents the work of a very few moments.

2. Pfeiffer: "De Aetiologie der Influenza, Ztschr. f. Hyg. u. Infektionskrankh.," Leipzig., 1893, vol. xiii, pp. 357-386. Pfeiffer und M. Beck: "Weitere Mittheilungen über den eneger der Influenza." Deuts. med. Wochft., 1892, vol. xviii, pp. 465-467.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, MAY 12, 1906.

LEUCOCYTES AND OPSONINS IN THE DEFENSE OF THE BODY.

In certain infections the chief means of defense of the body seems to lie in the production of antitoxic substances that neutralize the poisons of the invading organisms. In a second class of infections no distinct soluble toxins are produced, hence no antitoxins are formed, and the resistance of the host seems to depend on the development of bactericidal substances that destroy the bacteria. There remains, however, a large and important group of infections, including especially tuberculosis and infections with the pus cocci, in which neither antitoxic nor bactericidal substances seem to be produced to defend the invaded host, and with these the chief source of resistance seems to lie in the action of the leucocytes. Until recently the exact significance of the leucocytes in the defense of the body against these infectious agents was a matter of uncertainty, and the source of much dispute. As one of the first on the field, Metchnikoff's view that the leucocytes were essential in the combat against the bacteria met wide favor and for a time almost universal acceptance. After a time it was found that the blood serum contained substances that injured or destroyed the bacteria, and it was urged that the leucocyte was more a scavenger than a defender, picking up only bacteria that had been injured by the serum and not attacking bacteria possessed of their full virulence. Between the upholders of these two views had been waged active combat for some years, with the production of many pieces of evidence speaking for one view or for the other, when the observation that the serum contains certain specific substances that prepare bacteria to be engulfed by leucocytes, showed the way to a harmonization of the existing differences.

These substances have been particularly studied by A. E. Wright, of London, who gave to them the name "opsonins" by which they are generally known; and in this country by Dr. Ludvig Hektoen and his associates. In this issue we publish Dr. Hektoen's review of the subject as given by him in the Middleton-Goldsmith lecture of the New York Pathological Society, and wish in this place to call attention to a few of the salient features of the article. Opsonins seem to be of very essential importance in the defense of the body, for without their presence leucocytes can not take up bacteria (with a very few exceptions). They act on the bacteria, rather than on the leucocytes, and seem to alter the physical or chemical properties of the bacteria in such a manner that it becomes possible for leucocytes to surround and to engulf them. Opsonins exist in normal serum to a certain extent, but are increased by immunizing against the bacteria in question, and they may also be important in the phagocytosis of red corpuscles by leucocytes and other cells. The increased power of phagocytosis observed in immunized animals is, therefore, not due to a stimulation of the leucocytes, as Metchnikoff believed, but to an effect of the serum on the bacteria. This opsonic power of the serum, however, is not the same as its bactericidal power, for bacteria may live and grow well in serum rich in opsonins; but if to such a mixture of bacteria and serum a sufficient number of leucocytes be added the bacteria are soon engulfed and destroyed, so that the mixture produces no growth on culture media and no infection when injected into animals.

This leaves little room for doubt that we must answer in the affirmative the long contested question: Can leucocytes take up and destroy living, virulent bacteria, i. e., are they actually an important agent in the defense of the body against infection? The power of the leucocyte in this direction is limited, however, for if the bacteria possess a certain degree of virulence they then successfully resist phagocytosis through two processes: one being the neutralization of the opsonins, the other a direct injury of the leucocytes by toxic substances.

Many points of great practical importance have been brought forward through the study of the opsonins. Thus, as Hektoen points out, the artificial production of leucocytosis can not be expected to accomplish much effect if there is a deficiency in opsonins, and the use of substances that injure opsonin (i. e., are negatively chemotactic) should be avoided. Wright has shown the variations of the opsonic power of the blood under various conditions and has given us simple means for determining this power. Furthermore, he has aroused new hopes of success in the treatment of disease by vaccination with minute quantities of bacterial substance. By carefully observing the opsonic power of the patient's blood and by modifying the vaccination process accordingly, it seems to be possible to keep this power at a maximum, with a corresponding increase of resistance to the infectious organism. Encouraging results have been obtained in tuberculosis and pus infections, and there exist good reasons for hoping that the usefulness of this method may be found to be both real and large.

SHOCK AS A CURATIVE AGENT.

One of the most interesting of the later developments of the unfortunate catastrophe at San Francisco has been the announcement that a certain number of persons who had been for some time confined strictly to their beds and who were considered, at least by themselves and their friends, to be suffering from incurable paralysis, as

a consequence of the shock have been restored to strength enough to walk and in some cases to apparently perfect health. In one case, the patient is reported to have been absolutely bedridden for over fifteen years, yet was so completely cured that he was able to help very shortly after the earthquake in the work of relief. The newspapers have made much of these cures and yet they will probably not appear so surprising to physicians. It is not an unusual thing in medical experience to have a patient who is suffering from hysterical paralysis frightened into activity by the occurrence of a fire or by a visit from burglars or some act of violence in his or more often her immediate neighborhood. The cure of hysterical mutism in the same way is an old-time tradition in medicine, of which Hippocrates has made mention.

What these cases illustrate is the wonderful power that the mind has over the body for good and ill. The original paralytic condition is due to the loss of control by the central nervous system over the muscles of locomotion. The restoration of control is brought about by the overpowering impulse of the will which reasserts co-ordination in spite of the inhibition of the neurotic condition. The earnest therapeutist can scarcely fail to be envious of Nature's methods and success in such cases. The great power for good that mental influence may have is thoroughly recognized, but sufficient efforts, as a rule, are not made to make use of it in such a degree as would place it among the important therapeutic agents. In recent years a definite effort has been made to systematize the influence of suggestion so as to bring mental sway into play, at least as an auxiliary in the treatment of many affections which, even though they are not entirely due to nervous conditions, have many neurotic elements.

As the result of the modern introspection, coupled with the half knowledge of things medical that has been rendered possible by a perverted activity of the printing press, there are but few serious ailments which are not complicated to some degree by neurotic symptoms. Even so serious an organic condition as apoplexy, during the course of improvement after the effects of the first shock have passed, may present definite neurotic or hysterical symptoms that are sure to delay convalescence. In woman particularly, bedriddenness may result and may continue for years, because apparently the hysterical condition will not allow the patient to gather enough courage to attempt ordinary movements. Even in such cases fright has been followed by a reflex response that made locomotion possible. Other intense emotional stresses, as religious feelings or maternal solicitude, produce similar results. Suggestion may play a like rôle. It would seem to be of first importance, then, that the medical lesson emphasized by so serious a calamity should not be lost, and that mental influences should come to have a more systematic place in our modern therapeutics.

If employed with proper confidence and with systematized individualization, this branch of therapeutics, as we perfectly pointed out,[1] has proved eminently helpful in the hands of experts and will undoubtedly accomplish much for the general practitioner who avails himself of it in the right spirit.

OLD-TIME MEDICAL AND SURGICAL ANTICIPATIONS.

It is so generally the custom to consider that medicine, as we know it at the present time, is entirely the result of nineteenth century investigation, that it is often forgotten that for many centuries intellectual men were at work in the European medical schools investigating and teaching truths in medicine and surgery. How many of our modern discoveries are really the refinding of forgotten truths may perhaps be most easily realized from a reading of Professor Allbutt's[2] address on the "Relations of Medicine and Surgery to the End of the Sixteenth Century," which was delivered at the St. Louis Congress of Arts and Science, in 1904, and which has recently been published. This book is a treasure house of the wonders of old-time medicine with definite reference to the works in which further details of information may be obtained.

It is not a little surprising for the modern, rather self-complacent student of medicine to learn that even in the thirteenth century there were original and independent observers in medicine and surgery who made discoveries of great importance. At that time there was no distinction between the physician and the surgeon and these great medical scholars were distinguished in both departments. Of one of the best known of these early writers on medicine, Guglielmo Salicetti, of Piacenza, Dr. Allbutt says:

"William Salicet fully recognized that surgery can not be learned from books alone. His surgery contains many case histories, for he rightly opined that good notes of cases are the soundest foundation of good practice; and in this opinion and method Lanfranc followed him. Salicet discovered that dropsy may be due to a 'durities renum'; he substituted the knife for the Arabist abuse of the cautery; he investigated the causes of the failure of healing by first intention; he described the danger of wounds of the neck; he sutured divided nerves; he forwarded the diagnosis of suppurative disease of the hip; and he referred chancre and phagedena to *coitus cum meretrice.*"

These are indeed some surprising anticipations of things often said to be quite typically modern. Usually the first hint of the connection between kidney disease and dropsy is thought to be less than a century old and as for union by first intention that is ordinarily considered a matter of scarcely more than the last quarter of a century. At least one of Salicet's pupils went

1. The Journal A. M. A., March 31, 1906, p. 958.

2. "The Historical Relations of Medicine and Surgery to the end of the Sixteenth Century," T. Clifford Allbutt, Regis Professor of Physic in the University of Cambridge. London and New York: Macmillan & Co. 1905.

even farther and added new ideas of the greatest significance to practical surgery in a book of which Allbutt says:

"Lanfranc's 'Chirurgia Magna' was a great work, written by a reverent but independent follower of Salicet. He distinguished between venous and arterial hemorrhage and used styptics (rabbit's fur, aloes, and white of egg, which was a popular styptic in elder surgery), digital compression for an hour, or in severe cases ligature. His chapter on injuries of the head is one of the classics of medieval surgery. Clerk as he was, Lanfranc, nevertheless, saw but the more clearly the danger of separating surgery from medicine."

It is one of the favorite ideas of Allbutt often emphasized and recently taken up and favorably commented by Osler, that medicine should not be separated from surgery and that the internist should take every opportunity that offered to see the condition of organs within the body during life as it can be obtained only during surgical operations. Such a view is quite different from the one obtained at autopsies and is likely to prove supremely helpful for diagnostic purposes. Most of these distinguished physicians of the middle ages emphasize just this necessity for the physician taking surgical opportunities to obtain surer and more definite knowledge.

The teaching of at least one other distinguished member of the medical profession in those early times deserves notice. Henry Mondeville, who taught at Paris, was a student of Lanfranc and introduced new methods of wound treatment. Briefly summarized, they were as follows: "Wash the wound scrupulously from all foreign matter, use no probes, no tents except under special circumstances, apply no oily or irritant materials; avoid the formation of pus, which is not a stage of healing, but of complication." "Wounds dry much better before suppuration," to use his exact words, "than after it." It seems unfortunate that such clear-headed results of investigation should have been lost to mankind for nearly seven centuries and the fact is a warning of the instability of even our modern scientific progress, unless care is exercised not to let theory replace observation in the domain of medicine.

THE CALIFORNIA CATACLYSM; AN APPEAL

Naturally, as time passes, the newspapers are devoting less and less space to the California cataclysm, and the emotional phase of the public mind is disappearing—the public is already forgetting. So also the excitement of those on the spot is supplanted by a grim realization of the terrible conditions that have resulted from the combination of earthquake and fire; to a realization of the hardships, the ordeals and the problems before them. While we who are away are forgetting, those who are there are realizing more and more the magnitude of the calamity. They are realizing, too, the deprivation of all of the luxuries and many of the things that had been heretofore considered necessaries of life. As Dr. Philip Mills Jones says, in a letter just received, "San Francisco seems more horrible to me every time I see it."

As more definite information reaches us it becomes more evident that the worst has not been told; that the actual needs of many physicians in San Francisco are such that they must have help to put them on their feet. This applies to many who were in good circumstances, who had well-furnished homes and offices and good practices. All are gone, even the practices that they had built up. But the sufferers are men who are not asking for aid, and will not ask; they are not of that kind. Yet others, who are there temporarily and who know the conditions, are asking in their behalf. An army surgeon, who prefers that his name be not mentioned, says: "Use your influence to get the doctors all over the country to aid the men here to get started; the condition of hundreds of physicians here is truly pitiful, but they don't complain." Dr. Kenneth A. J. Mackenzie, of Portland, Oregon, who has been in San Francisco since the earthquake, in a telegram, says: "Please appeal through THE JOURNAL columns to best traditions of our profession to aid brethren stripped of all property and means of revenue and support."

We again, therefore, appeal to our readers and to the profession of the country for contributions to the relief of our brethren in San Francisco and other California points. There is hardly a physician who can not contribute at least one dollar. The various churches, lodges, etc., are raising special funds for their own particular people: let us not allow our brethren to suffer more than is necessary. As is noted in another column, instruments, books, etc., are needed. Books especially will be welcome. The libraries of the San Francisco and the Sonoma County medical societies are destroyed. In the near future we must undertake to help them get another, but there is plenty of time for this. Meanwhile, we repeat that the Board of Trustees of the American Medical Association authorized THE JOURNAL to solicit subscriptions for this cause to accommodate those who might not know how to send their contributions. Some individuals and societies may find it more convenient or more satisfactory to send their contributions direct. All that is desired is that every physician who is able shall contribute something for the California profession in need.

SODIUM CITRATE AS AN ADDITION TO MILK MIXTURES FOR NURSING INFANTS.

It will not be denied that a great advance has been made in recent years in the successful hand-feeding of infants deprived, for one reason or another, of their natural nourishment, mother's milk. While the milk from some other animals approaches more nearly in composition that of nursing women, still, for practical purposes, cow's milk, variously modified, is the most serviceable substitute. By the method of percentage feeding

it has become possible to determine and to adjust the proportions of the constituents in milk mixtures for nursing infants in such a manner that the amounts of water, proteid, fat, sugar and mineral matter shall closely approximate the proportions of these in healthy mother's milk. Two facts, however, need to be borne in mind in this connection. The first is that there are differences in the quality as well as in the quantity of the ingredients of cow's and mother's milk, respectively, and, second, that the digestive power and capacity differ somewhat in different children, and that within certain limits the healthy child is capable of adapting itself to variations in the constitution of the milk supplied to it as food, whether from its mother or elsewhere.

As is well known, cow's milk as compared with mother's milk contains too much proteid and too little sugar, and in adding water for the purpose of diluting the former the fat strength also is reduced, so that cream is added to restore the proper proportion. Of the proteids of mother's milk, albumin and casein are present in approximately equal proportions, while in cow's milk the proportion is about one to six. Moreover, the casein of cow's milk forms a denser and larger curd, and is accordingly more difficult of digestion than the casein of human milk. Further, the latter has an acid reaction, while cow's milk has an alkaline reaction. Lime-water is commonly used for the double purpose of neutralizing the acidity of cow's milk and making a finer subdivision of the curd, but the best diluent is whey, which contains many desirable chemical constituents.

Within recent years the use of sodium citrate has been recommended for the purpose of lessening the size and the density of the curd yielded by the casein of cow's milk and thereby increasing its digestibility. A working formula consists in the addition of one grain of sodium citrate to each ounce of milk diluted with an equal amount of water. In a recent communication Dr. W. H. Wynn[1] reports highly satisfactory results in 69 cases from the mode of procedure described. Most of the infants suffered from milk-dyspepsia. In others the nutrition was impaired from the use of dilute milk mixtures. Four infants with scurvy were subjected to the treatment, and it was employed in nine cases in which it became necessary to wean healthy infants. It is suggested that the method may prove applicable also in the cases of adults requiring a milk diet from one cause or other. Results of a similarly favorable character were reported at the last meeting of the American Pediatric Society by Dr. Harry L. K. Shaw,[2] who employed sodium citrate as an addition to milk mixtures in 22 cases.

SURGERY FOR CRIMINALITY.

One or two stories have been recently circulated in the newspaper press of cases of marked moral reformation following operative procedures on the brain, and the usual tendency to generalization from such has been very much in evidence. Some of the newspaper writers see a prospect ahead, and not in the very distant future, when criminality will be considered a surgical disease and reform methods take this direction more or less exclusively. There is no doubt that if surgery was carried sufficiently far a good deal of crime could be prevented. Amputation of a pickpocket's fingers, for example, would check his operations at least for a while, and it is easy to imagine other reforms of the same character. It is safe to say, also, that any very extensive application of brain surgery on the criminal class would be likely to diminish their number, but the old-fashioned methods of reform by moral suasion and measures based on the theory of human responsibility will probably be the ones to be relied on in the future as in the past.

1. Birmingham Med. Rev., March, 1906, p. 123.
2. Arch. of Ped., March, 1906, p. 161.

THE PROGNOSIS OF PULMONARY TUBERCULOSIS.

While both clinical and pathologic evidence are not wanting in support of the curability of tuberculosis of the lungs, it is difficult to foresee the outcome in any given case. It were even better, perhaps, to speak of recovery rather than cure under such circumstances. All that the physician can do—apart, of course, from removing sources of infection and preventing dissemination of infective material—is to provide conditions favorable to subsidence of the tuberculous process and involution of the tuberculous lesions. The result after all, will be determined by certain qualities inherent in the individual, and these are beyond the range of clinical estimation, but that such defensive mechanisms can be fortified there is no doubt. The main factors contributing to this end are comprised in an abundance of pure, fresh air and a generous supply of easily digestible, nutritious food, in conjunction with rest and exercise in proper apportionment. By the adoption of these means, the disease can often be arrested, in fact it not rarely undergoes spontaneous arrest, even in the absence of special attention to these matters, and with the observance of proper precautions the arrest can be made permanent. In a discussion of the prognosis of pulmonary tuberculosis, in the course of a paper read recently before the Bristol Medico-Chirurgical Society, Dr. J. J. S Lucas[1] wisely emphasizes the fact that a tuberculous patient should never consider himself sound, at least not for some years, even after the disappearance of all symptoms. The appearance of the patient, the shape of his chest and the family history are of the greatest importance in prognosis. Of early symptoms hemoptysis by itself is rather a good sign, while dyspepsia is a bad one. The presence of fever at a single examination does not, as a rule, have any bearing on the prognosis, but persistent elevation of evening temperature for some time is of unfavorable significance. A rapid pulse is one of the worst omens. Of laryngeal complications, ulceration of the vocal bands alone is of little significance; swelling in the larynx is of much more serious import. Under these conditions the physical signs referable to the lungs are often deceptive. The effect of treatment can be gauged only by the condition of the patient several months after he has been dismissed from the treatment and has taken up duties he intends to pursue for the remainder of his life.

1. Bristol Medico-Chirurgical Review, March, 1906, p. 12.

Medical News

ALABAMA.

Commencement.—The Alabama Medical College held its forty-first annual commencement at the Mobile Theater, April 9, at which Dr. J. W. Abercrombie, president of the University of Alabama, conferred the degrees, and Dr. William H. Sanders, state health officer, delivered the charge to the graduating class. Dr. George A. Ketchum, the dean, made his annual report, and Dr. J. H. Penniman of Philadelphia, dean of the University of Pennsylvania, delivered the doctorate address.

ARIZONA.

Certificate Issued.—E. A. Hall, Prescott, whose certificate to practice was withheld by the Territorial Board of Medical Examiners last summer, and who began mandamus proceedings against the board to compel the issuance of the certificate, has been issued a certificate by the board, the cause for which it was withheld not having been confirmed.

Personal.—Dr. Claude Thompson has been elected chairman, and Dr. O. C. Ciass, secretary, of the Phoenix board of health. —— Dr. William H. Ward, superintendent of the Territorial Asylum for the Insane, Phoenix, has resigned, and Dr. Ray Ferguson, Nogales, has succeeded to the position.——Dr. Henry Dietrich and family, Morenci, have started for a prolonged European trip.

ARKANSAS.

License Revoked.—For violation of the anti-drumming ordinance Dr. R. O. Williams, Hot Springs, was fined $100 and his license to practice medicine in the state was revoked, March 31.

Wins Appeal.—Dr. T. B. Rider, Hot Springs, who was recently fined $100 and whose license was revoked on account of alleged violation of the city anti-drumming ordinance, and who appealed his case to the circuit court, won the appeal and will continue to practice.

Emergency Hospital.—It has been announced that on and after May 1 the Emergency Hospital of the Iron Mountain Railway for the Arkansas Central and Valley divisions, for the Little Rock and Argenta terminals, and for the Baring Cross shops, will be located at Little Rock and will be under the charge of Dr. S. S. Stewart.

Commencement.—The twenty-seventh annual commencement of the University of Arkansas, Medical Department, Little Rock, was held April 12. Degrees were conferred on a class of 26 by the governor of Arkansas, and the annual address was delivered by the Hon. J. N. Tillman, Fayetteville, president of the university. The doctorate address was delivered by Dr. John R. Dibrell.

CONNECTICUT.

Ely Will Found.—The will of the late Dr. John S. Ely, New Haven, has been found and offered for probate. Dr. Ely left an estate appraised at about $150,000.

March Deaths.—During March, 1,477 deaths were reported to the State Board of Health, 244 more than in February, 100 less than in March of last year, and 37 more than the average mortality for the month of the five preceding years. The death rate for the month was equivalent to an annual death rate of 18 per 1,000. Infectious diseases caused 258 deaths, or 17.4 per cent. of the total mortality. Nervous diseases caused 210 deaths; pneumonia, 207; heart diseases, 136; tuberculosis, 126; accidents and violence, 82; bronchitis, 61; influenza, 28; diphtheria, 27; measles, 22; whooping cough, 17, and cerebrospinal meningitis, 15.

DISTRICT OF COLUMBIA.

Hospital Opened.—The Potomac Hospital and Training School was opened with proper exercises April 23. Dr. John P. Green delivered the principal address. Dr. Albert R. Collins is vice-president of the institution, and Dr. Harry J. Williams, secretary and medical director.

Wants Prescriptions in English.—A bill has been introduced into the House of Representatives by Representative Brownlow of Tennessee to require physicians in the District of Columbia and the territories to write prescriptions in English as well as in Latin, in order to avoid the mistakes said to be made by druggists.

Disease Prevention. The commissioners of the district have forwarded to Congress, with a favorable recommendation, a bill for the prevention of scarlet fever, diphtheria, measles, whooping cough, chickenpox, cerebrospinal meningitis and typhoid fever. This bill calls for the compulsory report of all cases of the diseases mentioned and provides a severe penalty for violation.

Medical Association Officers.—At the annual meeting of the Medical Association of the District of Columbia, April 3, the following officers were elected: President, Dr. D. Olin Leech; vice-presidents, Drs. A. Barnes Hooe and Presley C. Hunt; secretary, Dr. Daniel W. Prentiss; treasurer, Dr. Frank Leach; censors, Drs. Louis Mackall, Sothoron Key and James A. Watson; delegate to the American Medical Association, Dr. George N. Acker, and alternate, Dr. George M. Kober.

GEORGIA.

Alumni Reorganized.—The alumni of the Medical Department of the University of Georgia, Augusta, reorganized April 19 with the following officers: President, Dr. J. Lawton Hiers, Savannah; vice-presidents, Drs. Sterling R. Gibson, Thomson, and W. W. Pilcher, Warrenton, and secretary and treasurer, Dr. Charles W. Crane, Augusta.

Personal.—Dr. J. T. Plunket has been elected a member of the board of trustees of the Medical College of Georgia, Augusta, vice Dr. De Saussure Ford, deceased.——Dr. Levi P. Hammond, Rome, has been elected physician of Floyd County, vice Dr. William A. Johnson, resigned.——Dr. J. Scott Todd, Atlanta, sustained a fracture of the collar bone by being thrown from his horse, April 12.

Wanted for Contempt of Court.—Dr. Millard B. MacAfee, Atlanta, who was arrested March 20 on a charge of violating the city ordinance by selling cocain, and who failed to appear for trial March 24, as ordered, was declared in contempt of court and a warrant was issued for his arrest. He was charged with selling cocain without a prescription, and also with prescribing cocain for certain of his customers and then filling the prescriptions himself.

College Commencements.—The annual commencement exercises of the Medical College of Georgia were held April 2, when a class of 31 was graduated. The addresses of the evening were given by Prof. David C. Barrow, acting chancellor of the university; the Right-Rev. Charles K. Nelson, bishop of Georgia, and Dr. T. D. Gunter.——The Atlanta School of Medicine on April 2 graduated a class of 21. Hon. Hooper Alexander was orator of the occasion, and diplomas were conferred by ex-Governor Norton.——The Atlanta College of Physicians and Surgeons held its fifty-second annual commencement, April 2, when a class of 52 was graduated. In the annual report made by Dr. William S. Elkin, dean of the faculty, it was announced that Andrew Carnegie had given $10,000 toward the erection of the new building, the cornerstone of which was laid April 6 and which is to cost $100,000.

ILLINOIS.

Fined for Misusing Mails.—Dr. Charles A. Nichols, Urbana, was convicted by a jury of using the mails for a scheme to defraud, and on April 27 was sentenced by United States District Judge Humphrey to pay a fine of $250 and costs, bringing the total up to $700, with imprisonment in jail until paid.

Coroner's Work for April.—During April the coroner of Cook County investigated 315 deaths, 137 of which were found to be from natural causes, 33 from railway accidents, 26 from suicide, 22 from falls, 18 from asphyxiation, 12 from drowning and 10 from burns and scalds. Nine homicides were reported during the month.

Special Train for State Society Meeting.—A special train for Springfield will leave Chicago via the Illinois Central Railroad Monday evening, May 14. A rate of one fare for the round trip will be made provided 150 can be secured. The names of those who intend to go should be sent to Dr. James H. Stowell, 103 State Street, at as early a date as possible that arrangements may be perfected.

Society Meetings.—Knox County Medical Society held its annual meeting in Galesburg, April 26, at which the following officers were elected: President, Dr. J. H. Brown, Rio; vice-president, Dr. George S. Chalmers, Galesburg; secretary and treasurer, Dr. George S. Bower, Galesburg; censor, Dr. William O'R. Bradley, Galesburg, and delegate to the State Medical Society, Dr. William H. Maley, Galesburg. The presidential address by Dr. Lawrence R. Ryan, Galesburg, was on the "Field of the Specialist," and Dr. J. F. Percy presented a paper on the "Borderland of Insanity." The meeting came to a fitting close with a banquet attended by both the medical and legal professions.——At the annual meeting of the Central Illinois Medical Society in Pana, April 24, the following officers

were elected: Dr. Frederick J. Eberspacher, Pana, president; Drs. Frank P. Auld, Shelbyville, and Wilbur C. Wood, Decatur, vice-presidents; Dr. Roscoe C. Danford, Pana, secretary, and Dr. John N. Nelms, Taylorville, treasurer.

Civil-Service Examinations.—Examinations for the medical staff of the Illinois Charitable Eye and Ear Infirmary, 227 West Adams Street, Chicago, will be held the latter part of this month by the Illinois Civil-Service Commission. There are now the following vacancies: One assistant ear surgeon, one assistant eye surgeon, one assistant pathologist, three internes.——Examinations for attendants in the hospitals for the insane will be held by the Illinois Civil-Service Commission the latter part of this month in various parts of the state. Male applicants must be between the ages of 21 and 45 years and must weigh not less than 155 pounds. Women should be between the ages of 18 and 45 years and weigh not less than 125 pounds. Men start at $25 per month, with board, lodging and laundry, and women at $18 per month. The communities producing the largest number of applicants will get the examinations. All applications should be addressed to Joseph C. Mason, chief examiner, Springfield, Ill.

Chicago.

Sentenced to Imprisonment.—Dr. A. Judson Booth, charged with mistreating young girls, was found guilty May 2 and sentenced to imprisonment for 18 years in the penitentiary.

Hospital License Revoked.—The governor, acting on the recommendation of the state home visitor for children, has revoked the license of Dr. George H. How, in charge of the Irene How Sanitarium.

Personal.—Prof. Dr. Trendelenburg, Leipzig, visited Chicago, May 11.——Dr. John T. Binkley has sailed for Italy.——Dr. J. A. Jerger, formerly interne in the Alexian Brothers' Hospital, has located in Waterloo, Iowa.

Cheaper Antitoxin.—The Memorial Institute for Infectious Diseases is said to be supplying the city with antitoxin at $1.50 per 3,000 units as against $5.25 for 3,000 units, the sum charged by the alleged antitoxin trust.

April Mortality.—The mortality for April was 2,770, equivalent to an annual death rate of 16.44 per 1,000. Pneumonia caused 548 deaths; consumption, 336; heart diseases, 211; Bright's disease, 194, and violence, including suicide, 170.

Farewell Dinner to Findley.—A faculty farewell dinner was given to Dr. Palmer Findley, assistant professor of gynecology and obstetrics, Rush Medical College, on April 26, at the Auditorium Annex, on the occasion of his departure from Chicago to take the chair of gynecology in the Medical Department of the University of Nebraska, Omaha.

Site for Hospital Secured.—Arrangements have been completed for the purchase of ground on Michigan Avenue, immediately north of the present site of St. Luke's Hospital, for the erection of the new building which is to cost $500,000. The site was secured for $145,000. The new building is to be six stories high and of fireproof brick construction throughout.

Communicable Diseases.—During April, 1,082 cases of communicable diseases were reported, as against 480 in April, 1905. The chief increases were in diphtheria, 273, or 80 more than the previous year; scarlet fever, 527, or 442 more than 1905, and measles, 196, an increase of 92. Two cases of imported smallpox were removed to the isolation Hospital during last week.

Deaths of the Week.—The total deaths from all causes for the week ended May 5, were 593, or 28 less than the preceding week. The mortality is equal to an annual death rate of 15.09 per 1,000. Pneumonia still leads the death causes with 115 deaths, and is followed by consumption, with 75; Bright's disease, with 42; violence, including suicide, with 34; acute intestinal diseases, with 30; cancer, with 27; nervous diseases, with 21; bronchitis, with 20, and scarlet fever, with 17.

The First Four Months of the Year.—During the first four months of 1906 there were 229 more deaths reported than during the corresponding period of 1905, although the death rate is almost the same. Pneumonia caused during this period in 1905, 1,857 deaths, and in the corresponding period of 1906 only one less. Tuberculosis was responsible for 466 fewer deaths in 1906 than in 1905. There were also 11 fewer deaths from apoplexy; 143 from bronchitis; 41 from convulsions; 57 from influenza; 38 from smallpox; 29 from measles, and 131 from whooping cough less than in the corresponding period of 1905. There were, on the other hand, increases in death as follows: Nephritis, 37; cancer, 60; heart diseases, 60; nervous diseases, 54; diphtheria, 27; acute intestinal diseases, 71; scarlet fever, 134; typhoid fever, 21; violence other than suicide, 79, as compared with 1905.

Home for Destitute Crippled Children.—The Home for Destitute Crippled Children, of which Dr. John Ridlon is surgeon-in-charge, has outgrown its original quarters and has completed a new building, the total cost of which was about $40,000. Of this amount $25,000 was donated by Mrs. R. H. McElwee for the erection of the outpatient department, which is to be a memorial to her daughter. At a recent meeting of the board of trustees Dr. Frederick W. Belknap was appointed consulting pediatrician; Dr. Gilbert Bailey, assistant orthopedic surgeon, and Dr. Coleman G. Buford, attending surgeon. A resolution was adopted to the effect that ruptured children are to be considered crippled children, and that as soon as proper facilities have been added to the home for handling such cases, those needing operation will be admitted as house patients. An out-patient department for ruptured children was opened May 1 under the direction of Dr. Buford. A dispensary for orthopedic patients is open on Monday, Wednesday and Friday from 1 to 4 p. m., and for hernia cases on Tuesday and Friday from 9 to 10 a. m. The object of the latter department is to supply trusses to destitute ruptured children, and to educate parents in the proper application and maintenance of the trusses. It is estimated that under proper management about 75 per cent. of the patients under 4 years of age will recover from rupture without operation.

INDIANA.

Election of Officers.—The Ninth Councilor District Medical Society met at Frankfort May 1 and elected Dr. Charles Chittick, Frankfort, President; Dr. George F. Keiper, Lafayette, secretary, and Dr. Edgar Cox, Kokomo, treasurer.

Personal.—Dr. Arthur E. Vinton, Muncie, has started East and will spend the summer in Germany.——Dr. Charles P. Davis, Galena, who was operated on recently in Louisville, has resumed practice.——Dr. John T. Anderson, Swayzee, was seriously injured in a runaway accident, May 2, near his home. He was thrown out of his buggy and fractured several ribs.

Asks Postponement of Trial.—Dr. Charles L. Landfair, formerly a practitioner of Bluffton, who is serving a term in the state penitentiary in Michigan City on account of illegal medical practice, has written to the State Board of Medical Examination and Registration, asking that his trial by that body be postponed until after the expiration of his term of imprisonment.

District Society Meeting.—At the annual meeting of the Second District Medical Society, held in Vincennes, April 24, Dr. George Knapp of that city was elected president, and Dr. A. B. Knapp, secretary. Dr. H. M. Smith gave a historical talk on the Medical Association of Knox County, showing that more than 90 years ago there was a medical society in the county. The next meeting of the society will be held in Washington.

New College Incorporated.—The articles of incorporation for the State College of Physicians and Surgeons, a new school to be established in connection with the Indiana University, Bloomington, were filed with the secretary of the state, May 2. The trustees named in the incorporation papers are Judge Vinson Carter, Dr. Allison Maxwell, Dr. John F. Barnhill and W. C. Bobbs, Indianapolis; Dr. M. V. B. Newcomer, Tipton; Dr. Charles Stoltz, South Bend; Dr. Charles F. C. Hancock, Jeffersonville; Dr. John C. Sexton, Rushville, and Messrs. James D. Showers, Fred Matthews and Henry B. Gentry, Bloomington.

Approves of Medical College.—At a meeting of the Third Councilor District Society at West Baden, April 21, the following resolutions, introduced by Dr. David C. Peyton, Jeffersonville, relative to the recent merger of Indiana medical schools into the medical department of Purdue University, were adopted:

Resolved, That the Third District Medical Society cordially approves the union of these schools and hereby expresses its desire that the legislature shall ratify the same and thereby secure a permanent school of medicine under the control of Purdue and located at Indianapolis, where ample clinical and other facilities can be obtained; also

Resolved, That we approve the wisdom and self-sacrifice of the faculties of these three schools in uniting in donating to the state their combined efforts and their valuable property, which consists of a magnificent college building, thoroughly equipped and out of debt, and has an excellently organized, experienced and capable faculty.

March Diseases and Deaths.—During March tonsillitis was the most prevalent disease reported. Pneumonia was less prevalent than in the preceding month, and bronchitis stood third, followed by influenza, rheumatism, pleurisy, whooping cough, scarlet fever, typhoid fever, intermittent and remittent

fever, diarrhea, erysipelas, measles, diphtheria, smallpox, puerperal fever, peritonitis, typho-malarial fever, cerebrospinal meningitis, dysentery, cholera morbus and cholera infantum. Smallpox was reported epidemic in Allen County, where 38 cases occurred. In all 124 cases of smallpox were reported from 16 counties, with no deaths. Typhoid fever was reported present in 46 counties, 258 cases and 37 deaths. Pneumonia caused 469 deaths or 115 less than occurred in the corresponding month of 1905. Deaths by violence numbered 112, of which 7 were homicides and 20 suicides. The mortality for the month was at the annual rate of 17.3 per 1,000.

IOWA.

Chiropractic Pays Fine.—D. D. Palmer, Davenport, who was sentenced to pay a fine of $350 for practicing medicine without a certificate, after 24 days in the county jail, was released April 21 on payment of the fine.

Case Against Physician Dismissed.—In the case of the State of Iowa vs. "Dr." J. G. Shipley, Madrid, charged with practicing medicine without a license, as no witnesses against the physician appeared, the case was dismissed and the defendant discharged.

KENTUCKY.

Personal.—Dr. Sylvester J. Wedding, Hartford, is seriously ill with heart disease at his home.——Dr. W. Albert Berry, Ashland, who was operated on for appendicitis at the Charles S. Gray Deaconess Hospital, Ironton, Ohio, four weeks ago, has recovered sufficiently to return home.

Damage Suit Dismissed.—On April 14 Judge Field, Louisville, dismissed on demurrer the $25,000 damage suit of Dr. Jesse L. Melton against the Kentucky State Board of Health, which was brought to hold the members of that body individually liable because of the refusal of the board to approve the application of the plaintiff for license to practice medicine in the state.

MARYLAND.

Cecil County Society Officers.—Dr. S. Groome Fisher, Port Deposit, has been elected president, and Dr. Howard Bratton, Elkton, secretary and treasurer, of the Cecil County Medical Society.

Personal.—Dr. Joseph R. Owens has been nominated for mayor of Hyattsville.——The President has renominated Dr. Robert A. Ravenscroft of Garret County as surveyor of customs of Baltimore.

Smallpox.—An outbreak of smallpox among the colored people in Crisfield, an oyster town in the southern part of the eastern shore, is reported. Fifteen cases were discovered there by Dr. Marshall L. Price, Baltimore, of the State Board of Health.

Cocain Seller Convicted.—A young negro was convicted of selling cocain among the negroes at Hagerstown, April 18, and was sentenced to one year in jail and a fine of $500 and costs. This evil has grown to alarming proportions there and a crusade has been inaugurated by the police against it. The maximum penalty was inflicted in this case.

Annual Meeting of Society.—The annual meeting of the Montgomery County Medical Society was held at Rockville, April 17. Dr Edward Anderson, Rockville, was elected president; Dr. James E. Deets, Clarksburg, vice-president, and Dr. John L. Lewis, Bethesda, secretary-treasurer. Dr. Roger Brooke, Sandy Spring, was chosen as delegate to the state society, with Dr. James E. Deets, Clarksburg, alternate. Drs. W. French Greene, Brookeville, and Otis M. Linthicum, Rockville, were chosen censors. It was decided to hold the fall meeting at Germantown.

Baltimore.

Personal.—Dr. A. R. L. Dohme sailed for Europe, May 5.——Drs. Henry Lee Smith, Wirt A. Duvall, Andrew H. Whitridge and Jacob D. Norris have been reappointed police surgeons.

Bequest.—Mrs. Margaret A. Snyder died April 16, leaving by her will $2,000 to the Union Protestant Infirmary, the income of which is to be used for the support of free beds for the sick poor.

Will Study Mosquitoes.—Dr. George H. Dieffenbacher arrived in Baltimore May 4 from Bremen. He has been delegated by the grand duke of Baden to study malarial germs and mosquitoes in North and Central America.

College News.—Maryland Medical College graduated a class of 29 at its eighth annual commencement, May 3.——The Baltimore University School of Medicine intends to build a hospital on the site recently purchased in the northern section of the city.

Portrait Presented.—A handsome oil portrait of the late Dr. Richard McSherry, professor of principles and practice of medicine for many years in the University of Maryland, has been presented to the Medical and Chirurgical Faculty of Maryland by his sons.

Church Home Report.—The Church Home and Infirmary reports for the year an income of $67,236 and expenses of $55,556. Bequests, etc., received amounted to $12,259. During the year 353 operations were performed, with 8 deaths. An annex has been built at an expense of $50,000, which provides a home for nurses and rooms for special diseases.

Additional Smallpox Appropriation.—The board of estimates has voted an additional $1,000 to the health department to be used in the fight against smallpox. Since the original appropriation of $5,000 was made there have been 83 cases of smallpox, each of which has cost the city $62.55. There were 9 cases of smallpox reported during April.

MICHIGAN.

Found Guilty.—Dr. William C. Kitchen, Detroit, convicted of an attempt to perform a criminal operation, was sentenced on April 17 to pay a fine of $250 or to be imprisoned for six months in the house of correction.

Secures Tuberculosis Sanitarium.—The board of trustees of the Michigan State Sanitarium for the Treatment of Incipient Tuberculosis has selected a site for the institution at Howell, containing about 190 acres at an altitude of 1,100 feet above sea level.

Hospital for Ann Arbor.—The announcement is made that a large Roman Catholic Hospital will be built on a site purchased on the brow of a hill overlooking the Huron River. It is to be known as St. Thomas Sanitarium and is expected to cost about $100,000.

Graduating Exercises.—A class of 12 was graduated from the Grand Rapids Medical College, May 3. Dr. William Fuller delivered the president's address. Dr. Francis J. Lee presented the diplomas and Martin H. Carmody delivered the address of the evening.

German Clinic Opened.—A new free clinic, to be known as the German Polyclinic, was opened at Grace Hospital, Detroit, April 2. The staff of the polyclinic is composed exclusively of German physicians. Dr. Hermann Kiefer is president, and Dr. Ernest W. Haas, secretary, of the staff.

Personal.—Dr. Joseph Foster, in attempting to alight from a buggy in front of his office in Lansing, fell and sustained a fracture of the right humerus.——Dr. A. Douglass Lake, Kalamazoo, who has been under hospital treatment for several months, has recovered, and will soon resume practice.

Crusade Against Itinerants.—Physicians of Marshall and surrounding cities assembled in the office of Dr. G. B. Gesner, Marshall, April 20, and by resolution decided to continue the crusade inaugurated some time ago against itinerant and other physicians practicing medicine in Calhoun County without having been properly registered as required by law.

March Mortality.—During March 3,236 deaths were reported, corresponding to an annual rate of 14.8 per 1,000, which compares favorably with the rate of 15.5 per 1,000 for March, 1905. Pneumonia caused 368 deaths; tuberculosis, 233; accident and violence, 140; cancer, 138; whooping cough and influenza, each 60; diarrheal diseases of infants, 47; meningitis, 44; diphtheria, 38; measles, 28; scarlet fever, 27, and typhoid fever, 26.

MISSOURI.

Southwestern Physicians Meet.—The Southwestern Missouri Medical Association met at Springfield, April 19 and 20. The following officers were elected: Dr. Thomas R. Loer, Billings, president; Drs. Finis L. Anderson, Joplin, and O. N. Carter, Brookline, vice-presidents; Dr. Herbert S. Hill, Springfield, secretary, and Dr. William B. Patterson, Springfield, treasurer.

Snodgrass Memorial.—Memorial resolutions on the death of Dr. Charles A. Snodgrass were adopted by the St. Louis board of health, April 19, which extended sympathy to his family and authorized that a memorial stone in his honor be placed on the wall of the new pathologic building at the State Hospital. The resolution also names the building the Snodgrass Laboratory of Pathology and Bacteriology.

NEW JERSEY.

Personal.—Dr. E. L. B. Godfrey, Camden, was given a complimentary dinner by physicians of Camden and Philadelphia at Washington Park, May 3.

Mosquito Bill Signed.—The mosquito bill of Prof. John B.

Smith, state entomologist, was signed by Governor Stokes, April 22. The bill provides for an appropriation of $350,000 for the drainage of mosquito marshes throughout the state, and for the removal of other breeding places of the mosquito. The work is expected to take a period of five years, and the legislature has decided that no more than $70,000 shall be expended in any one year. Municipalities are expected to contribute a share of the expense, and state money is to be allowed in proportion to the amount of local assistance given.

Medical Society Meets.—At the regular meeting of the Camden County District Medical Society, April 25, a resolution was adopted urging the United States senators and representatives from New Jersey to bring about the passage, without amendment, of the Pure Food and Drug bill as passed in the senate. They also endorsed the action of the Medical Council to secure passage of a bill providing for a department of public health with representation in the cabinet. The following officers were elected: President, Joel W. Fithian; vice-president, Dr. Sylvan G. Bushey; secretary, Dr. Paul M. Mecray; treasurer, Dr. A. Haines Lippincott; historian, Alfred Cramer; committee of arrangements, Drs. Daniel Strock, H. F. Palm and Edward A. Y. Schellenger, and delegates to the Medical Society of New Jersey, Drs. Paul M. Mecray, Dowling Benjamin, all of Camden, and William A. Westcott, Berlin.

NEW YORK.

Personal.—Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital, Poughkeepsie, has been appointed president of the state commission on lunacy, to succeed Dr. William Mason, resigned.

From Buffalo to Europe.—Dr. A. W. Hurd, superintendent of the Buffalo State Hospital, sails for Europe.——Dr. Leonard Wacker will sail for Europe.——Dr. E. Rampacher sails for Europe.——Dr. F. Park Lewis sails for Europe.

Bills Passed.—The Wedemyer bill, which was designed to prevent New York City from building a consumptive hospital in Staten Island, passed the assembly but got no further.—— The Tully bill, prohibiting a druggist from selling narcotic or patent drugs except on prescription of a physician, passed the senate.

Commencement.—The seventy-fifth annual commencement exercises of Albany Medical College were held May 1, when degrees were conferred on a class of 32 by Rev. Andrew Van Vranken Raymond, D.D., chancellor of the university. The address to the graduating class was delivered by the Hon. Andrew S. Draper, and Dr. Lemon D. Washburn delivered the valedictory address.

Alumni Meeting.—The annual meeting of the Alumni Association of Albany Medical College was held May 1, at which the following officers were elected: President, Dr. Thomas Wilson, Hudson; vice-presidents, Drs. Frederick L. Classen, Albany; James A. Clyne, Joliet, Ill.; Charles P. McCabe, Greenville, N. Y.; Robert W. Andrews, Poughkeepsie, N. Y., and James W. King, Stottville, N. Y.; recording secretary, Dr. J. Montgomery Mosher, Albany, (re-elected); corresponding secretary, Dr. Andrew McFarlane, Albany; treasurer, Dr. Robert Babcock, Albany, and historian, Eugene E. Hinman, Albany (re-elected).

Physicians for Board of Regents.—The following appointments have been made to the State Board of Medical Examiners: Dr. William Warren Potter, Buffalo; Dr. William S. Ely, Rochester, and Dr. Maurice J. Lewi, New York City, have been reappointed, and Dr. Arthur W. Booth, Elmira, has been appointed to fill the unexpired term of the late Dr. George Ryerson Fowler, Brooklyn.——From the Homeopathic Medical Society, Drs. John M. Lee, Rochester; J. Willis Candee, Syracuse, and George E. Gorham, Albany, were reappointed, and from the State Eclectic Society, Drs. H. L. Smith, Buffalo; Orlando W. Sutton, Bath, and M. H. Nichols, Worcester.

Defeat of Stevens-Wainwright Bill.—The defeat of the Stevens-Wainwright "patent-medicine" bill in the assembly, May 3, was accomplished by the adoption of four amendments offered by four members, none of whom was opposed to legislation curbing the "patent-medicine" trust and each of whom believed that in some respects the measure was too radical. The New York *Times* says:

> Tompkins of New York stated that he favored such legislation and contemplated introducing similar legislation. He then asked that three certain poisons be exempted from the provisions of the measure, on the ground that they were not "habit forming." The amendment was adopted by an overwhelming rising vote. Three other amendments were adopted in rapid succession, and the fate of the measure was sealed then and there.
>
> Hooker of Genesee spoke of certain "patent medicines" that contained "one good drunk." He doubted if it would be advisable to compel the printing of the formula on "patent medicine" packages, as in many instances it would certainly instruct people how an intoxicant could be obtained in a genteel way.
>
> Some members held that "patent medicine" business was largely fraudulent, but their convictions did not cause them to vote against the amendments. The retail drug merchants had been deluging the members with protests against the bill. These protests had much weight. Another factor against the measure was the influence of the country newspapers, which derive considerable revenue from "patent medicine" advertisements.

New York City.

Bequest.—According to the will of Edgar V. Lawrence, the Brooklyn Home for Consumptives is to receive $1,000, and the Home for Crippled Children in Manhattan, $1,000.

Quarantine Season Begins.—The quarantine season for vessels arriving from coastwise ports has begun and will continue until November 1. All vessels from ports south of Cape Henlopen will be inspected at quarantine.

More Impure Milk Sold.—Six dealers were arraigned before the Westchester police court for selling impure milk. Five were held in $100 bail each for trial at special sessions. In the Court of Special Sessions six dealers were fined, the fines ranging from $50 to $15.

Rockefeller Institute for Medical Research.—This institution, which has been occupying temporary quarters during the past two years, has moved into its new laboratories at Avenue A and Sixty-sixth Street. It is announced that the formal opening, which has been delayed for several months, will take place on May 11.

Cerebrospinal Meningitis at Quarantine.—The Italian liner *Il Pcimonte* has been released after being held up for two days on account of the illness of five passengers. The ship's surgeon reported five deaths at sea. The sick passengers showed symptoms of cerebrospinal meningitis and the autopsy on one woman who died at quarantine confirmed this diagnosis.

Low Mortality.—The number of deaths in Greater New York for the week ended April 28 was 1,523, as compared with 1,636 for the corresponding week of last year. The mortality from measles and bronchopneumonia has been three times as great as last year. There has been a decrease in the number of deaths from tuberculosis, heart disease and cerebrospinal meningitis.

Monument to Dr. Skene.—This monument was unveiled on Saturday, May 5, by Mr. Hirsch in behalf of the Skene Monument Association and presented to the city. Dr. Abraham Jacobi delivered the address. It was erected by private subscription and was the work of J. Massey Rhind. It occupies one of the mounds near the plaza at the main entrance to Prospect park, Brooklyn.

Experimentation with Embalming Fluids.—Coroner's Physician Dr. Edward T. Weston is being examined before District Attorney Jerome on the charge of having experimented without any authority on the corpses in his charge with embalming fluids, and that this was done before the cause of death had been ascertained. In these experiments, which were made at the morgue, 20 bodies were used, and Dr. Weston claimed that the cases had all been reported to the coroner's office.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended April 28, 1,454 cases of measles, with 39 deaths; 475 cases of tuberculosis, with 175 deaths; 475 cases of cerebrospinal meningitis, with 175 deaths; 337 cases of diphtheria, with 40 deaths; 237 cases of scarlet fever, with 13 deaths; 26 cases of whooping cough, with 5 deaths; 22 cases of typhoid fever, with 8 deaths; 2 cases of smallpox, with 1 death, and 97 cases of varicella, a totality of 3,125 cases, with 456 deaths.

PENNSYLVANIA.

Philadelphia.

Entertainments.—Dr. Emery Marvel of Atlantic City, N. J., entertained the members of the executive committee of the Philadelphia Medical Club at dinner May 5, at the Hotel Chelsea, in Atlantic City.

Hospital Opened.—The new addition to the Samaritan Hospital was dedicated with appropriate ceremonies, April 30. The building was thrown open for inspection from 3 to 10 p. m., and supper was served by the Woman's Samaritan Club from 6 to 8.

Hospital Examination.—The examination of applicants for resident interneships in the Philadelphia General Hospital will be held by the civil-service commission in City Hall, May 12. There are 24 vacancies, but Dr. Coplin, director of the department of public health and charities, it is said, will increase the number to 32.

Trendelenburg Here.—Dr. Trendelenburg, the eminent surgeon of Leipzig, who comes to America to be the guest of the American Medical Association at Boston, arrived in Philadelphia, May 4, and was entertained by Dr. William W. Keen. He visited Jefferson Medical College and its hospital, and the University of Pennsylvania, May 5. He went from Philadelphia to Chicago and Baltimore, and will attend the meeting of the American Surgical Association at Washington, and will go to Cleveland, May 30.

Hospital Reports.—The report of the Presbyterian Hospital for the month of April shows that 233 patients were admitted to the wards and that 1,724 were treated in the different dispensaries. The ambulance made 170 calls.——The report of the Charity Hospital for the month of April shows that 313 medical, 239 surgical, 20 ophthalmologic, 23 otologic and 105 laryngologic patients were treated in the clinics.——The report of the Polyclinic Hospital shows that 7,915 patients visited the different dispensaries, 608 patients were treated in the accident wards, and 116 were admitted to the main building.

Street Cars Reported Clean.—Inspectors attached to the bureau of health continued their examinations of street cars, and reported May 2 that the inspection of 249 cars revealed that only four were unclean. These four exceptions showed evidences of expectoration only. Complaints have been received by Dr. Abbott of the health bureau, by the public of the odor arising from the disinfection of cars with carbolic acid. It is possible, therefore, that disinfection may be abandoned and that the official director will endeavor to secure sanitary cars by keeping the cars scrupulously clean of dirt and dust.

Bequests.—By the will of the late Rebecca White the Women's Medical College of Philadelphia receives $5,000, the income of which is to be applied to a beneficiary fund for the gratuitous education and training of worthy, well selected students who are in need; especially for those who feel called for the Christian missionary service; to the West Philadelphia Hospital for Women, $1,000; to the Women's Hospital of Philadelphia, a valuable property in trust, the income of which is to be used for furnishing and supplying its diet kitchen, and to the Women's Hospital of Philadelphia, $5,000 in cash.——By the will of the late Caroline Steppacher a bequest of $100 is made to the Jewish Hospital.——By the will of the late Leonard Zeller the German Lutheran Home receives $500.

Health Report.—The total number of deaths reported from all causes during the week reached 502. This is a decrease of 85 over the number reported last week and an increase of 21 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 14; measles, 6; pertussis, 7; consumption, 70; cancer, 22; apoplexy, 18; heart disease, 45; acute respiratory disease, 82; enteritis, 17; hepatic cirrhosis, 6; appendicitis, 6; Bright's disease, 37; suicide, 7, and accidents, 28. There were 264 cases of contagious disease reported, with 26 deaths, as compared with 332 cases and 48 deaths reported in the preceding week. Typhoid fever is present throughout the city, only three wards being exempt from the disease. Statistics show an increase of 37 over the number reported last week. Measles is on the decrease, the cases reported numbering 390, as compared with 411 reported in the preceding seven days. One case of smallpox was reported.

CANADA.

French Medical Society in Manitoba.—A medical association has been organized in Manitoba with a charter membership of 15, to be known as L'Association Médicale Française du Manitoba. The president is Dr. J. U. O. Lambert of St. Boniface.

Personal.—Dr. Charles O'Reilly, for nearly thirty years superintendent of the Toronto General Hospital, has returned to Toronto from a year's sojourn abroad, and has commenced practice there, confining himself to consultation work. His son, Dr. Brefmey O'Reilly, who has been in Japan, will join him in the autumn.——Dr. Walter B. Geikie, one of the prominent medical educationalists of Ontario for the past forty years and for many years dean of Trinity Medical College, was presented with a gold-headed ebony cane by the class of '06, which was the last to register with old Trinity before its amalgamation with Toronto University.——Dr. Charles A. Peters has been appointed attending physician to the Montreal Contagious Diseases Hospital; Dr. John McCrae, attending physician in diphtheria, and Dr. A. H. Gordon for scarlet fever.——Dr. Colin A. Campbell, late senior house surgeon at Moorfields, where he had been for three years, has commenced practice in Toronto. Dr. Campbell is one of five Canadian physicians who held this position.

THE CALIFORNIA SITUATION.

List of Physicians and Addresses—Medical Aspects of the San Francisco Calamity.

Dr. George Blumer, under date of May 2, writes:

"Probably no one, unless he has been on the spot under similar circumstances, can appreciate the magnitude and the effects of a disaster like that which befell San Francisco on April 18. The earthquake, in itself sufficient to cause an immense amount of damage and loss of life and property, was followed in a few hours by the fire which, on account of the lack of water, could only be imperfectly combated. The earthquake came, as a matter of fact, at an unusually favorable time of day, for, though it was already light, the number of people on the streets was very small, and many doubtless owe their lives to this fact. The loss of life from the fire also was very slight, considering its magnitude, for those in the residence portions of the city had, as a rule, plenty of warning.

"On the day of the disaster the efforts of the medical men were confined mainly to attending to those hurt by falling buildings or burned. The great majority of the injured were suffering from contusions, abrasions, or fractures of the skull or limbs. The regular emergency hospitals at the City Hall and at the Golden Gate Park were so severely damaged that they were useless, but the Harbor Emergency Hospital on the water front was practically unharmed. The Mechanics' Pavilion, a large wooden structure, was converted into a temporary emergency hospital, and here the regular emergency surgeons, aided by numerous volunteers, had under treatment some 250 patients, who were placed on mattresses on the floor of the main pavilion. Unfortunately, this building had to be abandoned on account of fire early in the afternoon of the 18th, but the patients were rapidly removed without a single mishap, and were transferred to the Army General Hospital at the Presidio, the German Hospital and the California Women's Hospital. At the same time the uninjured Harbor Emergency had been doing good work, and was transferring serious cases to the Naval Hospital on Goat Island.

"As a result of the fire thousands of people were rendered homeless, and these were compelled to escape across the bay on ferries, or to camp out in the various parks and open squares of the city. The main medical problem then resolved itself into one of sanitation. The sick and injured being cared for in those hospitals which escaped the flames, it became necessary to protect the well from the dangers of their own excreta, and from the ravages of epidemic diseases. This work has been, even now, so well organized that all danger from these sources is practically nil. In each public square there is organized a sanitary committee, partly laymen and partly physicians; under the committee are relief men who keep the squares clean, inspect the latrines, and keep the inhabitants informed as to the sanitary regulations. The scarcity of water is now being remedied, food is abundant and wholesome, blankets and mattresses have been forthcoming, and the prospects from a medical standpoint are encouraging.

"It seems certain that for some time the conditions will remain the same as those described so far as living conditions are concerned. In an eastern climate the campers might suffer much from exposure; here, with the rains practically over till next October, this is not to be anticipated. It is safe to say that many of the poorer class will be in better physical condition than they have been for years. The plain food, the outdoor living, and the withdrawal of alcoholic stimulants will all aid in producing physical betterment. From a medical standpoint San Francisco is now in excellent condition, and likely to stay so. The profession in this, as in previous catastrophes, has shouldered its share of the burden without shirking and without grumbling."

From the President of the County Society.

Dr. Wallace I. Terry, president of the San Francisco County Medical Society, writes:

"I hasten to express sincere thanks for your kindness in our misfortune, which I am sure will be voiced by every member of the medical profession in the city. . . . I have announced that I should call a meeting of the San Francisco County Medical Society next Thursday evening, May 3, 1906, at which time we will take up the question of ways and means to assist physicians of this city.

"Outside of San Francisco but few physicians suffered any loss, but I estimate that 1,000 of our physicians were burned out, at least so far as their offices were concerned. . . .

"The president of the New York Academy of Medicine has tendered us aid as well as medical bodies of Portland, Ore., Salt Lake City and Los Angeles, and there may be other offers

with which I am as yet unacquainted, owing to the confusion and scattering of the medical men. . . .

"We lost our county society library of about 6,000 volumes and many individual medical libraries which will be hard to replace and later I shall request you to aid us in securing duplicates from many other libraries in the United States. We have a small fund of money which has been placed at our disposal and is sufficient to meet our immediate necessities. In the meantime I wish you would announce how grateful we are for the aid tendered us and the sympathy which has poured in from all quarters."

The Situation in Santa Rosa.

"SANTA ROSA, CAL., May 2, 1906.

"*To the Editor:*—We notice with great pleasure that a fund is being raised to aid the doctors of the Pacific Coast who have suffered so severely in the recent great disaster. The earthquake did comparatively little damage in San Francisco, but the fire which followed spread ruin over a great area, and made desolate many a home.

"In Santa Rosa, Sonoma County, Cal., a most beautiful town of about 12,000 inhabitants, the earthquake did great damage; all the business blocks were thrown down, also many dwellings, and scarcely a chimney remained standing in town. Fire followed and burned about half of the business section before it was conquered. Many of our doctors lost everything in this conflagration, and are now in need of assistance.

"Santa Rosa suffered heavily both in loss of life and loss of property, more so in proportion than San Francisco. The calamity in San Francisco is so great that it has taken notice from us. We have a flourishing county medical society of 45 members, but we have lost all of our books, etc.

"We respectfully ask that any donation intended for our unfortunate members be sent to us, in Santa Rosa, where it will be most thankfully received and properly distributed by the county society.

"We wish you godspeed in your work of aiding the deserving. Fraternally,

"A. MCG. STUART, M.D., President.
"G. W. MALLORY, M.D., Secretary."

White Cross Contingent.

The following report, dated April 29, has been received of the physicians and nurses sent to San Francisco, April 23, under the auspices of the American White Cross First Aid Society, in charge of Major P. J. H. Farrell:

The first section arrived six hours late and was taken to the Hearst camp in Oakland. Surgeon Joseph B. Greene, in command, reported to Captain Kennedy, representative of Colonel Torney, who stated that he had been instructed to quarter the detachment in the Presidio adjoining the General Hospital. The following are the assignments:

To the Smallpox Hospital, Oakland, 6 nurses.
To the W. R. Hearst Maternity Hospital, Oakland, 8 nurses.
To the California City Hospital, one surgeon and one nurse.
To Logan Square, Harbor View Camp, seven surgeons.
As health examiners, on the ferries plying between Oakland and San Francisco, 14 surgeons, under charge of Surgeon Greene.
To the W. R. Hearst Camp, Adams Point, Oakland, 17 nurses.
To the Model Government Hospital Camp, 15 nurses.

Several nurses have also been assigned to duty at the United States General Hospital at the Presidio.

The health of all is reported excellent, and all are working earnestly and well.

Dr. Joseph B. Greene writes that it is difficult to trace refugees, as transportation is so difficult and the refugees are so scattered. The physicians and nurses sent out by the society are scattered over the entire city, doing various and sundry duties. Dr. Greene is in charge of inspection on ferry boats searching for smallpox.

The laundry at the United States Army General Hospital, Presidio, of San Francisco, just in the rear of the main hospital building, caught fire April 29, but owing to a favorable wind and prompt work, the fire was confined to this building and did not spread to the hospital.

Present Addresses of San Francisco Physicians.

The following list of present addresses of San Francisco physicians is taken from San Francisco papers and other sources:

Adams, Frank L., 1230 Telegraph Ave., Oakland.
Bailey, Thomas E., 1917 Fillmore St.
Belmont, Francis, Oakville, Napa Co.
Blake, Selden L., Irving Sanatorium, 906 Eddy St.
Bucknell, George J., 1121 Laguna St.
Burke, Isaac, Twelfth and Clay St., Oakland.
Burke, William P., Twelfth and Clay Sts., Oakland.
Cross, Charles V., 2007 Devisadero St.
Day-Bew, Lolita B., 2264 California St.
Dessau, H. F., Twelfth and Clay Sts., Oakland.
Dozier, Charles A., 827 Du Boce Ave.
Farnum, Charles E., 513 Devisadero St.
Forster, William M., Irving Sanatorium, 906 Eddy St.
Franklin, W. Scott, 2470 Bush St.
French, Charles E., 2715 Hillegas St., Berkeley.
Fredrick, M. W., 2015 Fillmore St.
Friedlander, David, 2897 Jackson St.
Griswold, William H., 894 Eddy St.
Goss, Alice M., 1800 Buchanan St.
Johansen, Erneste A., 1309 Oak St.
Jones, Philip Mills, 1230 Telegraph Ave.
Juilly, Georges H., Franco-American Hosp., 21st and Howard Sts.
Kenyon, C. G., 2355 Pacific Ave.
Lamb, Frank T., 1064 Bush St.
Lamb, Lottie A., 1964 Bush St.
Maclean, Daniel, Irving Sanatorium, 906 Eddy St.
McMurdo, John R., 2026 Steiner St.
Mercer, Ernest H., 3810 Mission St.
Minaker, Andrew J., 224 San Jose Ave.
Mish, Solomon C., 1075 Gough St.
Morrison, Joseph G., Haight and Masonic Ave.
Nelson, Arthur B., Irving Sanatorium, 906 Eddy St.
Orella, F. R., 872 Chestnut St.
Philip, John H., Irving Sanatorium, 906 Eddy St.
Preston, Walton, 1823 Franklin St.
Read, William P., 2105 Pine St.
Riley, William C. 1796 Post St.
Rosenthal, Adolph G., German Hospital.
Scott, Catherine V. C., 1386 Haight St.
Stafford, David E., Sacred Heart Church.
Terry, W. L., Presidio Sanitary Division.
Thelle, Emil, 472 Eighth St., Oakland.
Thomas, Frank, 810 Turk St.
Thompson, John E., 200 Fourth Ave., Richmond District
Thrasher, Marion, 881 Fulton St.
Tuchler, Alexander S., 703 Van Ness Ave.
Wakefield, W. Francis B., 2161 Sutter St.
Whitman, Charles H., 1007 Fillmore St.

Additional List of the Safe.

Dr. Douglas W. Montgomery sends us, under date of April 27, the following additional list of physicians who are safe and well: John M. Macdonald, Frederick J. Hund, Vincent P. Buel ley, George P. Purlenky, Alfred Newman, George H. Borkowitz, D. E. Barger, Edward G. Frisbie, Gerald J. Fitzgibbon, Frank T. Fitzgibbon, Alexander T. Leonard, Michael J. Fottrell.

St. Louis Sends Relief.

St. Louis physicians, through the St. Louis Medical Society, have contributed $650 for the California physicians' relief. The names of the individual contributors are as follows:

Alt, A.	Gettys, S. L.	Moeller, C. E.
Amerland, J. H.	Goodwin, E. J.	Neuhoff, F.
Ambruster, A. C.	Graul, R. E.	Nietert, H. L.
Ament, C. M.	Green, John, Jr.	Ogle, O. E.
Anderson, C. E.	Greer, E. O.	Orth, Carl.
Avars, T. R.	Grindon, J.	Porter, Wm.
Bader, G. W.	Gross, J. H.	Price, J. M.
Ball, James M.	Hardy, J. A.	Reder, F.
Ball, O. F.	Haverstick, G. W.	Ring, Frank.
Bartscher, H. W.	Hansneck, F. A.	Rothman, P. M.
Baumgarten, G.	Hempel, Max.	Rothstein, H.
Bedal, A. C.	Henderson, F. L.	Sauls, J. A.
Blair, V. P.	Hill, Roland.	Schmidt, Aug.
Becker, E. F.	Hirschl, W. T.	Schlossstein, A. G.
Brookes, H. S.	Hoffmann, Phil.	Scott, C. W.
Bryan, W. M. C.	Hoge, M. W.	Sensenv, E. T.
Buchwalter, J. C.	Homan, George.	Shattinger, C.
Bunford, C. E.	Hopkins, T. A.	Shelman, A. P.
Caplan, L.	Jennings, J. E.	Shields, W. B.
Cawood, J. H.	Johnson, H. McC.	Skrainka, P.
Claasen, H. W.	Jullan, H. M.	Slader, G.
Coughlin, W. T.	Kennedy, A. F.	Smith, Elsworth.
Crandall, G. C.	Kern, J. H.	Spitzig, F.
Curtis, A. N.	Kolbenhever, F.	Steger, W. T.
Dalton, H. C.	Kollme, Otto.	Steedman, I. G. W.
Dorsett, W. B.	Konzelmann, P. R.	Steele, A. J.
Dudley, C. R.	Lightner, C. R.	Streutker, C. E. F.
Faber, J. E.	Lutz, F. J.	Stockwell, B. E.
Ehrenfest, H.	Magoon, E.	Sturhahn, F. O.
Fisch, C.	Mansfield, T. B.	Terry, R. J.
Fries, W. A.	Martens, E. J.	Thumser, L.
Everett, A. E.	Mathews, M. H.	Tupper, P. Y.
Fulton, A.	Mares, J. F.	Upshaw, H. A.
Galloway, W. L.	Meng, E. R.	Ware, C. A.
Gamble, D. C.	Merwin, G. M. D.	Wichmann, H. L.
Garstang, D. B.	McLean, M. H.	Wolf, A. S.
Gebrung, E. C.	Mickel, R.	Zahorsky, John.
Gellhorn, G.	Millican, K. W.	

The contributions were in sums as follows: Five individuals contributed $25 each; one, $15; twenty, $10; one, $8; forty-nine, $5; two, $3; sixteen, $2; seventeen, $1; four, $0.50.

Appeal to Pennsylvania Physicians.

A copy of the following circular letter has been mailed by the secretary of the Philadelphia County Society, Dr. William S. Wray, to every regular physician in the state of Pennsylvania:

PHILADELPHIA, April, 1906.

Dear Sir:—I enclose herewith a copy of the resolutions passed by the Philadelphia County Medical Society, April 25, 1906. You will note in the matter therein contained that it is desired to create a fund for the relief of California physicians who are in financial distress by reason of the recent disaster. Will you kindly bring

this matter to the attention of your County Medical Society at the earliest possible moment. The treasurer of our committee will be glad to receive from your society or from the individual members thereof any contribution which they may feel inclined to make. The fund when collected will be placed in the hands of some responsible representative physician of California who will see that the money is expended judiciously and where it is most needed. The fund will be sent out as the contribution of the physicians of the State of Pennsylvania.

Any contribution, from one dollar up, will be gladly received.

WILLIAM S. WRAY.
Secretary of the Philadelphia County Medical Society.

Cincinnati to Aid.

The president of the Cincinnati Academy of Medicine has appointed Drs. C. L. Bonifield, E. O. Smith and Magnus Tate as a committee on subscription to help the profession of San Francisco.

THE CALIFORNIA FUND.

It is not necessary to repeat what has already been printed in these columns regarding the fund to aid physicians in California. The object of the Board of Trustees in authorizing THE JOURNAL to receive subscriptions for the purpose was to give all an opportunity to contribute who otherwise might not know through what channels they could send their contributions. As has been stated, in addition to the Board of Trustees of the American Medical Association, under whose direction this fund is being collected and will be distributed, a local committee, which could be quickly gotten together in an emergency, was appointed to act in an advisory capacity. As we go to press we have no definite information regarding who will constitute the committee appointed by the California profession. A meeting of the San Francisco County Medical Society was called for May 3 to appoint a local committee for the distribution of this and other funds. Next week we hope to give full details in regard to this committee.

The following contributions, not acknowledged last week, have been received up to 9 o'clock, Wednesday morning, May 9:

INDIVIDUAL CONTRIBUTIONS.

Allen, Frank H., Shelby, Iowa	$ 2.00
Anderson, Edw. T., Platte, S. D.	2.00
Arnold, B. A., Freeport, Ill.	20.00
Atwood, F. C., Daytona, Fla.	10.00
Campbell, W. J., La Plata, Macon Co., Mo.	1.00
Cunningham, H. K., La Plata, Macon Co., Mo.	0.50
Deaderick, Wm. H., Marianna, Ark.	1.00
Donnellan, P. S., Redlands, Cal.	5.00
Ellis, S. L., La Plata, Macon Co., Mo.	1.00
Friedenwald, Harry, Baltimore	5.00
Gage-Day, Mary, Klogston-on-Hudson, N. Y.	5.00
Gates, J., La Plata Macon Co., Mo.	1.00
Graham, W. A., Fayette, Ala.	1.00
Grant, W. W., Denver, Colo.	10.00
Hicks, L. E., Dunn, N. C.	2.50
Hirshfelder, Arthur D., Baltimore	25.00
Hodson, F. A., Sheridan, Wyo.	5.00
Holley, J. T., Galveston, Texas	2.00
Kenefick, M. J., Algona, Iowa	1.00
Kittrell, W. H., Mt. Pleasant, Tenn.	5.00
Laughlin, C. E., Evansville, Ind.	5.00
Lewis, C. F., Austin, Minn.	1.00
Loose, D. N., Maquoketa, Iowa	5.00
McDavitt, R. C., La Plata, Macon Co., Mo.	1.00
McOscar, E. J., Ft. Wayne, Ind.	5.00
Marvel, Philip, Atlantic City, N. J.	50.00
Milner, Gordon, Baltimore	20.00
Naylor and Sturgis, Stephensville, Texas	5.00
Newton, H. C., La Plata, Macon Co., Mo.	1.00
Physicians' Protective Association, Freeport, Ill.	20.00
Pickett, Thos. E., Maysville, Ky.	10.00
Preston, John, Abilene, Texas	5.00
Raemer, E. F., Mitchell, S. D.	5.00
Randall, H. E., Lapeer, Mich.	5.00
Rabe, Wm. Louis, Dwight, Ill.	10.00
Ranson, B., Harper's Ferry, W. Va.	5.00
Saunders, S. W., La Plata, Macon Co., Mo.	1.00
Shattuck, Frederick C., Boston, Mass.	100.00
Shuttee, H. C., West Plains, Mo.	10.00
Sibler, Chas., Cleveland, Ohio	5.00
Smith, Frank R., Baltimore	10.00
Smyth, H. F., Bridgeport, Conn.	5.00
Stevens, George B., Boston	5.00
Trout, A. L., Sunrise, Wyo.	10.00
Tunstead, Hugh, Minneapolis	5.00
Walker, Robert A., Menominee, Mich	5.00
Welch, Wm. H., Baltimore	25.00
Wheeler, John R., Burlington, Vt.	10.00
Wilson, John H., Bethlehem, Pa.	10.00
Wilson, W. F., Lake City, Minn.	1.00
Wilson, Olive Paramold, Ark.	10.00

SOCIETY CONTRIBUTIONS.

Daviess County (Ind.) Medical Society	$ 5.00
Dover Medical Society, Dover, N. H.	50.00
Klingman County Med. Society, Klingman, Kas.	5.00
La Crosse County (Wis.) Med. Society	20.00
Medical Society of the County of Ulster, Kingston, N. Y.	50.00
Miami and Shelby County Societies (Ohio)	21.05
Montgomery County Medical Society, Dayton, Ohio	$100.00
Owen County (Ind.) Med. Soc.	3.00
Perry County Medical Society, New Lexington, Ohio	10.00
Waukesha County Med. Society, Waukesha, Wis.	10.00

Medical Society Ramsey County, St. Paul, Minn., $460:

Abbott and O'Brien	$10.00	MacLaren and Ritchie	$25.00
Bacon, L. C.	5.00	McDavitt, Thos.	10.00
Bettingen, J. W.	10.00	Nelson, J. C.	5.00
Boeckmann, E.	25.00	Nelson, L. A.	5.00
Burch, Frank	5.00	Nippert, H. T.	5.00
Cannon, Balsome and O'Brien	10.00	Renz, Gustav A.	10.00
Cook, Paul B.	5.00	Riggs, C. E.	10.00
Coon, Geo. M.	5.00	Ritchie, Parks	10.00
Davis, Herbert	15.00	Rogers, J. T.	10.00
Dennis, W. A.	10.00	Savage, Arthur	5.00
Foster, Burnside	15.00	Schadle, J. E.	10.00
Fullerton, W. S.	5.00	Schwyzer, Arnold	25.00
Greene, C. L.	25.00	Shimonek, A.	25.00
Heath, A. C.	5.00	Sneve, Haldor	15.00
Lando, D. H.	5.00	Stumm, T. W.	5.00
Lankester, Howard	5.00	Sweeney, Arthur	15.00
Leavitt, Fred	10.00	Taylor, H. L.	25.00
Lewis, W. W.	5.00	Walsh, E. F.	25.00
Lundholm, E. M.	10.00	Wheaton, C. A.	25.00
		Williams, Cornelius	10.00

Hardeman County Medical Society (Tenn.), $15.00:

Cock, W. S.	$1.00	Tate, H. W.,	$ 5.00
Goddard, W. L.	1.00	Tate, Robert W.	1.00
Neilstead, H. M.	1.00	Werly, J. J.	1.00
Sassar, J. D., Sr.	5.00		

Simpson County Medical Society (Ky.), $10.00.

Drake, W. P.	$1.00	London, Finis	$1.00
Gossett, W. L.	1.00	London, W.	1.00
Gutherie, W. A.	1.00	McClure, S. W.	1.00
Hayes, J. W.	1.00	Morgan, E. C.	1.00
Jones, G.	1.00	Moss, M. M.	1.00

Chicago Medical Society (additional) $277:

Anker, I. C.	$ 5.00	Maslko, V. F.	$2.00
Beck, Carl	25.00	McBarney, B. A.	5.00
Best, B. T.	1.00	Mefford, W. T.	5.00
Brown, J. P.	5.00	Meyer, E. F.	3.00
Campbell, John G.	3.00	Miller, R. E.	1.00
Carr, James G.	2.00	Montgomery, Liston H.	5.00
Colegrove, E. H.	5.00	Mullan, Eugene A.	2.00
Davidson, E. A.	2.00	Peck, W. H.	5.00
Davis, Effa V.	5.00	Richmond, Y. G.	5.00
Davison, J.	10.00	Roberts, H. H.	2.00
Dodds, Robert	10.00	Robertson, John D.	10.00
Dodge, D. W. F.	2.00	Robinson, Byron	10.00
Doerderlein, Theo. J.	5.00	Rogers, Buell S.	10.00
Ellis, John P.	5.00	Shearer, W. A.	5.00
Guerin, John	25.00	Smith, E. M.	5.00
Hartung, Henry	5.00	Starkweather, R. E.	15.00
Heintz, E. L.	5.00	Stevenson, Alex. F.	10.00
Heisz, Emily J., Nora Springs, Iowa	2.00	Sugg, J.N., Clinton, Iowa.	10.00
Holmes, A. G. H.	2.00	Swean, V. U.	1.00
Hughes, G. L.	1.00	Webster, J. P.	10.00
Kemp, Nerens C.	5.00	Weichelt, A.	5.00
Kiercka, P. B.	2.00	Weidner, M. R.	5.00
Lieberthal, David	10.00	Wherritt, David H.	4.00

Total	$1,491.05
Previously acknowledged	4,244.00
Grand total	$5,735.05

GENERAL.

Mare Island Navy Yard.—It is reported from Washington that the Senate Committee on Naval Affairs has ordered a favorable report on a bill authorizing the expenditure of $300,000 at the Mare Island Navy Yard, San Francisco. The object is to give work to the earthquake and fire sufferers.

Railway Surgeons Meet.—At the annual session of the Central of Georgia Railway Association, held in Birmingham, Ala., April 15, the following officers were elected: President, Dr. George R. West, Chattanooga, Tenn.; vice-president, Dr. Robert H. Taylor, Griffin, Ga., and secretary, Dr. J. R. Burdette, Tennille, Ga.

Cholera in the Philippines.—Chief Quarantine Officer Heiser reports that there has been a great decrease in the number of plague cases in the provinces; from an average of about 50 a day the number has dropped to about 5. The improvement is attributed to the very vigorous measures which the health department recently put in operation. In one town alone several thousand persons were vaccinated with anticholera vaccine.

Health Report of the Isthmus for March.—Colonel Gorgas in his monthly report states that the health conditions of the Isthmus continue excellent. No case of smallpox has occurred within the last year. The last case of plague occurred seven months ago, and the last case of yellow fever over three months ago. During March, among the 25,000 employés there were 28 deaths, 10 among whites and 68 among negroes. Of the 10 whites 5 were from the United States. Of these 5, only 3 died from disease, 1 from pneumonia and 2 from dysen-

tery. The principal causes of death were malaria and dysentery. The disease causing the next highest death rate was dysentery, which caused 8 deaths, and after that accidental traumatism, which caused 4 deaths.

The Journal of Abnormal Psychology.—The first number of this journal has been received. According to the announcement it is intended for the publication of articles embodying clinical and laboratory researches in abnormal mental phenomena. The data supplied by such researches are of fundamental importance to neurology, psychiatry and psychology. "The field of investigation includes, for instance, such subjects as hysteria, hallucinations, delusions, amnesias, abulias, aphasias, fixed ideas, obsessions, delirums, perversions, emotions and their influence, exaltations, depressions, habit neuroses and psychoses, phenomena of hypnosis, sleep, dreams, automatisms, alterations of personality, multiple personality, dissociation of consciousness, subconscious phenomena, relation of the mind to physiologic processes, neurasthenic and psychasthenic states." The first number contains the following articles: "The Pathogenesis of Some Impulsions," Dr. Pierre Janet; "What Is Hypnosis?" Prof. W. v. Bechterew; "Recent Experiences in the Study and Treatment of Hysteria at the Massachusetts General Hospital, with Remarks on Freud's Method of Treatment by 'Psycho-Analysis'," Dr. James J. Putnam; "The Psychology of Sudden Religious Conversion," Dr. Morton Prince. The price is $3 a year and the editor is Dr. Morton Prince, 458 Beacon Street, Boston.

FOREIGN.

Australian Hospital Damaged by Storm.—The hospital at Longreach, Queensland, was recently damaged to the extent of $1,000 by a thunderstorm accompanied by heavy winds. The morgue was completely demolished.

Strike of Printers in Paris.—We have received a notice from Masson et Cie, publishers of the *Presse Médicale*, stating that the present strike among the printers will interfere with the further issuing of the journal until satisfactory arrangements can be concluded.

In Russia.—The *St. Petersburg. med. Wochft.* for April 7 gives the names of several physicians who have been released from custody on the payment of forfeit sums ranging from $50 to $2,000. They had been arrested for alleged participation in the revolutionary movement.

Plague in India.—A serious outbreak of plague is reported to have occurred at Jummoo, in Kashmir, northern India. A native ruler, the maharajah of Jummoo, has his palace there, and many deaths are reported among the palace attendants and the troops. Two hundred and eighty-five deaths are said to have occurred during the week ending April 21.

Multi-Centennials of the German Universities.—The University of Giessen completes in 1907 the three-hundredth year of its existence. The University of Leipsic is arranging a celebration for 1909 of its five-hundredth anniversary. We learn that the University of Leipsic was founded by secession of several thousand students, Dec. 14, 1409, from the flourishing university at Prague.

Suit for Damages Against German Surgeon.—A surgeon at Graz had occasion to take a skin flap of 2 sq. cm. from the thigh of a housemaid for transplantation. Some time afterward she instituted suit for damages, claiming $10,000 for the pain and lessening of her chances to get married, and $200 more for loss of time and expense of treatment. The surgeon was able to prove that the girl had given her formal consent beforehand, and the suit was dismissed.

Regional Bacteriologic Institutes in Belgium.—According to an article in the *Progrès Médical* for April 7, Belgium is the best provided with official laboratories for bacteriologic investigation of any country in the world to date. Each province has one or more, and the number of specimens sent for examination is constantly increasing every year. Since its foundation in 1896 to 1905 the laboratory at Liège has made about 35,000 analyses. Of this number 14,045 were made during the year 1904.

Beco Appointed Governor of Brabant.—Dr. E. Beco of Brussels, Belgium, has for some time been secretary-general of the department of agriculture and has had charge of the medical and sanitary matters connected with this department of the administration. He has recently been appointed governor of the province of Brabant. While congratulating him on his promotion, the *Gaz. Méd. Belge* mourns the loss of his able and devoted services for the welfare of the profession at large and the public health in general in his previous official capacity.

Vaccinated Scotland.—The report on vaccination in Scotland, in 1904, puts the argument in support of the operation in a somewhat striking manner. It states that the deaths from smallpox in 1903 numbered 41; of these persons 20 had been vaccinated, 12 had not, while the remaining 9 were doubtful. The report remarks: "Inferring from the average number of children vaccinated that about 94 per cent. of the population is vaccinated, these figures may be taken as indicating that the death rate among the unvaccinated is nearly fourteen times as great as it is among the vaccinated."

Medical Excursions for Medical Students.—A society has been formed in France to promote medical study trips of medical students. A large excursion of this kind was planned for April 18, a party of English medical students going to Paris for two or three days, and then on to Angers and Nantes, and home by way of Rouen and Havre. The medical students at each place visited welcomed the party and escorted them to the local medical institutions. The party returned after an instructive and enjoyable ten days' trip. The expense of the ocean trip debars American medical students from participating in the simple and inexpensive object lessons of such outings in other lands.

The Apathy of Londoners Toward Their Hospitals.—The duke of Fife, by some remarks regarding the apathetic attitude of Londoners toward their hospitals, has raised a storm of discussion in the lay press of the British metropolis. The duke of Fife, as acting president of the King of England Hospital Fund, said: "The great majority of Londoners do not subscribe to the hospitals at all, and the plain truth is that the London hospitals are maintained by a small number of charitable people." The consensus of opinion on the point raised by the duke of Fife is that Londoners are apathetic toward their hospitals, and that the total number of the London subscribers to the metropolitan hospitals does not exceed 20,000. It is stated that it is the well-to-do middle classes who are to blame.

Petition for Restriction of Experimental Research.—A committee in the German Senate recently reported on two petitions which asked for restrictions on laboratory research with animals. The spokesman remarked that one petition was "of the sentimental type, signed by society ladies, by a foreign diplomat accredited to the court of Berlin, by 'nature healers' and others, but not by a single person to whom the world owes any scientific progress. Many of the signatures were evidently given 'merely to oblige,' and the signers would be much surprised if their physicians were to refuse to make an injection of antidiphtheria serum in case of need in their families." The *Deutsche med. Wochft.* states that in his virgin speech, von Bergmann endorsed the condemnatory report of the committee with cutting sarcasm.

Exhibition of Appliances for Care of the Sick.—An exhibition of this kind was held at Berlin in 1899 and proved so popular that a credit of nearly $4,000 was left after its closure. A committee was recently formed to urge the appropriation of this sum for the foundation of a permanent educational exhibit of everything connected with the care of the sick. The committee has accomplished its purpose, and the exhibit was recently thrown open to the public in the new "Empress Frederick House," which was described in these columns on page 894. A model sick room and nursery are part of the exhibit. Owing to the comparatively small space, the committee aimed to exhibit only the most practicable and approved appliances, but even of these there is a bewildering array. Means to entertain, occupy and divert the patients are also shown, and garments for the very sick and for convalescents. The exhibition is described in detail in the *Zeitft. für aerztliche Fortbildung* for April 15.

Immunization with Bacteria Killed with Sugar.—Levy and Blumenthal of Strasburg announce that solutions of sugar have a marked bactericidal action, proportional to their concentration. They describe in the *Med. Klinik* for April 22 a number of experiments in which a single subcutaneous injection of typhoid bacteria treated with sugar rendered guinea-pigs immune to five to ten times the fatal intraperitoneal dose of virulent bacilli. They used galactose as the most convenient form of sugar, applying 1 to 4 mg. in a dry powder or dissolved in physiologic salt solution, to typhoid bacilli whose virulence had been tested and found to be one-tenth of the standard loop. The sugar and bacilli were then shaken up well at 37 C. and injected unfiltered. Rabbits injected with 2 mg. were also protected against fatal intraperitoneal infection. They conclude from their research that the prospects are encouraging for similar immunization of man with this simple, convenient and harmless technic. The sugar does not have a destructive action on the bodies of the bacteria and consequently interferes less with the generation of antibodies.

A 25 per cent. solution of galactose killed cholera vibrios in one to two hours, streptococci and diphtheria bacilli in six hours, tubercle bacilli in four or five days, and typhoid bacilli in less than seventy-two hours.

Disease Among Alien Emigrants in Glasgow.—Dr. A. K. Chalmers, medical health officer for Glasgow, in a report to the city council calls attention to grave defects in the housing and inspection of aliens detained in Glasgow while waiting for the steamer to convey them to America. He referred particularly to the case of a Russian Jew, who was admitted to the isolation hospital suffering from smallpox. The man arrived from Russia via Rotterdam and Grangemouth on March 22, and with four others was acommodated in one of the hotels of the city. On the same evening he visited the shop of a fellow-countryman who, observing an eruption on his face, took him to another hotel which is also used by emigrants and at once communicated with the medical officer of the shipping company concerned. In this latter hotel the patient was detained in a room by himself, but in the previous hotel he occupied two rooms in succession and had opportunities for mixing with between 400 and 500 people who were accommodated in the hotel. The aliens act of 1905 holds the shipping companies responsible for the completion of transit of such persons as they have introduced into this country, but while in Glasgow, as this case illustrates, infection from a smallpox patient may reach a considerable section of the resident population before its presence is recognized. The *Lancet* states that it would seem desirable that so long as this traffic continues these emigrants should be housed by themselves and regularly inspected so that the public may have a reasonable degree of protection against imported disease. There is no daily medical inspection of emigrants, although the interpreters employed are expected to report at once any case of sickness coming under their notice.

Fifth German Congress for Orthopedic Surgery.—One of the features of this congress, which was held at Berlin in the first week of April, was the application of water power in orthopedics. The apparatus constructed for the purpose by Machol of Garré's clinic, Breslau, was briefly described in THE JOURNAL recently, on page 839. In his report of the congress in the *Deutsche med. Wochft.* for April 19, Muskat refers to it as an ingenious application of valve pumps which allows the use of a new source of power for active and passive movements, surpassing in simplicity and cheapness all other methods to date. Another interesting feature of the congress was the presentation by Finck of Charkow, in Russia, of 3 patients cured of Pott's disease and hump by prolonged lying in a plaster bed with gradual over-correction of the hump. He has thus treated 66 patients, and 52 are completely cured with no trace left of the hump. The others are cured, with 2 exceptions, but he does not call these cases entirely successful. Muskat refers to his work and technic as indicating important progress in conservative orthopedic surgery. It is the result of many years' experience. Finck assumes that the hump is the result of contraction of ligaments more than of muscles, and that reduction can not be realized by traction, but only by gradual action of dorsoventral pressure. This reduces the hump by retracing the steps that produced it. This he accomplishes by means of a pad of folded compresses, forming a cross, placed in the plaster bed beneath the hump. The spine is more amenable to reduction when horizontal. Very slowly, not until after several months to a year, the hump thus becomes reduced, and then a celluloid corset is applied, retaining the pressure on the hump. The patient is not allowed at first to be up more than half an hour, to a maximum of six hours. The entire treatment requires three or four years before the patient is finally dismissed, but the results are brilliant.

Thirty-fifth German Congress of Surgery.—This congress convened at Berlin April 4; the surgical experiences gathered during the Russo-Japanese war opened the proceedings. Among the points emphasized by the Russian surgeon, Zoege von Manteuffel, was that the battles are mostly in the night, and that the wounded always leave the field by the route they took in going. He trephines at once all tangential skull wounds, but not the diametral. Bergman of Berlin commented on the little progress that has been made in military surgery since the Russo Turkish war. All agreed on the value of immobilization of wounds in the joints and restriction of primary operations. Sauerbruch reported that hemorrhage could be prevented in experimental operations on the skull by arranging the skull part of the head in his air cabinet, under over-pressure, with the rest of the head outside. Rehn and König advocated partial resection of the thymus if it interferes with respiration, the latter presenting a child whose thymus had been removed in infancy for thymic asthma, and rickets developed. Krönig reported excellent results from a combination of spinal anesthesia with the scopolamin-morphin technic for gynecologic operations. The greatest interest, perhaps, centered in the experiences reported in regard to passive congestion in the treatment of acute inflammatory processes. Bier stated that he had applied it in 1,500 cases. Before adopting this treatment he had never been able to save a tendon bathed in pus, while under the artificial hyperemia he had now a record of 17 complete recoveries in 25 cases of suppurative processes in the tendon sheaths. Küster styled the method the greatest progress in surgery since Lister's discovery. Bardenheuer remarked that he had not been successful with the method until he sent for one of Bier's assistants to show him the correct technic. Since then his results had been fine. He had been able to save 5 out of 7 cases of phlegmon of the tendon sheaths. Thole of Dantsic asserted that we have no means of dosing this method, and that it has no scientific basis, but he was interrupted by murmurs of disapproval to such an extent that the president of the congress, Körte, of Berlin, had to call the meeting to order. The *Semaine Médicale* for April 11 and 18 has a full report of the congress, and our German exchanges are publishing reports in lengthy installments.

Organization of the Profession in Italy.—A most remarkable congress was recently held at Rome, which signifies much for the progress of the profession and its organization in Italy, as also for the public health in general. The group of physicians in the national legislature, the famous "Fascio Medico Parlamentare," arranged what they called a sanitary congress, and summoned all the district doctors, veterinarians and pharmacists throughout the country to a conference. The Italian laws require that each community or group of very small communities must have a salaried physician and midwife. The physician is appointed and discharged by the local authorities, and the overcrowding of the profession and sharp competition have reduced the salaries below the living point among other abuses. The conference was summoned to discuss these and other matters and suggest legislation. In his opening address Baccelli described the peculiarly favored position of the physician in ancient Rome. He was exempt from military and civic duties; his property could not be seized for debt, and any one who injured or defamed him had to pay a large fine. The number of physicians in a place was regulated by law, and the rulers of the city were responsible for keeping the number within the legal limit. Four thousand sunburned and weatherbeaten district physicians from all parts of the country to the remotest hamlets gathered at Rome in March in response to the official summons, and the proceedings, although not strictly parliamentary, yet amply accomplished the aims of the organizers. One resolution voted was for legislation which would give a legal, official standing to associations of physicians. The minimal salary to be paid by a community was also voted as 200 lire a month (about $40). Another resolution was for the adoption of uniform conditions for applicants for the position of district physician. Heretofore the communities were free to make any exactions and conditions they chose. A plea for Sunday rest was also made. This great convocation enabled the medical men in parliament to come into closer touch with medical conditions throughout the country and with the needs of the populace and their physicians than could have been obtained in any other way. It was also a great event for the district doctors. The membership fee of $1 (60 cents for members of the family) entitled to a reduction of 75 per cent. on all lines of transportation throughout the country for forty days.

Baccelli and the Great Policlinico at Rome.—The *Gazzetta degli Ospedali* for April 15 is devoted entirely to an illustrated description of the great public hospital and clinical school, the Policlinico, which owes its inception to Guido Baccelli and was formally inaugurated on the fiftieth anniversary of his entry into the practice of his profession. The occasion was celebrated as an opportunity for homage to Baccelli, and a gold tablet, bronze laurel wreath, doctoral diamond ring, etc., were presented to him with ceremonies of a national and international character. The king of Italy presided, and addresses were made by Riehl on behalf of Austria, by De Mayer for Belgium, Bouchard for France, Livierato for Greece, MacAlister for Great Britain, De Bildt for Sweden, and Koranyi for Hungary. Congratulations were also wired from the United States and Germany. The *Gazzetta* states that the Policlinico is the largest single clinical school in Europe, and that only some of those in the United States can be compared with it. The grounds cover an area of 160,000 square meters, and are out-

side the city proper, on an eminence. The various clinics are separate, but with a connecting corridor, each a two-story building with amphitheater in the central part, corridors each side and two wards in the pavilions at each end. The buildings are heated by steam, which is also used for disinfecting the operating rooms, etc. Besides Baccelli's contributions to medical science, mentioned recently in these columns on page 1044, the addresses emphasized his important work as senator and then as minister of public instruction, minister of agriculture, delegate to international congresses, etc. He introduced elective courses into the universities and dispensed with examinations for the students standing highest in their classes, allowing them to complete their courses with regular study instead of the tumult of examination days. To him Rome owes the recent excavations in the Forum and at Pompeii, and the establishment of the Gallery of Modern Arts and the Historical Institute. He founded the first chair of agrarian bacteriology, and it was during his term as minister of agriculture that the antimalaria legislation was framed and adopted. The Policlinico is regarded as his greatest triumph, as it embodies advanced ideas in many respects. The cornerstone was laid in 1888 and it is not yet entirely completed. The *Gazzetta* gives illustrations of the Boston City Hospital and of some other American institutions for comparison, remarking that the arrangement of the Johns Hopkins Hospital is most like that of the Policlinico. It refers to Boston as "the Athens or rather the Edinburgh of the United States, whose medical school enjoys a reputation surpassing that of its rival cities, New York and Philadelphia."

The German Day Health Resorts.—Germany now has 30 of the fresh-air daytime sanitariums, for men or for women, first introduced in 1900. The patients sleep at home, but spend nearly all their waking hours at the resort, which is in some accessible forest glade near the town, on some trolley or suburban road, which usually grants reduced rates to the bearers of the sanitarium admission ticket. A lunch is given free in the forenoon and afternoon, and a good dinner at noon; other food can be obtained at any time at minimal rates. There are few regulations except that all must keep still in the reclining chairs for two hours after dinner, and that smoking is prohibited. At first the resorts were kept open only in summer, but the success of keeping one near Berlin open all the year around has been so marked that the others will probably follow suit. The persons taking advantage of these resorts are mostly tuberculous and are either waiting to be admitted to a sanatorium or recently dismissed from one, or do not wish to go to a sanatorium. These resorts are probably one of the manifold results of the compulsory insurance of wage-earners in Germany. The insurance companies find it cheaper to bend their energies to cure their policyholders than to pay indemnities for disability. Some of the German cities have placed one of the public schools in some outlying woodland location, and children who are found to be candidates for or already affected with tuberculosis, rickets or scrofula are allowed to attend this school. The school work is kept up regularly, but much of it is done out of doors. The lesson hours are short, with frequent long recesses for play, out of doors or in open pavilions, and nourishing meals are given the children. The success of the school at Charlottenburg has surpassed all anticipations. It has encouraged the authorities to establish another, which was formally opened April 17, principally designed for children with rickets. This school has dormitories where the children sleep at night, so as to give them the benefit of the country air both night and day. An article in the *Lancet* for April 14 gives the impressions of a visitor to some of these day health resorts. They are erected by the Red Cross Society, but the expenses for maintenance are met by private subscriptions and by the sums paid *per capita* by the insurance companies which send the majority of the patients. The Germans call these day health resorts *Walderholungsstütte*, whose syllables allow a glimpse of woodland wilds, recovering health, taking recreation and amusement and retrieving damage. The article in the *Lancet* discusses the advisability of the introduction of the system into Great Britain, remarking that the local trades unions, sick clubs and lodges may in time also find it to their pecuniary interest to help cure their policy-holders instead of paying sick benefits. If they undertake the task they will soon find that true economy means the greatest thoroughness in this case.

LONDON LETTER.

Death of an Englishman from Sleeping Sickness.

One of the first English victims of sleeping sickness is Mr. John Mahon, who has just died at University College Hospital. About three years ago he was superintendent of the botanic gardens at Entebbe, Uganda, when he was bitten by a tsetse fly. He was invalided home for an undefined complaint which proved after some months' residence in England to be sleeping sickness. For the first 18 months after his return he performed some light duties at the Colonial Institute. After that the torpor of the disease seized him. He wasted to a skeleton. Another victim to the disease is Lieutenant Forbes Tulloch, who has been invalided home from Entebbe.

Rat Fleas and Plague.

Some very striking experiments have been conducted at Bombay to prove that rat fleas carry plague, not only from rat to rat, but from rat to man. In a room in which a rat dead from plague had been found animals were placed in cages. Some of the cages were protected by fine metallic gauze to keep away the fleas. The unprotected animals sickened and died of plague and rat fleas infected with plague were found on them. The protected animals escaped. The health authorities of Bombay are taking active measures with regard to rats found in the streets and houses. Where plague rats are found the houses are marked and disinfected and the occupants are warned.

Sir Thomas Browne's Skull.

At Norwich the question of the reinterment of the skull of Sir Thomas Browne, the author of the "Religio Medici," which has long been preserved at the Norfolk and Norwich Hospital, was discussed at the annual meeting of the governors of that charity. Sir Thomas Browne, who lived at Norwich in the middle of the seventeenth century, was buried in the Church of St. Peter, Mancroft. During the early part of the last century when an interment was taking place in the adjoining vault his grave was accidentally broken into. It is alleged that the skull was abstracted, and after passing through various hands became the property of the hospital authorities, who latterly have preserved it in a handsome reliquary presented for the purpose by Professor Osler, who is one of Browne's most devoted admirers. Recently there has been a considerable expression of opinion at Norwich, backed up by the vicar and church wardens of St. Peter, Mancroft, that the skull ought to be returned to the tomb whence it was taken. The hospital governors unanimously passed a resolution agreeing to this course on condition that the tomb should be opened in the presence of representatives of the hospital with a view to satisfying them that the remains therein are without a skull.

Action by a Midwife Against a Physician.

An action has been brought in Ireland against a physician by a midwife under peculiar circumstances. She attended a woman in her confinement, which was quite normal. A few days later she attended another case, in which the mother died of sepsis. For several days she attended both cases, and after she had ceased attendance on the first case the infant developed suppurative omphalitis, from which it died. Two days before death it was taken to the physician in a dying state. He prescribed one-half grain doses of gray powder. He certified the cause of death to be "spreading cellulitis." The parents asked what this meant and he said blood poisoning. The father immediately connected the death of the child with that of the other patient of the midwife, who had died of sepsis, and said that she had communicated the disease and that he would take action against her. He reported the case to the public health authorities, who sent for the nurse's clothes in order to have them sterilized. The midwife considered that this was detrimental to her practice and brought an action for damages against the parents of the child, two relatives and the physician. The cases were very protracted. The chief point relied on by the plaintiff was that the physician first diagnosed syphilis and that he altered this diagnosis out of spite against the midwife because she advised patients of his to seek advice elsewhere. The midwife contended that the administration of mercury showed that the child suffered from syphilis. This notion was, of course, easily refuted. A verdict for the defendant was returned.

The Prevention of Sleeping Sickness.

Dr. J. L. Todd, who has been several years on the west coast of Africa investigating sleeping sickness and other tropical diseases on behalf of the Liverpool School of Tropical Medicine, delivered an address before the members of the African trade section of the Liverpool chamber of commerce on "The Danger of the Spread of Sleeping Sickness Through Africa and the Necessary Measures for Its Prevention." He said that from 400,000 to 600,000 natives have died from the disease during the last ten years. In the opening up of the

country sleeping sickness took a great extension. It is along the much used routes that the disease has spread and is spreading. The way in which it has been recommended that the disease might be combated in the Congo Free State is by the establishment of medical posts of inspection along the most traveled trade routes and the transportation of infected persons at present living in uninfected districts to localities already infected. In the Congo it was found that enlargement of the cervical glands without obvious cause in natives might be taken as a sign of sleeping sickness and, therefore, every employer of labor should be informed of the significance of this symptom. It was decided at the meeting to send a resolution to the colonial secretary calling the attention of the secretary of state for the colonies to the alarming spread of sleeping sickness in British and foreign areas in Africa, and to the desire of the African trade section of the Liverpool chamber of commerce that steps should at once be taken in conjunction with other African powers to investigate and, as far as possible, arrest the progress of the disease.

The Health of the City of London.

The report of the health officer for the city of London for 1905 has just been issued and contains much interesting information. The night population of the famous "square mile" at the middle of that year was 22,425, although the day population was estimated at 369,380. It is unsatisfactory to find that 23 per cent. of the samples of milk examined were found unclean, and that a further 9 per cent. were tuberculous. The principal railway companies with one exception have recast their by-laws during the year and made spitting on platforms, booking offices, etc., or in railway carriages, a punitive offense. The penalty is a fine not exceeding $8 for a first offense and not exceeding $40 for any subsequent offense. Many hair dressers have availed themselves of the decision of the corporation to grant voluntary certificates of the sanitary condition of their premises, and those who first opposed the movement now recognize the advantage of falling into line with those who have been placed on the register. The production of ice creams—a trade almost entirely in the hands of Italians—has been controlled, and no case of illness attributed to eating ice cream has occurred. The report contains a good deal about the sophistication of butter. Certain traders sell an article containing as much as 25 per cent. of water, which has been ingeniously incorporated with genuine butter, and is sold as "milk-blended butter." The makers protect themselves from prosecution by disclosing the fact that the article is a mixture, but the ordinary buyer is not likely to know that the milk added contains from 86 to 88 per cent. of water. The buyer is deceived, and thinks that he is buying cheap butter, but the quantity of water present makes it dear. Another disadvantage is that the keeping properties of the butter are diminished by the addition of the water, especially during warm weather. The sale of this stuff has opened the door to another sophistication—the admixture with butter of skimmed milk and cocoanut oil.

The Government and Vaccination; the Jenner Society's Suggestion.

The report of the executive committee of the Jenner Society for 1905 is of special interest, in view of the fact that with the advent to power of the liberal government there is renewed activity in antivaccination circles. Established in 1896, the society has done much to demonstrate the value of vaccination. Among the honorary vice-presidents are Lord Lister, Sir W. Huggins, Sir W. Turner and Dr. Ferguson (ex-president of the B.M.A.). The vaccination act of 1898 was avowedly an experiment, and was therefore enacted for only five years. It would have ceased to operate last year, but was kept alive for another year by the expiring laws act. The government must take action during the ensuing session, but as the time is already mortgaged for more pressing questions there will be no time to discuss a vaccination bill. It may be concluded, therefore, that the act will be kept alive for another year, but with an explicit promise of legislation in 1907. During the interval the government will have ample opportunity for gaining information of the weak points of the act and of other matters involved in the administration of vaccination with which the act did not deal. The Jenner Society suggests that preliminary to such legislation the government will do well to institute a formal inquiry, preferably by a special commission, into the whole subject of vaccination administration, for it is much more to the defects of its administration than to any disbelief in the protective value of vaccination itself that the practice owes any unpopularity it may have acquired. The necessity of meeting the agitation against vaccination is emphasized: "That the country which gave birth to this great discovery should be left a prey to the unchallenged vituperation of Jenner and to the mischievous deprecation of his work would be as grave a discredit to it as it would be a deplorable abnegation of duty."

The Lowest Birth Rate on Record.

The decline of the birth rate which has been evident in recent years continues to be shown by the most recent statistics. The report of the registrar general for 1904 has just been issued. In the middle of that year the estimated population of England and Wales was 33,763,434, of whom 16,316,647 were males and 17,446,787 females. The marriage rate was 15.2 per 1,000—.04 below the rate of 1903 and .06 below the average of the ten years 1894-1903. The birth rate was 27.9 per 1,000—the lowest on record. This was .05 below the rate of 1903 and 1.3 below the average of the last 10 years. Since 1895, when the birth rate was 30.3, it has gradually declined. The death rate was 16.2, which was 1 per 1,000 below the mean rate of the 10 years 1894-1903. The deaths of infants under one year were in the proportion of 145 per 1,000 births, as compared with 132 in 1903 and 150 in the 10 years 1894-1903. The proportion in 1904 was higher than in 1902 and 1903, but lower than in any other years since 1894. Among the deaths were 59 reputed centenarians—17 males and 42 females. Deaths from smallpox numbered 507—a rate of 15 per 1,000,000 of the population. Chickenpox is said to have caused 104 deaths, but it is thought that most of these were due to smallpox; 28 deaths were due to cowpox or other effects of vaccination. Deaths from tuberculosis numbered 60,205—3,526 less than the average of the previous 10 years. The deaths from cancer showed an increase; they numbered 29,682 and exceeded by 2,461 the average of the last 10 years. The deaths of 2,523 men and 822 women were attributed to suicide, the figures in both cases exceeding the average.

Award of Prizes by Royal College of Physicians and Surgeons.

The Council of the Royal College of Surgeons has awarded the Walker prize of $500, instituted to encourage investigation into the pathology and therapeutics of cancer, to Professor Jensen of Copenhagen. The committee appointed to advise the council in reference to the award reported that after receiving valuable advice and assistance from eminent American, Belgian, Danish, French, German, Italian, Swedish, Swiss and British surgeons and pathologists regarding the work in their respective countries, and after carefully examining papers on the pathology and treatment of cancer published in various languages during the last five years, they found that in any report presented to the council much important work could not be considered because it had not been done within the prescribed time limit; because it had no direct bearing on the treatment of cancer; because it was still being pursued and the prize could scarcely be awarded to it at this stage of its progress. In recommending Professor Jensen, the committee quoted the description of his work from a letter of Professor Salomonsen of the State Serum Institute of Copenhagen: "The inoculation of cancer from animal to animal had been made in comparatively few cases, and therefore afforded no decisive material for the study of cancer. Professor Jensen first succeeded in discovering a tumor in the mouse which made the experimental investigation of cancer on a large scale possible. He first carried out a large series of inoculations through 35 generations, comprehending about 1,000 mice, and thus gave the impulse to certain experimental investigations which are now being carried out in different parts of the world. He thus made it possible to investigate, and was the first to investigate systematically, the effect of different factors (heat, light, chemical agents, radium, etc.) on the cancer cells. He further demonstrated the possibility of producing an anticancer serum for mice by the injection of the crushed tumor into rabbits. The serum of rabbits thus prepared has been injected into mice suffering from cancer, with the result that the cancer tumors in many of them disappeared permanently." The Jacksonian prize for 1905 was awarded to Reginald Cheyne Elmsley, M.S., F.R.C.S., for his essay on "The Pathology and Treatment of Deformities of the Long Bones Due to Disease Occurring During and After Adolescence." The subject for 1907 will be "The Operative Surgery of the Heart and Lungs, Including the Pericardium and the Pleura." The subject selected for Cartwright prize for 1906-10 is "The Prevention of Dental Caries." Dr. Lucas Championnière of the Hotel Dieu, Paris, was elected as honorary fellow of the college. The honorary medal of the college was awarded to Lieut. Col. Sir Havelock Charles, I.M.S., in appreciative recognition of his gift of anthropologic specimens—an addition to the museum of special value not only on the account of the number and variety of the specimens, but also on account of the authentic particulars attached to them.

Pharmacology

The Physician and the Pharmacist.

As has been emphasized repeatedly, the true function of the pharmacist has been sadly curtailed by physicians prescribing ready-made proprietary mixtures. In too many localities the pharmacist has found that the work for which he had been educated, that of compounding physicians' prescriptions, was not called for; that the filling of prescriptions too often had become merely the handing over the counter of some ready-prepared nostrum, which he well knew was, if not a fraud, at least no better than he could have easily compounded. He not only lost respect for, and confidence in, physicians, therefore, but naturally turned his attention to something else. And so the ordinary drug store has become almost everything except a place for compounding physicians' prescriptions; and the pharmacist instead of being the assistant of the physician has become in too many instances his competitor. As the movement has progressed for more sane prescribing by physicians, the pharmacists have become interested and are moving for reform in their ranks. We have noted the organization of local branches of the American Pharmaceutical Association in Chicago and Philadelphia, and last week a similar organization was started in Washington, D. C. Our correspondent tells us that 23 out of the 39 Washington members of the American Pharmaceutical Association were present and that much interest was manifested. A temporary organization was effected, and a committee was appointed to draw up a constitution and by-laws and to communicate with the officers of the national and other branch associations.

The meeting of the Philadelphia Branch of the American Pharmaceutical Association, held April 24, at the College of Physicians, was largely devoted to a discussion of the relations existing between physicians and pharmacists with a view of bringing the latter in closer touch with and more in harmony with the ideas, ideals and present requirements of members of the medical profession. Among the subjects discussed were: "The Discontinuance of the Indiscriminate Renewal of Prescriptions," "Discouraging the Sale and Use of 'Patent Medicines' or Nostrums," and "The Desirability of Endorsing and Assisting the Council on Pharmacy and Chemistry of the American Medical Association." In speaking on the last subject, Henry Kraemer, professor of pharmacognosy in the Philadelphia College of Pharmacy, said:

> The importance of endorsing and assisting the Council on Pharmacy and Chemistry is such that I feel that it should be given due consideration at this time, and that this branch should go on record, at a very early date, as being in favor of the principles that are evolved. As is well known, the American Medical Association has instituted a Council on Pharmacy and Chemistry, whose object it is to inquire into and to report on the composition, claims and reliability of the proprietary preparations that are now being exploited through the medical profession. That some regulation of the present traffic in proprietary preparations is necessary, and desirable, is apparent when we remember that from a small and quite unostentatious beginning, less than three decades ago, the traffic in these so-called ethical proprietaries has increased and developed until to-day they rival "patent medicines" in number, and, if anything, excel them in the number and the variety of exorbitant claims and misleading statements.
>
> The object of this council is not to commend or to condemn proprietary medicines, but simply to point out the shortcomings and the errors in connection with the more objectionable articles and to enumerate, in a proposed book or pamphlet, such of the new and non-official remedies as meet with the several provisions of the rules that have been adopted for the guidance of the council. These rules, it may be added, are thoroughly in harmony with the constitution and the principles of the American Pharmaceutical Association, and it will not be necessary, therefore, to discuss them in detail at this time. Suffice it to say, that all that is required is the elimination of false and misleading statements from the labels and advertising matter and the publication, in place thereof, of demonstrable facts as to the composition, uses and limitations of the several preparations.
>
> That secrecy is not an absolute necessity for commercial success is evidenced by a large number of really excellent proprietary preparations, but is perhaps best illustrated by the successful and, at the same time, eminently honorable career of the late Dr. E. R. Squibb, who was for many years one of the most active and most highly respected members of the American Pharmaceutical Association.
>
> From his first venture in business, for himself, Dr. Squibb gave the fullest and most complete publicity not alone to his formulas, but also to the most minute details of his processes, and despite this liberality, or perhaps because of it, he was enabled to develop a huge and profitable business, that, in all of its various phases, was successful beyond the question of a doubt.
>
> It may, of course, be suggested that conditions have changed and that to-day it would be practically impossible to establish a successful enterprise on the lines followed by Dr. Squibb. This suggestion is best controverted by the fact that the American Medical Association has found it to be desirable to institute this advisory council to inquire into the status of several proprietary remedies that are now being offered with a view of eliminating, or at least restricting the sale of, such of the articles as do not meet with the requirements of the adopted rules.

Dr. Miles Medical Company vs. The May Drug Company.

The Pittsburg *Legal Journal*, April 11, 1906, gives the text of an important decision by Judge Macfarlane in the above case. The Miles Medical Company, to enforce its rule that its remedies should not be sold under a certain price, fixed by contract with certain retailers, brought suit in equity against the May Drug Company, proprietors of a cut-rate drug store in Pittsburg, who had obtained these remedies at reduced rate of Louis Hoechstetter, of Sehring, Ohio, thus causing him to break his contract and to injure the plaintiff. It appears that the Miles Medical Company manufactures and advertises certain remedies which it claims will cure affections of the heart and of the nervous system generally recognized as incurable, that it had spent about $2,000,000 in advertising, that its sales amount to over $500,000 each year and that it maintained a bureau of free medical advice, by which it pretended to make diagnoses of heart disease without physical examination and without seeing the patient. The plaintiff's representations that its remedies are a cure for heart disease, epilepsy and rheumatism are regarded by the court as untrue and calculated to deceive the public.

In regard to the law the opinion of Judge Macfarlane holds that the contract made with Hoechstetter is not in restraint of trade, and it seems that the defendants should be enjoined, but for other facts and conclusions of law. The false statements of the plaintiff, however, bar its action and its business as against public policy. Its advertisement of a cure for secret or venereal disease and for the cure of diseases peculiarly appertaining to females is contrary to Pennsylvania statutes and prevents it from obtaining relief in a court of equity.

The judge says:

> On the argument the position was taken generally that the vendor or manufacturer of a proprietary medicine whose ingredients were secret had no standing in a court of equity. When this suggestion was made on the preliminary hearing we had no evidence as to the plaintiff's products and mode of business other than the general testimony of its witnesses.
>
> The courts have frequently supported bills of such plaintiffs, but in many cases, no doubt, the question was not raised. On further consideration it is our opinion that the public health requires protection against these preparations and that the vendor of remedies of unknown ingredients advertised and sold as remedies for diseases should not be aided by courts of equity. If he sees fit to keep them a "trade secret" and to persuade the public to "dose" with his mysteries, let him not come into chancery.
>
> We take judicial notice of the facts of medical science which are known to intelligent persons, although not educated as physicians, but we need not go even so far in finding that the plaintiff can not cure incurable cases. Were it necessary for the disposition of this case we might go even further than we have in the fifth finding. The averment of the bill that their preparations "are intended to be and are a consistent comprehensive system of remedies and medicines," and "each of said remedies being indicated as a specific for certain kindred ills and diseases," may bear different constructions, but in its ordinary meaning is startling and needs something more than its statement to carry conviction.
>
> Although these defenses were not set up in the answer, when it appears that the plaintiff's business is based on misrepresentations or when it appears, as we find on examining the pamphlet sent out with its medicines, that it is violating a criminal statute and is conducting a business contrary to public policy, it needs no authority that it is the duty of the court to deny relief. . . .
>
> Its "medical experts" are attempting to prescribe at long range. The attempt to diagnose cases of heart disease, for example, without a physical examination can not be too severely reprobated. We do not need to be told by medical authority, our own knowledge informs us, that not only a careful examination but great skill is needed to detect the numerous valvular and other diseases of the heart. Further, any intelligent, thoughtful person knows that many of the symptoms listed by the plaintiff are caused by other diseases or disorders. For one sick to diagnose his own case is the

height of folly, yet this plaintiff advises the poor deluded victim to pass on subjects often baffling to the highest medical skill, to settle the disease and then to take "Dr. Miles' Nervine or Heart Cure" or some other high-sounding preparation of unknown ingredients, recommended in glowing "testimonials." . . .

The enormous business done by the proprietors of medicines and the serious menace which it is to the health and lives of the public require us to scrutinize carefully the ground on which the plaintiff stands, and as it has been shown that it belongs to a reprehensible class we decline to grant it a decree.

Societies Take Action.

At its regular monthly meeting, held April 11, 1906, the Warren County (Ky.) Medical Society passed the following resolution:

WHEREAS, Through the carelessness, negligence and ignorance of the doctors and people of this country and the criminal cupidity of certain low-grade drug manufacturing establishments the country has been flooded with nostrums, many of which are highly dangerous to innocent users, and many others entirely useless and inert, thereby causing harm to persons using them by delaying the proper treatment of their diseases; and,

WHEREAS, The American Medical Association has established a Council on Pharmacy and Chemistry, composed of eminent, disinterested pharmacists, whose duty is to analyze drugs and pharmaceuticals from reputable manufacturers, so that the profession may be properly advised of the constituents of such preparations. Now, therefore, be it

Resolved, By the Warren County Medical Association that we hereby endorse the creation of the Council on Pharmacy and Chemistry by the American Medical Association and its plans, rules and purposes, and that we pledge the people of Warren County that its physicians will not administer or prescribe any nostrum or medicament the exact contents of which are not known to all men.

A. T. MCCORMACK,
J. H. BLACKBURN,
E. RAU,
Committee.

At a meeting of the McLeod County (Minn.) Medical Society, held at Glencoe, April 12, a resolution was adopted expressing satisfaction with the work of the Council on Pharmacy and Chemistry on the nostrum evil and a desire for its continuance.

The Rutherford County (Tenn.) Medical Society, at its regular monthly meeting, held May 2, adopted the following resolutions:

WHEREAS, The Council on Pharmacy and Chemistry of the American Medical Association, acting by the authority of that organization, is carrying on a campaign of education regarding the use of nostrums by physicians, and is investigating the various products offered to physicians as remedial agents, the purpose of which is to defend the decency and dignity of the medical profession for the benefit of all the people against nostrum prescribing, advertising and selling. Be it therefore

Resolved, That the Rutherford County Medical Society heartily commends the work undertaken by the Council on Pharmacy and Chemistry of the American Medical Association; Be It Further,

Resolved, That the society condemns the practice of prescribing and advertising secret remedies of any kind, and be it

Resolved, That a copy of these resolutions be forwarded to THE JOURNAL of the American Medical Association.

At a meeting of the Waterbury (Conn.) Medical Association, held April 9, the following resolutions proposed by Dr. W. L. Barber were unanimously adopted:

Resolved, 1. That the members of the Waterbury Medical Association hereby agree to support with cordiality the efforts of the New Haven Medical Association in its campaign against the sale of all nostrums, and that we approve heartily the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry for the purpose of investigating and reporting on all non-official drugs. 2. That we heartily commend the action of these journals, medical or secular, and will in every way help them in the educational campaign now being carried on against the manufacturing of all secret medicines or mixtures with unknown formulas.

The Auglaize County (Ohio) Medical Society, at a meeting held April 12, adopted the following resolution:

Resolved, That the Auglaize County Medical Society heartily endorses the stand taken by *Collier's Weekly* and the *Ladies' Home Journal* on the "patent medicine" fraud, and that we give them our support in the self-sacrificing fight that they are making to enlighten the public as to frauds as practiced by "patent-medicine" concerns, also that every member of this society should show his appreciation by becoming a subscriber to these two journals.

At a meeting of the San Luis Valley (Colo.) Medical Society, held April 20, resolutions were passed heartily endorsing the good work of the Council on Pharmacy and Chemistry in its fight against the nostrum and proprietary-medicine evil.

Similar resolutions were adopted by the Fifth District (Wis.) Medical Society at a meeting held at Brillon, April 12, and by the Dallas (Texas) Medical and Surgical Association.

Letters of Endorsement.

Dr. R. J. Owens, Will Spring, Mo., writes:

"I am heartily in sympathy with the Association in the war on the nostrum evil and am willing to contribute my energies in fighting it."

Dr. W. H. Woodworth, Delaware, Ohio, writes:

"We are pleased with your work and the crusade against frauds, although we have shown the fact poorly."

Dr. C. F. Engels, Ballard, Wash., writes:

"With full and cordial sympathy for THE JOURNAL'S efforts to enlighten the profession regarding the nostrum evil."

Dr. Calvin N. Weidner, Manchester, Conn., writes:

"I am very much pleased with the stand THE JOURNAL has taken on the "patent medicine" and proprietary drug business. I think your articles on "The Physician and the Pharmacopeia" are excellent and very helpful, as they contain the kind of knowledge none of us can have too much of. If we as practitioners understand our pharmacopeia as we should, the proprietary firms with their wonderful mixtures and free samples would find a barren field in which to labor. It is to our everlasting shame that we let them teach us our materia medica."

Dr. W. J. Wilson, Jr., Detroit, writes:

I wish to compliment the Association on the work it has done and is doing anent "patent" and proprietary medicines. It seems to me that at this juncture no greater service can be done for the rank and file of the profession. Some mud-slinging was to have been expected, but it will only serve to besmirch the hands of those who throw, and at the same time will display the position of the enemy. The Association is as much to be congratulated on its foes as on its friends. I am sure that the Association will win in this contest and will secure great additions to its membership as outsiders see evidences of its practical value in this way.

Insurance Examination Fees

The Minimum Fee.

At the annual meeting of the Montgomery County (Md.) Medical Society, April 17, a resolution was adopted fixing $5 as the minimum fee to be charged for examining an applicant for life insurance, when a full examination is required.

The Fee Problem in 1870.

It may be of interest at this time to quote from the minutes the following preambles and resolutions adopted by the American Medical Association at its meeting held in 1870 at Washington, D. C.:

"On motion of Dr. C. T. Collins, of Massachusetts, the following was unanimously adopted:

"WHEREAS, The business of life insurance has already become one of great magnitude in the United States, and is daily increasing in importance, affording large profits to those interested; and

"WHEREAS, The responsibility assumed by the medical examiners does not seem to have been heretofore properly appreciated by the different companies; therefore,

"*Resolved*, That this association recommend that the sum of five dollars should be the lowest amount charged for every such examination." (Tr., vol. xxi, 1870, p. 34.)

Fees for Life Insurance Examinations.

BROOKINGS, S. D., March 31, 1906.

To the Editor:—I enclose a letter from the medical director of the Mutual Life Insurance Company of New York, and a copy of my answer. It seems to me that it is high time that the profession should take some concerted action in matters of this kind. Therefore, I wish, through the columns of THE JOURNAL, to appeal to the medical profession of the United States to refuse to be dictated to in any such manner. An opportunity is before us to demonstrate that skilled medical service is not to be bought in the open market like pork.

J. G. PARSONS.

THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK.

NEW YORK, March 27, 1906.

Dr. J. G. Parsons, President E. D. Medical Society, Brookings, S. D.

Dear Doctor:—Your favor of recent date replying to one which I wrote Dr. F. B. McGarvey, of Cavour, S. D., is at hand.

I enclose copy of the fee schedule which has just been put into effect in this company.

The practical significance of the new fee schedule lies in the fact that it reduces the average fee for a medical examination from $5 to something over $3; how much over three dollars the average fee will be, can not be stated now, for it depends on the number of applications in the larger amounts and also on the extra allowance of $1 for each additional specimen of urine obtained by order of the company. Under the old flat fee of $5 no extra allowance was made. This retrenchment looks like a small matter, but owing to the large number of examinations now made for this company, it will effect a substantial saving to the policy-holders. That statement is a sufficient reason for the company's desire to establish this new schedule.

Rigid economizing is now being done in all departments of the company, so that this retrenchment is only one of many. The medical examiner must bear in mind that his fee is paid by the policy-holders, even though his bill is presented to the company, for this company is not an impersonal corporation, but is a partnership in which every policy-holder participates, both in earnings and expenses. Do not think that the medical departent is practicing economy any more than all the other departments of the company. The heaviest reduction of expenses has occurred among the executive officers, where the president's salary has been reduced two-thirds, from $150,000 to $50,000, and the salaries of the other executive and administrative officers have also been reduced so that the saving effected in this one branch alone amounts to over $200,000. The allowance for advertising has been cut down from over $300,000 to $100,000. The cost of supplies has been reduced over $300,000. The agency expenses have also been materially reduced. The economies that have been and are being made in every department will represent a saving of over one million dollars this year.

The claim was made and substantiated during the recent investigation that too high a price was paid for new business. The company is endeavoring in every way and in every department to reduce this cost of new business, and the medical examiner must not feel that he is being singled out for economy, for such is not the case. Each department sympathizes with its own work and working force, but we are all loyally striving to put the company on such a basis that the charges of extravagance which were made during the late investigation will have no foundation hereafter.

This matter of the medical examiner's fee resolves itself into two questions:

First: Is the fee adequate compensation for the service rendered? It seems to be adequate when measured by the customary fees of competent physicians. This is certainly true of the physicians in country villages and smaller cities. In the larger cities, on the other hand, some physicians may get larger fees than these, and to them the compensation would be inadequate. We can not, however, discriminate among our examiners and pay a larger fee to the city examiner than we pay to the country practitioner, for this would be manifestly unfair to the latter. That the medical profession in this country regard the new fee schedule as adequate is shown by the fact that thus far we have had only 900 refusals as against over 12,000 signed acceptances.

Second: Will the company get satisfactory services for these fees? We have no doubt of this from the experience of other companies which have a graded fee schedule similar to this. This company was rather late in adopting a graded fee schedule. Other companies have had one in force for years.

In the early days of the company, the flat fee of $5 was a small extravagance which did not show owing to the limited number of examinations. Even ten years ago, the burden had become noticeable, though not to a marked degree, owing to the larger size of the application at that time. The medical department of this company resisted any modification of the flat fee of $5 until it was proven beyond question that it was extravagant, and that good service could be obtained for less.

I have written you thus fully to show you the justice of the company's position. Do you think it fair to discriminate against us by charging us $5 for an examination, while you charge considerably less for examinations for fraternal and assessment associations? Is this fair to a company like the Mutual Life, which is fraternal in the highest sense of the term? You surely do not give a less thorough examination for one of these organizations than you do for us? If you are going to be entirely fair in this matter, why do you not charge $5 for all insurance examinations?

I shall be very glad to hear from you further in this matter.

BRANDRETH SYMONDS, M.D.
Medical Director.

BROOKINGS, S. D., March 31, 1906.

Dr. Brandreth Symonds, Medical Director, Mutual Life Ins. Co., New York:

Dear Doctor: I have your letter of the 27th inst. at hand. I note the position you take in regard to the matter, and while it does not concern me personally, I think I voice the sentiment of the physicians in this part of the country when I make reply to the following statements:

The matter of economy in the expenses of your company is not exactly a good matter to discuss here. The relative value of the services actually rendered by Mr. McCurdy and your medical examiners considering the remuneration received, is better discussed elsewhere. The value of medical services rendered is the only thing we have to discuss.

A carefully made life insurance examination is worth $5 if it is worth a penny. It is the safeguard which stands between the company and a possible loss of thousands. The company can not afford to take even a thousand dollar chance in debating over five. Compared with examinations made in practice generally, you must admit that there is here no opportunity for repeated observations. The examination must be made with the greatest care, and time taken to gather all the desired information at once. The report calls for the exercise of professional judgment and greatest accuracy in detailed statements. All these things are of unquestioned value, and are worth, as stated before, $5 if worth a penny.

I do not believe you will get as satisfactory service when you cut your fee from $5 to $3. I make this statement with all respect to medical men everywhere; but I know them to be human, and not necessarily disposed to become altruistic to the extent of two dollars' worth when a business institution like the Mutual Life cuts off two dollars from a reasonable fee under the pretext of "saving." I have a somewhat exteaded medical acquaintance, most of whom are men whom I highly respect as men and physicians. I think nearly all of them would admit to me in private conversation (as many have) that the services rendered for an inadequate fee do not compare favorably with those rendered for a reasonable compensation, pure charity, of course, excepted.

That this feeling is prevalent among medical men the country over may be inferred from their attitude toward lodge and contract practice. As regards fraternal examinations, I am surprised that an old line company should consider itself in the same class as a fraternal. We are usually given to understand that they are nosafe concerns. I believe that physicians generally give fraternal companies their money's worth, and no more. The bulk of the work done for fraternals is done in "classes," and practically all the writing is done by the "deputy" before the examiner sees the applicants. The actual work done by the examiner is small, and usually very superficial at that. A "deputy" of one fraternal society told me a "good joke" on one of their examiners who had forwarded to the medical director a bunch of twenty-five examinations of a "class." These reports were all returned to the examiner for reconsideration because the specific gravity of the urine in every case was 1020. A rather abnormally normal class! This illustrates the disposition on the part of the examiner to give the *money's worth.* Failure to be careful in details may mean overlooking a vital point in an examination.

You practically admit that you expect greater care in examination when greater fees are paid. You pay $7.50 for examination when the application is for $25,000. You expect just as careful examination for $3.00 when the application is for only $1,000. This extra fee is surely not a gratuity. In five hundred examinations you would save $1,000, but you would run the risk of letting in several poor risks which would make your loss far greater than your saving, by getting only three dollars' worth of examination in cases that needed five dollars' worth.

You mention the fact that under your new schedule of fees the average of fees received would be raised by examining applicants for larger amounts. This would hardly affect the country doctors. They have few opportunities to examine applicants for large amounts. It is largely the fault of the profession that they have not been sufficiently organized to demand higher standards of work and fair fees.

In the case of this society you have an example of an effort to bring about this result. Accordingly, we have made an item in our fee bill placing the minimum fee for life insurance examination at $5. I believe that the physicians of the whole country feel about this matter as we do, but, owing to lack of proper organization have not met the proposition as we have. If the reputable physicians of the United States stood together it would not be possible for any insurance company to take advantage of the curtailing of expenses enforced by recent exposures, to compel their examiners to accept two dollars less than a reasonable fee for their work.

J. G. PARSONS,
President Eastern Dakota Medical Society.

Medical Legislation

Favor Army Medical Reorganization Bill.

At the recent bi-monthly meeting of the Blair County (Pa.) Medical Society at Altoona the following resolutions were adopted:

Resolved, That the Blair County Medical Society believes it is the duty of our government to establish a national health organization and that congress be urged to aid such organization in every proper way in the prosecution of its duties in improving and protecting the public health.

We further trust, by the union of all now existing public health services, soon to have a department of public health with representation in the president's cabinet.

Resolved, That a copy of these resolutions be furnished our United States senators, Hon. Boies Penrose and Hon. Philander C. Knox and Hon. John M. Reynolds, our representative in Congress, with the request that they use every honorable effort to secure the passage of all laws favorable to this subject.

The second resolution was adopted as follows:

WHEREAS, We believe that the present Medical Corps of the Army is entirely inadaquate to look after the health and welfare of our Army in time of war, and that it should be increased to furnish our Army with an adequate number of physicians and surgeons, trained in the care of large bodies of men in camp life and on the march; therefore be it

Resolved, That we urge on our United States senators, Hon. Boies Penrose and Hon. Philander C. Knox and our congressman, Hon. J. M. Reynolds, at Washington, the importance of upholding the army medical reorganization bill and request that they do all in their power to secure the passage of the same.

This resolution was also adopted:

Resolved, That we urge on our United State senators, Hon. Boies Penrose and Philander C. Knox, and congressman, Hon. J. M. Reynolds, that they use all honorable efforts to secure the passage of such laws as will tend to establish institutions for the separate care and treatment of indigent consumptives.

Urge Passage of Pure-Food Bill.

The Elbert County (Ga.) Medical Society, at its regular meeting, March 3, 1906, adopted the following resolutions. A copy has been sent to each member of the House from Georgia:

WHEREAS, There is now pending before the House of Representatives, an act for preventing the adulteration or misbranding of foods, or drugs, and for regulating traffic therein, and for other purposes; and as we believe that such an act is absolutely necessary for the public health; therefore be it

Resolved, By the Elbert County (Ga.) Medical Society, that our representatives in Congress from Georgia are hereby respectfully requested to vote for said bill.

Resolved further, That a copy of these resolutions be sent to each representative from Georgia in Congress.

Correspondence

A Further Note on the Antiseptic Properties of Sodium Aurate.

BOSTON, April 30, 1906.

To the Editor:—In THE JOURNAL, Jan. 27, 1906, I described a non-irritating antiseptic solution, the active constituent of which was believed to be sodium aurate. I showed that this solution possessed strong bactericidal power and that its action was not appreciably affected by the presence of albumin. At that time the antiseptic had been used clinically in only a limited number of cases, but had given most encouraging results. Since then, it has been used in a larger number of cases, and I find that while it is effective in case of acute catarrhal conjunctivitis, its action in severe cases of gonorrheal ophthalmia is disappointing. The cases of the latter affection on which it was first tried were probably of a mild type, and no doubt would have done equally well under the usual methods of treatment. In several of the later cases, even after frequent and prolonged use of the antiseptic, the secretion showed an abundance of gonococci, both in pus cells and in desquamated epithelial cells. It seemed evident, therefore, that the antiseptic either did not penetrate the tissues or that its action was inhibited by the tissue fluids. I find that the latter is the correct explanation. When the 1 per cent. solution is mixed with an equal quantity of human serum (hydrocele fluid) its bactericidal power is immediately and completely destroyed, although no visible reaction takes place. This fact no doubt also explains the non-irritating property of the antiseptic. The test was not previously made because similar tests with egg albumin seemed to render it unnecessary.

The unsatisfactory results attending the treatment of gonorrheal ophthalmia with protargol and argyrol are no doubt to be attributed to a similar cause. I have already shown that argyrol is rendered ineffective by egg albumin; in fact, is precipitated by it when the latter is added in sufficient amount. I have since found that protargol, although not precipitated by albumin, is likewise rendered ineffective by it. Hydrocele fluid does not precipitate solutions of either of these preparations, but nevertheless inhibits their action when added in sufficient amount to satisfy them.

It seems unlikely, therefore, that sodium aurate can be of much real value in the treatment of gonorrheal ophthalmia or gonorrheal urethritis. It is possible that it might reduce the frequency of corneal infection, but this would require a large series of cases to determine. There is no doubt, however, that it is effective in other forms of conjunctivitis, probably because it prevents constant reinfection of the tissues. Whether or not it is more effective than protargol for this purpose I am not yet convinced. It would seem to be a satisfactory antiseptic for the conjunctival sac to be used preliminary to operations, for which purpose I now employ it.

F. H. VERHOEFF.

Colloidal Silver.

NEW YORK, March 26, 1906.

To the Editor:—The article on "The Pharmacopeia and the Physician," in THE JOURNAL, March 24, 1906, contains the following surprising passage:

"Credé some years ago introduced a soluble form of metallic silver, for which certain manufacturers make the fabulous claim that it is an efficient disinfectant of blood and tissue. So long as septic diseases resist all treatment, it seems strange that reputable manufacturers will make such obvious misstatements."

In the same issue (page 909) you print an abstract of a report by Prof. Solis-Cohen, recording striking results from colloidal silver in endocardites and associated sepses, bronchopneumonia with pronounced meningeal symptoms, etc. That the claim of efficacy for colloidal silver is by no means "fabulous" is shown by a literature of more than 250 publications, with contributions by such men as Profs. Roswell Park, Warren Coleman, G. T. Harrison, D. L. Edsall, H. N. Vineberg, Edward Speidel, A. Jacobi, Frank Allport, C. S. Bacon, N. S. Davis, F. Forchheimer and many others. That colloidal silver produces profound physiologic effects is shown by such researches as those of Bamberger, Beyer, Schade, Rodsewicz and Robin. The last-named writes in International Clinics, 1905, volume III, that the colloid metals exert a powerful catalytic action like that of the organic diastases and are destined to take a prominent place in functional therapeutics.

While colloidal silver is no such powerful bactericide as the salts of silver, it most assuredly does accomplish blood and tissue disinfection by an inhibitory effect on germ growth, by its electro-catalytic properties, and by its leucocytogenetic action, if it is not used too late.

In view of these facts, the assertion that our claims for colloidal silver are "fabulous" and "obvious misstatements," is unjustified.

SCHERING & GLATZ.

The Association Button.

NEW ORLEANS, April 26, 1906.

To the Editor:—I hope that you will again and again urge the advisability of every member wearing the button, for by this means the public will soon learn to distinguish us from the many irregulars who infest every large city and call themselves doctors. Besides, the constant sight of these buttons will give the wearers power and influence in the public eye.

T. S. DABNEY, M.D.

CINCINNATI, April 24, 1906.

To the Editor:—The letter of Dr. Fletcher Ingals in THE JOURNAL meets with my hearty approval. There certainly should be a spirit of fraternity among physicians both at home and abroad, and especially so among members of the American Medical Association. I am surprised that the button is not more worn at other times than at the annual sessions.

E. S. McKEE, M.D.

What's the Difference?

CHICAGO, ILL., April 26, 1906.

To the Editor:—The following advertisement, which has appeared in various papers, was taken from *Life* for April 5, 1906, where it appeared along with advertisements of corsets, Scotch whisky and other such things:

WILL YOU TRY THE BATTLE CREEK LIFE FOR 30 DAYS?
WILL YOU EAT THE FOODS AND LIVE THE LIFE OUR EXPERTS RECOMMEND?

Do You Really Want to Be Perfectly Well?

Tell us, then, if you are ailing, or if in good health that you wish to remain so. Let us send you our book. It is very interesting. The life it recommends you can live in your own *home*. You ought to read about it. Nowhere else are so many specialists studying this one thing alone: how to get well and how to *stay* well. No organization anywhere has been so successful. None other is so near the truth. And the basis of all this is right food, right living, keeping the stomach right. All this we can explain in our book—explain clearly, logically, interestingly, so that you may *understand*. Isn't it worth the mere effort of writing us simply to know? Won't you ask for our book to-day? Address the Battle Creek Sanitarium Co., Ltd., Dept. A 191, Battle Creek, Mich.

Suppose you or I should insert in *Life:*

WILL YOU TRY MY TREATMENT FOR THIRTY DAYS?

Tell me if you are ailing or if (preposterous question)* you want to remain in good health.

Let me send you my book. The life it recommends you can live in your own home (by buying my things).

Nobody else is studying so thoroughly or has been so successful in solving the problems of how to get well and how to keep well. None other (than my earnest self) is so near the truth. (And doesn't this have the old familiar sound of the

* As the critics would say the parentheses are mine.—W. A. P.

letter-press that accompanies the picture of the gentleman in the orator's attitude in the advertisements we see in the daily papers?)

All this I explain in my little book, clearly, logically (and plausibly). Isn't it worth the effort of writing to know? (And isn't that like the gentleman with cures for this, that and the other who beseeches you to write him and wants to know if it isn't worth a postal card to get well?) Won't you write to-day (for if you put it off you are apt to forget it and I may be the loser, if you are not.) Address (so that I can keep track of my ads), Dept. X.

Suppose you or I perpetrated that sort of stuff on the community? What would be thought of us?

W. A. Pusey.

Warning Against Fraudulent Insurance Agent.

Summerville, S. C., April 27, 1906.

To the Editor:—If you will give publicity to the following you will do our profession a great service and aid in placing in the penitentiary one of the nerviest thieves in America. A man, six feet in height, with stubby, iron-gray moustache, large gray eyes with a decided outward and downward slant, rather prominent eyeballs, hair slightly curly, iron gray and rather thin over the forehead and on top of the head, weighing 260 pounds and about 60 years of age is traveling the country over, purporting to be an agent of the Columbian National Life Insurance Company. He has swindled a number of physicians in Charleston by the following scheme: He shows credentials as agent of the company and offers to appoint his intended victim a medical examiner and sell him stock of the company at a reduced price, representing that the stock is salable only to policy-holders and examining physicians, who can each purchase as many as four shares if they like, without being obliged to take a policy with the company. The unwary physician gives his check or $30 in cash, for which he receives a receipt agreeing to deliver stock of the American Investment Securities Company. The Columbian National Life Insurance Company repudiates him and asks for his arrest if seen again. He left Charleston, giving Asheville, N. C., as his destination.

A. H. Hayden.

Association News

THE BOSTON SESSION.

Railroad Rates—Limits of Tickets—Stop-over Privileges—Hotels—Other Announcements.

The last issue of The Journal was the Boston number, containing some twenty pages of pictures and descriptive matter of interest to those who will attend the fifty-seventh annual session of the American Medical Association at Boston, June 5-8, 1906. Some additional information is given below, and if any other announcements are received later they will appear in subsequent issues of The Journal.

Hotels.

The chairman of the Committee on Hotels, Dr. Charles Harrington, 8 The Fenway, Boston, calls attention again to the announcement of hotels which appeared in The Journal last week. It will be to the advantage of all who wish accommodations in Boston to write at once, giving particulars, so that reservations may be made for them. The committee announces that in addition to the hotels specified there are many others of excellent quality, as well as many boarding houses, where members will find pleasant accommodations. The committee will assign rooms in accordance with the wishes of those who write to them.

Loan Exhibit of Portraits of Ophthalmologists.

It has been decided to hold a loan exhibit of portraits of ophthalmologists in a hall adjacent to the amphitheater in which the Section on Ophthalmology is to meet. Members of the section, and others, are requested to co-operate in making this exhibition as large and representative as possible by forwarding by mail or express, to the Williams & Everett Company, 190 Boylston Street, Boston, any portraits (etchings, photographs, line engravings, paintings, etc.) of deceased ophthalmologists (especially Americans) that they may possess or can borrow for this purpose. The Williams & Everett Company will receive, unpack, care for and reship, without expense, any portrait so loaned. Credit will be given the lender, whose name should appear on or be attached to each portrait. When possible portraits should be forwarded without frames. From the pictures thus loaned it is expected to choose those that will best serve the purpose of the exhibit and to issue a catalogue to be distributed the first day of the session.

Pacific Coast August Return Limit Canceled.

The Transcontinental Passenger Association has withdrawn its proposed final return limit of August 31. The limit of all tickets will, therefore, be July 15.

Return Limit Extended.

As announced in The Journal last week, the final return limit of the Boston tickets, instead of June 30, will be July 15. Ordinarily the ticket will require the holder to leave Boston by June 18 after having had the ticket validated by the joint agent. To have the ticket extended it must be deposited with the agent not later than June 18, and it can be obtained just before departure.

Stop-over at New York.

Stop-over at New York may be obtained on the return trip on tickets reading via New York on these conditions:

1. The ticket must be validated by the joint agent at Boston.

2. The ticket must be deposited by the original purchaser in person with the joint agent at New York not later than one day after validation at Boston. (A fee of $1 is required.)

3. The passenger will call at the New York validating office for the ticket not more than two hours before the departure of the train out of New York (except that if trains leave after 6 p. m. and before 9 a. m. ticket will be delivered before 6 p. m.).

Note.—Ticket will not be good leaving New York later than the day following the date of leaving Boston unless stop-over certificate is secured. For example, one who leaves Boston on Friday, reaching New York Saturday morning, could stop off in New York until the evening of Saturday, but no longer without securing a stop-over certificate.

Those who wish to stop off at New York and whose tickets do not read via New York should consult the agents of their railroads or the railroad officials at Boston for arrangements for this privilege.

Validating Agencies.

The Boston validating agent is Mr. P. H. Gallaher, 63 Federal Street, corner of Franklin. Office hours, 8 a. m. to 6 p. m. daily up to July 15 inclusive, except Sunday, when office hours will be from 12 noon to 5 p. m.

The New York joint agent is Mr. W. F. Holwill, 182 Fifth avenue, New York. His office hours are 8 a. m. to 6 p. m. daily.

Rates and Dates of Sale.

The rate to Boston is one fare plus $1 for the round trip from territory east of the Mississippi River. Tickets will be on sale from May 31 or June 1 to June 9 in Central Passenger Association territory, but purchaser must not reach the gateways of the New England Passenger Association earlier than June 2 and must not arrive in Boston later than noon of June 12. Date of leaving Boston will not be earlier than June 2. (The return limit has been detailed above.)

Any One May Purchase Tickets.

Inquiries are received as to who may purchase tickets. These rates are open to any one, whether a physician or not.

An Ocean Trip to Boston.

Special excursion tickets are offered on boats of the Merchants' and Miners' Transportation Company, of Baltimore, between Boston, New York, Baltimore, Norfolk, Old Point Comfort, etc. A special round-trip from Baltimore to Boston is offered, going by way of Albany, Hudson River day line to New York and thence by rail to Baltimore at a rate of $24.55.

For further information address Mr. W. P. Turner, general passenger agent at Baltimore; also see below under the Baltimore & Ohio Railway.

Trains and Routes.

THE JOURNAL last week gave in brief the advantages of several special trains to Boston. The New York Central lines run a special train, with the finest possible equipment, from Chicago at 10:30 a. m., Sunday, June 3, to arrive at Boston at 2 p. m., Monday, June 4. Particulars of this train may be secured from Mr. L. F. Vosburgh, general western passenger agent, room 529 La Salle Street Station, Chicago. The committee on transportation of Chicago Medical Society has selected this train and this insures an enjoyable party. On tickets reading via this line stop-over of ten days at New York may be secured on the return trip, and these tickets will be accepted on the Hudson River day line steamers between Albany and New York in either or both directions, also on the steamers of the Cleveland and Buffalo Transit Company between Buffalo and Cleveland on return trip.

The Canadian Pacific offers a beautiful trip through the Thousand Islands, Canada, Quebec, the White and the Green Mountains. Further particulars may be had from Mr. A. C. Shaw, general passenger agent Canadian Pacific Railroad, Chicago.

The Wabash Railroad special train leaves Chicago, Sunday, June 3, at 10:30 p. m., and will reach Boston, Tuesday, June 5, at 7 a. m. For particulars address Mr. F. H. Tristram, assistant general passenger agent, 97 Adams street, Chicago.

The Baltimore & Ohio Railroad announces its regular trains through Philadelphia, Washington and New York, with stop-over privileges. Arrangements are made for a steamboat ride from Baltimore to Boston on the Merchants' and Miners' steamers, mentioned above, for $20 from Chicago to Boston and return. A neat booklet, which gives full details as to rates, routes, etc., has been issued by the Baltimore & Ohio Railroad, which can be had on application to W. W. Picking, district passenger agent, 244 Clark Street, Chicago.

Our wideawake Missouri Valley doctors expect to have a special train in two sections to run through the beautiful Grand Trunk Railway scenery, including the St. Lawrence River by boat. Through cars for this train will leave Missouri River points on the evening of May 31. The special trains will be formed in Chicago, leaving June 1 at 3 p. m. The arrival in Boston will be June 4. Further particulars of these trains may be had from Mr. George W. Vaux, assistant general passenger agent, 135 Adams Street, Chicago, or Dr. Charles Wood Fassett, St. Joseph. The latter emphasizes the advantage of this train in its early arrival in Boston.

The Commercial Exhibit at Boston.

The Committee of Arrangements expects to have a Commercial Exhibit at the Boston Session which will be one of the features of the gathering. Special pains have been taken to have this an assemblage of exhibits not only by firms which have sought the privilege, but by firms representing all the lines of manufacture and sale in which physicians would be at all interested. Quantity and mere display are to be disregarded and quality and representative character have been secured. According to the announcement of the committee in the *Boston Transcript*, the medical book display is to have a historical side as in addition to the usual elaborate display of books, a great collection of pictures, rare books, historical documents, etc., will be exhibited. In the drug line, manufacturing chemists will not content themselves with showing the preparations alone, but will exhibit methods of manufacture and use. The surgical instrument department will, it is said, outdo in interest all of its predecessors.

"Another extremely important exhibit, important especially to physicians, will be the automobile show, and it is expected that a special exhibit of physicians' carriages will stand opposite by way of comparison."

"Those having the arrangements of the exhibit in charge are making every effort to have it as practical, suggestive, useful and advantageous as possible to all concerned. A determined effort also is being made to attract only responsible firms."

NEW MEMBERS.

List of new members of the American Medical Association for the month of April, 1906:

ALABAMA.

Ballard, I. C., Gadsden.
Battle, J. K., Eufaula.
Beard, J. S., Troy.
Bowman, J. L., Union Springs.
Copeland, B. G., Birmingham.
Craddock, F. H., Sylacauga.
Fitts, Alston, Tuscaloosa.
Ison, H. L., Gadsden.
Killian, A. D., Holt.
McGeehee, H. T., Morris.
Moore, L. H., Orrville.
Morland, H. C. Birmingham.
Pornell, J. K., Reform.
Quin, W. E., Ft. Payne.
Robinson, E. M., Birmingham.
Wilkinson, J. E., Jr., Prattville.

ARIZONA.

Graham, R. W., Prescott.
McDonnell, J. K., Crown King.

ARKANSAS.

Cowger, Robert, Danville.
Fletcher, B. A., Augusta.
Greene, L. O., Pea Ridge.
Logan, B. C., Morrilton.
Reiser, G. F., Thornton.
Robinson, F. C., Henzen.
White, R. L., Little Rock.

CALIFORNIA.

Austin, S. A., Los Angeles.
Carlson, C. H., San Francisco.
Cornish, E. J., La Moine.
Culver, J. T., Oak Park.
Dickson, C. S., Riverside.
Farnum, C. E., San Francisco.
Frasse, I. N., San José.
Jackson, W. J., San Francisco.
Johnson, A. W., San Francisco.
Johnson, W. S., San Francisco.
Kizer, W. H., Ocean Park.
Lorini, R., Coronado.
Newton, J. C., San Francisco.
Ponge, C. A., Colusa.
Potts, R. D., Oxnard.
Putnam, H. A., Inglewood.
Royal, A. B., Pasadena.
Saylor, B. F., French Gulch.
Whitman, C. H., San Francisco.

COLORADO.

Barrett, G. W., Greeley.
Buchanan, F. G., Denver.
Dowling, J. T., Sopris.
Gilmore, G. B., Colorado City.
Hutchinson, A. F., Durango.
Jones, N. W., Kersey.
Leisenring, P. S., San Diego.
McKinnie, L. H., Colorado Springs.
Nordlander, A. G. E., Leadville.
Ray, J. C. B., Denver.
Reed, W. W., La Junta
Wood, Lucy M., Boulder.

CONNECTICUT.

Driscoll, D. M., Bridgeport.
Downs, F. B., Bridgeport.
Sanford, W. H., New Haven
Smith, Charles, Riverside.

DISTRICT OF COLUMBIA.

Copeland, E. P., Washington.
Gleason, J. K. P., Washington.
Hull, T. Y., Washington.
Jones, T. G., Washington.
Lovering, P. A., Washington.
MacNamee, A. M., Washington.
St. Clair, F. A., Washington.
Tubman, J. R., Washington.

FLORIDA.

Young, C. T., Plant City.

GEORGIA.

Benson, C. F., Atlanta.
Downey, J. H., Gainesville.
Greene, A. R., Cartersville.
Hancock, T. H., Atlanta.
Jarnagin, W. C., Atlanta
Overstreet, G. M., Sylvania.
Rudolph, H. L., Gainesville.
Tanner, J. B., Lumpkin.
Ware, R. M., Waycross.
White, G. R., Savannah.
Wood, W. E., Dalton.

IDAHO.

Clarke, Jessie K., Welser.
Roy, D. C., Malad.

ILLINOIS.

Bigelow, F. E., Chicago.
Capel, A. B., Shawneetown.
Clark, J. A., Chicago.
Dawson, J. A., Chicago.
De Mendoza, A. H., Chicago.
Diamond, I. B., Chicago.
Dornbusch, H. W., Chicago.
Fehring, W. B., Chicago.
Fleming, J. L., Chicago.
Giles, W. N., Wataga.
Harms, Henry, Chicago.
Higgins, S. G., Chicago.
Holmes, A. G. H., Chicago.
Laftry, T. D., Chicago.
Learned, Clare S., Chicago.
Lierle, G. A., Quincy.
MacDonald, J. W., Aurora.
Malbridge, L. P., Decatur.
Maschek, F. J., Chicago.
McGann, M. E., Joliet.
Nelson, Bernard, Chicago.
Pattison, H. A., Venid.
Reis, Henry, Jr., Belleville.
Schussler, H. K., Chicago.
Sherman, Paul, Shawneetown.
Simpson, J., Morrisonville.
Smith, Carroll, East St. Louis.
Strauch, August, Chicago.
Tulte, J. E., Rockford.
Welfeld, Jos., Chicago.
Welton, C. B., Peoria.
Willingham, R. H., Elizabethtown.
Worthley, H. S., Joliet.

INDIANA.

Bolling, L. A., Attica.
De Vaney, M. O., Indianapolis.
Fuller, W. H., No. Vernon.
Gibbons, G. L., Huron.
Hutchings, B. M., Crawfordsville.
Ivey, D. R., La Crosse.
Jones, J. G., Vincennes.
Kelly, J. C., Mitchell.
Kennedy, W. H., Shelbyville.
Magenheimer, V. A., Waverly
Mendenhall, F. E., Elwood.
Miller, H. M., So. Bend.
Newhouse, O. A., Hillsdale.
Newlin, S. C., Anderson.
Spencer, W. A., Wolcott.
Treon, J. F., Aurora.
White, W. C., Indianapolis.

INDIAN TERRITORY.

Bartley, J. P., Comanche.
Clinton, F. S., Tulsa.
De Groat, C. E., Muskogee.
Harris, A. J., So. McAlester.
Heltzman, C. W., Muskogee.
Howell, H. A., Holdenville.
Nichols, J. T., Muskogee.
Oldham, I. B., Muskogee.
Skeen, M. P., Wapamucka.
Taylor, J. C., Chelsea.
Tilly, W. T., Pryor Creek

IOWA.

Abbott, C. A., Oskaloosa.
Blowers, W. M., Bassett.
Boucher, F. H., Marshalltown.
Bullock, W. E., Lake Park
Bushall, Anfin, Iowa City.
Edgerly, E. T., Ottumwa.
Fraser, L. E., Macedonia.
Frear, E. D., Sloan.
Grimwood, W. H., Ft. Madison.
Lelpziger, H. A., Burlington.
Martin, W. J., Red Oak.
Molloy, Edward, Fairbank
Moon, A. C., Williamsburg.
Norton, W. S., Muscatine.
O'Doherty, D., Charlotte.
Sherban, P. B., Colfax
Starbuck, T. D., Davenport
Wilson, O. F., Lacey.

KANSAS.

Buck, C. B., Abilene
Biddle, G. A., Emporia.
Burris, T. E., Allen.
Cochran, Athol, Iuka.
Davies, H. E., Emporia.
Ernest, F. J., Topeka.
Hodgson, J. E., Long Island.
Hoke, H. E., So. Haven.
King, L. R., Junction City
Lathrop, W. C., Norton.
Long, T. C., Munden.
Longenecker, C. W., Kingman
Longenecker, D. F., Emporia
McCalman, I. J., Piper.
Metcalf, J. E., Salina.
Milner, J. O., Kansas City
Silkman, W. D., Manhattan
Sterrett, W. P., Kansas City
Spessard, M. R., Glen Elder.
Storrs, W. D., Topeka.

Wooden, G. M., Bluff City.
Yates, W. S., Junction City.

KENTUCKY.

Acton, J. M., Lancaster.
Caldwell, J. A., Peach Grove.
Clark, F. S., Louisville.
Digby, J. M., Newport.
Dowden, A. P., Eminence.
Frazer, T. A., Marion.
Gianini, R. E., Central City.
Kozer, F. McC., Albany.
Marable, J. H., Lafayette.
McCreery, J. C., Cave City.
Moore, W. B., Cynthiana.
Owen, F. W., Irvins.
Robertson, L. L., Middlesboro.
Shelley, D. C. L., Albany.
Turner, J. W., Jeffersontown.
Wilson, J. W., Lexington.

LOUISIANA.

Aguin, John, New Orleans.
Convillon, S. J., Plaucheville.
Groetsch, C. W., New Orleans.
Kaffie, L., Jackson.
Knighton, J. E., Homer.
Lavigne, B., New Orleans.
O'Reilly, W. T., New Orleans.
Rapp, J. A., New Orleans.
St. Dizier, J. O., Walls.
Salomon, L. F., New Orleans.
Simon, S., New Orleans.
Troescher, W. G., New Orleans.

MAINE.

Cook, E. C., York.
Hollard, R. A., Calais.
Jordan, F. H., So. Portland.
Mitchell, Alfred, Brunswick.
Smith, A. L., Machias.
Tobie, W. F., Portland.
Webber, S. E., Calais.
Williams, C. E., Houlton.

MARYLAND.

Bubert, C. H., Baltimore.
Garrison, J. S., Baltimore.
Hall, W. E., Crisfield.
Lankford, H. M., Princess Anne.
Purdum, H. D., Baltimore.

MASSACHUSETTS.

Abbott, S. W., Lawrence.
Adams, J. D., Boston.
Adams, John, Boston.
Arms, B. L., Boston.
Ayer, S. H., Boston.
Barney, J. D., Boston.
Baketel, R. V., Methuen.
Breck, Samuel, Boston.
Brownrigg, J. S., Roxbury.
Brown, H. A., Whitinsville.
Burns, F. S., Boston.
Brown, E. W., Northampton.
Bulkeley, F. S., Ayer.
Carleton, C. G., Lawrence.
Carolin, W. T., Lowell.
Carroll, J. J., Holyoke.
Conner, H. L., Haverhill.
Chandler, C. L., Fitchburg.
Drummey, N. D., Boston.
Deering, G. E., Worcester.
Donahue, W. F., Cambridge.
Donnelly, J. B., Gardner.
Dixon, R. B., Boston.
Everett, O. H., Worcester.
Frame, Joseph, Rockland.
Fitz, G. W., Boston.
Fountain, O. R., Boston.
Fuller, D. H., Jamaica Plain.
Gardner, A. P., Lowell.
Gavin, J. H., Boston.
Gay, H. S., Boston.
Grant, W. V., Lawrence.
Greene, R. A., Lowell.
Gould, A. H., Boston.
Hall, W. D., Medford.
Hammond, W. J., Boston.
Hersey, F. C., Boston.
Howland, J. B., Gardner.
Hubbard, F. A., Taunton.
Hunt, E. L., Worcester.
Hutchison, C. P., Aubindale.
Hillson, F. C., Boston.
Jones, F. E., Quincy.
Kellogg, F. L., Roxbury.
Knight, C. E., Rockland.
Konikow, M. J., Boston.
Lockhart, J. S., Cambridge.
Meehan, P. J., Lowell.
Merrill, A. P., Pittsfield.
Mignault, Rodrique, Lowell.
Moore, G. C., Boston.
Mosher, H. P., Boston.
Newton, W. C., Revere.
Paine, A. K., Boston.
Parks, S. H., Reading.
Powers, H. H., Brookline.
Prince, Morton, Boston.
Raymond, L. H., Somerville.
Reardon, D. B., Quincy.
Reilly, J. A., Boston.
Rice, R. A., Fitchburg.
Rogers, O. F., Boston.
Sargent, W. L., Quincy.
Sherburne, A. E., Boston.
Sherman, Mary H., Brookfield.
Sleeper, W. J., Westford.
Smith, H. F. M., Orange.
Spooner, J. W., Hingham.
Stack, C. F., Hyde Park.
Stanton, Joseph, Newton.
Strong, L. W., Boston.
Strivester, C. P., Boston.
Tenney, W. N., Canton.
Thurlow, J. H., Boston.
Tuttle, G. T., Waverly.
Wheeler, Leonard, Worcester.
Wilson, L. T., Boston.
Withington, C. F., Boston.
Wolbach, C. B., Boston.

MICHIGAN.

Berge, F. E., Grand Rapids.
Burgess, J. M., Detroit.
Campbell, Christopher, Detroit.
Dunning, G. M., Lansing.
Dutton, C. A., Detroit.
Henry, T. J., Detroit.
Hutchinson, W. G., Detroit.
Lindgren, Umarl, Ishpeming.
Lounce, S. L., Vandalia.
Mersch, E. A., Detroit.
McEachren, A. D., Detroit.
Moody, P. E., Detroit.
Roberts, A. J., Jackson.
Seybold, G. A., Jackson.
Starring, Anna M. E., Detroit.
Tupper, F. L., Flint.
Windham, P. S., Saginaw.

MINNESOTA.

Blake, James, Hopkins.
Cole, H. B., Franklin.
Davison, P. C., Clara City.
Donovan, J. J., Eden Valley.
Dunn, J. T., Wykoff.
Deziel, Godfrey, Minneapolis.
Greene, F. W., Waterville.
Griswold, F. E., Hoffman.
Helland, J. W., Maynard.
Kanne, C. W., Arlington.
Kistler, C. M., Minneapolis.
Landeen, P. G., Stillwater.
Mascheer, A. P., Rochester.
Moore, L. A., Tower.
Nass, H. A., Mabel.
Read, C. A., Minneapolis.
Richards, W. G., Sanborn.
Ridgway, A. M., Annandale.
Rogers, C. E., Montevideo.
Stabo, T., Spring Grove.
Severson, Chas., Pelham.
Wilkinson, J. C., Red Lake Falls.
Williams, R. V., Rushford.

MISSISSIPPI.

Bell, M. H., Vicksburg.
Lewis, H. L., Street.
Montroy, C. L., Coahoma.

MISSOURI.

Albrecht, F. H., St. Louis.
Bartlett, J. R., Springfield.
Beall, J. W., Malden.
Beckham, G. S., St. Louis.
Bell, W. E., Osceola.
Benton, A. W., Neosho.
Birchett, J. G., Cardwell.
Chapman, H. N., St. Louis.
Carver, H. N., Chillicothe.
Cherrington, J. F., Chillicothe.
Conrad, L. W., Albany.
Drake, G. S., Jr., St. Louis.
Engelbach, Wm., St. Louis.
Ewing, A. E., St. Louis.
Fowlston, John, Kansas City.
Gorin, M. G., St. Louis.
Guhman, C. N., St. Louis.
Harrison, R. T., Dixon.
Hoeckler, E. H., St. Louis.
Hill, H. S., Springfield.
Hulett, R. F., Pleb Hill.
James, R. M., Joplin.
Lane, Hallie F., Kansas City
Miller, W. J., St. Louis.
Munsch, A. P., St. Louis.
Neff, F. C., Kansas City.
Owens, R. J., Mill Spring.
Riesmeyer, L. T., St. Louis.
Salter, J. C., St. Louis.
Singer, I. J., St. Louis.
Tanner, W. C., Montrose.
Wyche, Charles, St. Louis.

MONTANA.

Strain, Earle, Great Falls.

NEBRASKA.

Bancroft, W. M., Lexington.
Beatty, J. R., Butte.
Blanchard, G. L., Craig.
Briteli, O. A., St. Edward.
Cepelka, J. A. N., Crete.
Clough, F. E., Alliance.
Cone, E. E., Oxford.
Gooden, C. W., Edison.
Knode, A. R., Omaha.
Lynch, Albert, Nehawka.
Morrow, H. N., Fremont.
Pruner, W. H., Kennard.
Stowitts, A. D., Sidney.

NEW HAMPSHIRE.

Congdon, C. E., Nashau.
Hyland, J. B., Keene.
Petit, A. W., Nashua.
Smith, H. L., Nashua.
Wilder, R. E., Whitefield.

NEW JERSEY.

Abbott, H. D., Bayonne.
Cassady, J. B., Burlington.
Condon, W. J., New Brunswick.
Dingelstedt, R. H., Hoboken.
Fayerman, W. B., Atlantic City.
Fogg, E. S., Bridgeton.
Fritts, J. T., Plainfield.
Hagney, F. W., Newark.
Ingling, H. W., Freehold.
Lockwood, F. W., East Orange.
Potter, P. A., East Orange.
Rogers, E. B., Collingswood.
Schlemm, Richard, Town of Union.
Sutphen, C. E., Newark.
Teeter, C. E., Newark.
Titus, G. E., Hightstown.
Towle, H. A., Newark.
Treganown, Ambrose, So. Amboy.
Vreeland, G. W., Paterson.
Wolff, F. C., Hoboken.

NEW MEXICO.

Mayes, C. M., Roswell.
Shuler, J. J., Raton.
Whitehill, F. P., Silver City.

NEW YORK.

Adams, Edward, New York City.
Applebee, Ira, Albany.
Ashley, D. D., New York City.
Archambault, J. L., New York City.
Auersperg, Francis, New York City.
Barney, B. A., Hornellsville.
Beasley, C. D., Brooklyn.
Beck, A. W., New York City.
Becker, J. P., Brooklyn.
Bicak, J. F., New York City.
Boetliger, Carl, L. I. City.
Bongartz, Joseph, Kingston.
Bonner, Adolph, New York City.
Boswell, C. O., Rochester.
Braislin, W. C., Brooklyn.
Brecht, F. E. L., Buffalo.
Bristow, A. T., Brooklyn.
Brown, C. W. M., Elmira.
Buckmaster, C. W., Yonkers.
Burke, J. A., New York City.
Butler, W. E., Brooklyn.
Carpenter, G. S., Waverly.
Camobell, A. M., Mt. Vernon.
Card, J. H., Poughkeepsie.
Carpenter, T. B., Buffalo.
Casselbeer, H. A., New York City.
Chandler, George, Kingston.
Clark, Pierce, New York City.
Clark, I. T., Rochester.
Coakley, C. G., New York City.
Conner, L. A., New York City.
Cornwell, H. C. de V., New York City.
Cortright, C. B., Brooklyn.
Cottis, G. W., Batavia.
Cox, H. M., New York City.
Crook, J. K., New York City.
Darrow, C. E., Rochester.
Davis, A. F., Jr., New York City.
Dawson, Edward, Brooklyn.
Dobson, W. G., Poughkeepsie.
Douglass, A. O., Little Falls.
Durkee, J. W., Sea Cliff.
Dusseldorf, L. M., Brooklyn.
Eccles, R. G., Brooklyn.
Edgerly, J. W., New York City.
Edgar, J. C., New York City.
Faust, Louis, Schenectady.
Feinberg, I. L., New York City.
Garbutt, Frank, Mechanicsville.
Gleason, W. S., Newburgh.
Giles, J. E., New York City.
Graeser, H. R. A., New York City
Greenstein, Harry, New York City.
Guttman, John, New York City.
Gutman, Jacob, New York City.
Harris, T. J., New York City.
Hibbs, R. A., New York City.
Hinman, E. E., Albany.
Howley, B. M., New York City.
Hubbard, W. S., Brooklyn.
Holloway, H., New York City.
Jackson, G. T., New York City.
Jacobsohn, Wm., New York City.
Jacobson, Nathan, Syracuse.
Jordan, C. H. R., New York City.
Joslin, J. W., Johnstown.
Keenan, Michael, Troy.
Kerr, A. T., Ithaca.
Kingsbury, Jerome, New York City.
Klotz, H. G., New York City.
Knickerbocker, H. J., Geneva.
Koplik, Henry, New York City.
Krauss, W. C., Buffalo.
MacGruer, H. A., Syracuse.
Mambert, A. H., Kingston.
Mann, F. J., Poughkeepsie.
Mathewson, D. P., Bath.
May, C. H., New York City.
McCready, J. W., New York City.
McCreery, F. R., New York City.
McCulloch, W. C., Gloversville.
McIntyre, W. H., New York City.
McMannis, W. T., New York City.
McMichael, G. H., Buffalo.
Messerschmitt, Frederick, Rochester.
Meara, F. S., New York City.
Meierhof, E. L., New York City.
Mendelson, W., New York City.
Miller, Edward, New York City.
Miller, J. A., New York City.
Miller, A. F., Batavia.
Morton, W. J., New York City.
Nieder, C. F., Geneva.
Nielsen, J. C. E., Brooklyn.
Nisselson, Max, New York City.
Palmer, F. A., Mechanicsville.
Pease, H. D., Albany.
Peet, E. W., New York City.
Piffard, H. G., New York City.
Plumley, W. F., Rochester.
Potter, N. B., New York City.
Poucher, J. W., Poughkeepsie.
Prentice, A. C., New York City.
Putnam, C. R. L., New York City.
Power, J. F., New York City.
Radcliff, Sue, Yonkers.
Regue, P. A., Brooklyn.
Rogers, D. L., Bolton Landing.
Rogers, John, New York City.
Roemer, W. B., Utica.
Rosapepe, G., New York City.
Ryan, T. A., Albany.
Sadlier, J. E., Poughkeepsie.
Senmidt, F., New York City.
Scott, Peter, Brooklyn.
Skinner, S. W., Le Roy.
Smith, F. E., New York City.
Sobel, Jacob, New York City.
Southworth, C. W., Forestville.
Spengler, J. A., Geneva.
Spilsbury, E. A., Yonkers.
Spofford, H. M., Batavia.
Starr, M. A., New York City.
Stivers, M. A., Middletown.
Stover, Chas., Amsterdam.
Taylor, A. S., New York City.
Thomson, E. S., New York City.
Tilton, B. T., New York City.
Tompkins, B. V., New York City.
Tozier, L. L., Batavia.
Tucker, J. T., Waverly.
Van Doren, Wm., Mechanicsville.
Vincent, W. G., New York City.
von Tilling, J. H. M. A., Poughkeepsie.
Wachenheim, F. L., New York
Wakelee, E. H., Big Flats.
Waller, O. M., Brooklyn.
Waldo, Ralph, New York City.
Warbasse, J. P., New York City.
Westbrook, R. W., Brooklyn.
Westlake, C. L., Le Roy.
Whitehouse, H. H., New York City.
Wilcox, R. W., New York City.
Williams, G. H., Fishkill-on Hudson.
Woglom, W. H., Brooklyn. City.
Wolff, W. D., Rochester.
Wenkoop, H. J., Bath.
Young, J. Van D., New York City.
Ziegel, H. F. L., New York City

NORTH CAROLINA.

Atkins, G. J., China Grove.
Childs, J. A., Hickory.
Hooper, D. D., Sylva.
McAnally, C. B., Madison.
Moore, W. J., Asheboro.
Orr, C. C., Asheville.
Pfohl, S. F., Salem.
Shaffner, J. F., Jr., Winston-Salem.

NORTH DAKOTA.

Bell, David, Edinburg.
Bibble, G. B., La Moure.
Miller, G. H., Stanley.
Mowatt, W. B., Walhalla.

OHIO.

Aplin, C. F., Logan.
Baker, Chas., Palestine.
Bill, A. H., Cleveland.
Bird, F. E., Lore City.
Buckingham, J. M., Springfield.
Civins, A. L., Cleveland.
Clemson, G. W., Thornsville.
Cook, J. J., Cincinnati.
Crawford, L. A., Alliance.
Cruikshank, Alex., Salem.
Danford, E. F., Glouster.
Davis, G. W., Lockland.
Dew, F. R., Summerfield.
Elv, C. W., Cheshire.
Gillespie, Wm., Cincinnati.
Griess, W. R., Cincinnati.
Hanley, J. M., Chillicothe.
Harlan, Earl, Cincinnati.
Hartford, P. C., E. Palestine.
Humphreys, Frank, Mt. Victory.
Humphrey, Lee, Malta.
Johnston, C. E., E. Palestine.
Jordan, J. D., Portsmouth.
Judkins, W. L., Barnesville.
Kackley, J. A., Pleasant City.
Keller, B. T., Streetsboro.
Kline, O. E., Columbus.
McCowan, J. A., Dexter City.
May, Morris, Cincinnati.
MacGregor, Chas., Dayton.
McDade, W. G., E. Liverpool.
McNeill, R. C., Belle Center.
Murphy, D. M., Bethesda.
Mikolanda, Otto, Cleveland.
Okey, C. T., Columbus.
Phelps, E. M., New Bremen.
Riewel, D. V., Cleveland.
Rosamond, W. B., Milnersville.
Schroeder, J. H., Cincinnati.
Sheppard, G. W., Ravenna.
Stamm, John, Jacksonville.
Steward, G. W., Woodsfield.
Stonehurner, W. F., Moxahala.
Smith, J. W., Cleveland.
Stuart, C. C., Cleveland.
Teter, J. S., Harrietsville.
Tressel, J. K., Alliance.
Twitchell, H. E., Hamilton.
Vorhies, E. E., Cambridge.

OKLAHOMA.

Blickensderfer, C. H., Tecumseh.
Campbell, A. N., Lawton.
Cotton, L. W., Enid.
Mahr, J. C., Shawnee.
Maessner, T. C., Mountain Park.
Mitchell, Esther, Shawnee.
Pendergraft, W. C., Hollis.
Proffitt, J. H., Oklahoma City.
Rowland, T. D., Shawnee.
Skinner, D. S., Shawnee.
Wagner, H. A., Shawnee.
Weller, R. E., Pawnee.

OREGON.

Loeh, Sandford, Portland

PENNSYLVANIA.

Barach, J. H., Pittsburg.
Blair, J. D., Franklin.
Christle, M. H., Corry.
Dana, L. W., Marienville.
Day, E. W., Pittsburg.
Dennison, L. B., Sayre.
Guthrie, Donald, Wilkesbarre.
Hallett, W. D., Johnstown.
Harvey, O. F., Wilkesbarre.
Heller, E. A., Philadelphia.
Hemminger, R. J., Meversdale.
Hutchinson, J. P., Philadelphia.
Murray, A. H., Sayre.
Rothrock, H. A., West Chester.
Scholl, B. F., Philadelphia.
Sheetz, J. L., New Oxford.
Sickler, P. C., Wilkesbarre.
Snodgrass, D. G., Meadville
Stock, G. A., Danville.
Streckler, H. A., Philadelphia
Walker, J. K., Philadelphia.
Widder, G. H., Harrisburg
Woodburn, C. M., Towanda

RHODE ISLAND.

Allen, E. S., Providence.
Canfield, W. C., Bristol.
Capwell, R. P., Providence.
Duckworth, Milton, Carolina
Gleason, W. F., Providence.
Henry, J. E. F., Providence.
Legris, M. J. E., Arctic.
Matteson, G. A., Providence.
Milan, M. B., Providence.
Morphy, T. H., Pawtucket.
Ramsay, G. D., Newport.
Sprague, J. L., Providence.

SOUTH CAROLINA.

Peele, J. H., Cartersville.
Wingard, J. J., Lexington.

SOUTH DAKOTA.

Blezek, F. M., Tabor.
Faust, R. C., Salem.
Grove, E. H., Hetland.
Hodges, R. R., Lead.
Van Buren, A., Lead.

TENNESSEE.

Arnold, W. F., Nashville.
Barrett, D. N., Chattanooga.
Cunningham, J. M., Shelbyville.
Ensor, L. D. J., Cookeville.
Gresham, J. W., Jackson.
Harrington, R. A., Nashville.
McCullum, J. A., Tariffville.
Parker, J. R., Gallatin.
Slayden, W. W., Waverly.
Smith, R. E. L., Chattanooga.
Stapp, F. B., Chattanooga.
Steele, J. R., Chattanooga.
Waite, Netia M., Chattanooga.

TEXAS.

Alexander, R. J., Waco.
Allen, J. H., Justin.
Atkinson, D. T., Hillsboro.
Barnett, T. L., Midlothian.
Beaumont, G. B., Coleman.
Brown, H. E., Goldthwaite.
Burton, J. Q., Lockney.
Brockman, J. O., Breckenridge.
Cheatham, T. H., Hale.
Collins, W. B., Loveladv.
Conrad, J. M., Mexia.
Cravens, M. H., Arlington.
Creagan, M. V., Ft. Worth.
Cruse, J. B., Woodville.
Daniels, J. G., Gilmer.
Davis, T. P., Terrell.
Decherd, H. B., Dallas.
Doolittle, H. M., Dallas.
Dunlap, R. W., Ft. Worth.
Evans, G. M., Denton.
Fuller, F. A., Jacksonville.
Greves, R. W., Dallas.
Ghent, H. C., Belton.
Grigsby, C. M., Kaufman.
Hennen, J. C., Lone Oak.
Hines, B. M., Uvalde.
Howard, A. P., Ashland.
Johnson, J. F., Rusk.
Joyce, J. H., Buffalo.
Kenner, E. B., Galveston.
Keith, Tel, Stoehenville
Kirby, H. S., Silsbee.
Larkin, Percy, Athens.
Lockey, R. P., Nacogdoches.
Litten, Frank, Austin.
Longmire, R. B., Jacksonville
McCamly, W. A., Wharton.
McReynolds, A. D., Stamford
Moody, M. L., Greenville.
Morgan, J. B., Toledo.
Nall, W. R., Crawford.
Nelson, A. A., Nacogdoches
Newhaus, F. H., Houston.
Nicholson, R. E., Brenham.
Northcott, W. D., Longview
Oates, T. F., Mexia.
Oxford, L. G., Stoehenville.
Paine, W. H., Evan.
Phillips, B. A., Geese.
Pickett, N. J., Milford.
Rice, J. C., Singer
Richards, M. R., Ashland
Rochelle, R. E. L., Buffalo Springs.
Rogers, Chas., Rosewood
Selman, T. B., Silsbee.
Shelton, S. E., Waco.
Short, J. L., Houston.
Simpson, Friench, Galveston
Smith, N. J., Sinclair.
Sorine, J. V., San Angelo.
Stansberry, L. D., Longview.
Sterzing, H. F., Austin.
Tibbs, R. L., Itasca.
Tucker, F. R., Nacogdoches.
Turner, L. V., Palmerfield
West, W. B., Ft. Worth
Wilkes, F. B., Abbott

UTAH

Middleton, G. W., Cedar.

VERMONT.

Buchee, Marion L., White River Junction.

VIRGINIA.

Edwards, A. J., Bristol.
Gay, G. W., Jr., Richmond.
Harris, J. E., Berryville.
Rogers, W. B., Bristol.
Ross, George, Richmond.
Smith, J. W. R., Clinmont

WASHINGTON.

Clark, I. S., Sprague.
Booth, W. G., Seattle.
Howe, S. S., Lyden.

WEST VIRGINIA.

Shuttleworth, B. F., Clarksburg.

WISCONSIN.

Blair, J. C., Hazel Green.
Gates, A. J., Tigerton.
Goetsch, H. F., Abbotsford.
Gordon, J. B., Shawano.
Gotham, L. E., Sawyer.
Green, W. A., Wausau.
Greenberg, Harry, Milwaukee.
Masterson, J. A., Watertown.
Miller, H. C., Whitewater.
Noyes, G. K., Milwaukee.
Overbaugh, J. H., Hartland.
Pierce, E. D., Arcadia.
Picken, S. L., Wilson.
Plueger, J. H., Fairchild.
Schmitz, W. C., St. Nazianz
Seelye, N. L., Lake Geneva
Starr, F. W., Stanley.

Marriages

JOHN E. BELL, M.D., to Miss Annie C. Warfield, both of Casky, Ky., April 28.

WILLIAM J. DOYLE, M.D., to Miss Marguerite Brady, both of St. Louis, April 30.

GEORGE L. FAUCETT, M.D., to Miss Joe Mae Barrett, both of Gadsden, Ala., April 25.

J. S. MALLOY, M.D., Shinnston, W. Va., to Miss Rhoda Low of Clarksburg, W. Va., April 25.

WILLIAM J. HIGGINS, M.D., to Miss Eleanor Cecelia Harrigan, both of Sayre, Pa., April 17.

HENRY A. CALKINS, M.D., Leadville, Colo., to Miss May Whitmore of Boulder, Colo., April 28.

ARTHUR RICHMOND CRANDELL, M.D., to Miss Gertrude Scov Luce, both of Taunton, Mass., April 25.

CHARLES DENREIGH MARCHANT, M.D., Harmony, Va., to Mi Katherine Pyles, at Baltimore, April 30.

ANDREW V. JOVA, M.D., to Miss Ethel Odell, both of Nev burgh, N. Y., in New York City, April 25.

N. ATWOOD HANING, M.D., to Miss Josephine Marie Wate house, both of Wheeling, W. Va., April 26.

ARCHIE B. RINEHART, M.D., Cameron, W. Va., to Miss Wil L. Chenoweth, of Grafton, W. Va., April 28.

HARRY J. YORK, M.D., Warriorsmark, W. Va., to Mi Frances Hutchinson of Washington, D. C., April 25.

Deaths

Arthur Burley Hosmer, M.D. Chicago Medical College, 187 grandson of Dr. Isaac Harmon, who was the surgeon on du at old Fort Dearborn; a member of the American Medical A sociation, American Orthopedic Association, Association Military Surgeons of the United States, Illinois Association Military Surgeons; ex-president, Chicago Orthopedic Societ professor of orthopedic surgery in the Chicago Policlinic; o thopedic surgeon to St. Luke's Hospital; one of the mo prominent and well-known orthopedic surgeons of Chicag who devised several valuable forms of orthopedic appliance notably the flat-foot plate which is known by his name; fo merly captain and assistant surgeon of the First Infantr Ill. N. G., died at his home in Chicago, May 5, from pneum nia, after an illness of eight days, aged 62.

John A. Ritchey, M.D. Jefferson Medical College, Philad phia, 1871; a member of the American Medical Associatio the Medical Society of the State of Pennsylvania, the Venan County Medical Society and of the International Medical Co gres in 1890; a veteran of the Civil War; surgeon of sever of the railways centering in Oil City, Pa.; a member of t Oil City school board for 15 years, and of the health boa for several years; one of the best-known physicians of nort western Pennsylvania, died suddenly at his home in Oil Cit May 2, from cerebral hemorrhage, aged 65.

John Monroe Lawson, M.D. University of Maryland, Scho of Medicine, Baltimore, 1892; for a time house surgeon of t University of Maryland Hospital; a practitioner of Union, C.; assistant surgeon of the First South Carolina Infantr U. S. V., in the Spanish-American War, died suddenly in t Keeley Institute, Columbia, S. C., from pneumonia, after t illness of three days, aged 35.

Charles F. McElrath, M.D. Department of Medicine of t University of Pennsylvania, Philadelphia, 1867; twice may of El Reno, Okla.; formerly a member of the fifth Oklahon legislature, of the Oklahoma Board of Medical Examiners a clerk of the district court for the Enid district, died at h home in Sulphur, I. T., April 27, aged 59.

Frederick J. T. Fischer, M.D. Medical College of Ohio, Cincinnati, 1878; a member of the Illinois State Medical Society and the DuPage County Medical Society; a veteran of the Civil War; for three years clerk of DuPage County, died suddenly at his home in Elmhurst, Ill., April 27, from angina pectoris, aged 63.

William H. Barr, M.D. Medical College of Alabama, Mobile, 1875; a member of the American Medical Association and Mississippi Medical Association; physician to the Agricultural and Mechanical College of Mississippi, Starkville, for nearly 25 years, died at his home in that place, March 29, from acute gastritis.

William E. DeCourcy, M.D. Medical College of Ohio, Cincinnati, 1869, chief of the medical staff of St. Joseph's Hospital, Norwood, Cincinnati, and at one time a member of the board of education, died at his home in Cincinnati, May 1, from cerebral hemorrhage, after an illness of three days, aged 57.

David Wesley Bartine, M.D. Hahnemann Medical College, Philadelphia, 1871; for 40 years a teacher in the Central High School, Philadelphia; a veteran of the Civil War, died at his home in Fox Chase, Philadelphia, April 29, from Bright's disease, after an illness of two months, aged 68.

Elroy J. Covey, M.D. Faculty of Medicine of Queens University and Royal College of Physicians and Surgeons, Kingston, Ont., 1859, for many years a resident of Flint, Mich., died at the home of his daughter in Durand, Mich., April 23, after an invalidism of several years.

Sampson Pope, M.D. Jefferson Medical College, Philadelphia, 1858; a member of the legislature from Newberry County, S. C., in 1884; clerk of the senate in 1890-92; a Confederate veteran, died suddenly at his home in Newberry, S. C., from angina pectoris, April 22, aged 70.

Thomas Armonia, M.D. University of Naples, Italy, 1893, a member of Kings County (N. Y.) Medical Society, while despondent from ill-health, committed suicide at his home in Brooklyn, by cutting his throat and severing the arteries of both wrists, April 26, aged 41.

John William Yager, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; coroner of Tippecanoe County, Ind., in 1894; a member of the Tippecanoe County Medical Society, died from pernicious anemia at his home in Otterbein, Ind., April 29, aged 51.

A. S. Elwood, M.D. Cincinnati College of Medicine and Surgery, 1861, assistant surgeon of the Fortieth Iowa Infantry during the Civil War, and for many years a practitioner of Golden, Colo., died at his home in Denver, April 9, after a lingering illness, aged 79.

Joseph E. Birkhaeuser, M.D. University of Bonn, Germany, 1865; some-time surgeon for the Milwaukee Northern Road; for three and one-half years assistant surgeon in the Prussian army, died at his home in Milwaukee, April 23, aged 71.

Edgar W. McNichol, M.D. Jefferson Medical College, Philadelphia, 1879, for 36 years a resident of West Jonesport, Maine, died at his home in that city, May 2, from appendicitis, after an illness of two days, aged 60.

Gershom Wenger, M.D. Pennsylvania Medical College, Philadelphia, 1850, one of the oldest practitioners of Reading, Pa., died from senile debility, at his home in Reading, April 30, after an illness of a month, aged 81.

Ambrose N. Spurgeon, M.D. University of Louisville, Medical Department, 1873; coroner of Washington County, Ind., for several years, died at his home near Salem, Ind., April 21, after an illness of several weeks.

Samuel J. Crockett, M.D. Jefferson Medical College, Philadelphia, 1867, a member of the Oswego County (N. Y.) Medical Society and a veteran of the Civil War, died at his home in Sandy Creek, N. Y., April 21.

George Pringle, M.D. McGill University, Medical Department, Montreal, 1865, for many years a practitioner of Eastern Ontario, died at his home in Toronto, February 16, after a long period of invalidism, aged 72.

William H. Louderbeck, M.D. College of Physicians and Surgeons of Baltimore, 1885, of Reader, W. Va., died at the home of his father-in-law in Huntington, W. Va., April 27, from fever, aged 60.

Robert N. Rickey, M.D. Rush Medical College, Chicago, 1869, while despondent on account of ill-health, committed suicide by taking morphin, at his home in Gray's Lake, Ill., April 30, aged 55.

Howard R. Weber, M.D. University of Maryland School of Medicine, Baltimore, 1886, formerly of Highland, Ill., died at the Illinois Southern Hospital for the Insane, Anna, April 26.

Luther Bartlett Newton, M.D. Albany (N. Y.) Medical College, 1874, a member of the American Medical Association and one of the leading physicians of North Bennington, Vt., died at his home in that place, April 25, from pneumonia, after a short illness.

William Reindollar, M.D. University of Maryland School of Medicine, Baltimore, 1847, died at his home in Taneytown, Md., recently, from heart disease, aged 85.

John F. Mains, M.D. Bellevue Hospital Medical College, New York City, 1882, of White Oaks, N. M., died in that place April 23, from erysipelas, aged 48.

Francis D. Gilbert, M.D. Royal College of Surgeons, England, 1841, a retired practitioner of Irvington, Cal., died in San Francisco, May 31, 1905, aged 84.

Ebenezer J. Ingersoll, M.D. Starling Medical College, Columbus, Ohio, 1869, died suddenly from heart disease at his home in Columbus, May 2, aged 69.

John M. Evans, M.D. Starling Medical College, Columbus, Ohio, 1864, died at his home in Phoenix, Ariz., April 24, from nephritis, after a long illness.

Joseph R. Crofton, M.D. College of Physicians and Surgeons in the City of New York, 1899, died at his home in New London, Conn., January 29.

William A. G. Pierce, M.D. Hahnemann Medical College, Philadelphia, 1869, died at his home in Philadelphia, May 3, aged 66.

William G. Steele, M.D. Hahnemann Medical College, Philadelphia, 1886, died at his home in Philadelphia, April 30, aged 41.

Charles Morin, M.D. Laval University Medical Department, Quebec, 1878, of St. Agapit, Que., died July 8, 1905, aged 69.

C. W. Divens, M.D. Indiana Eclectic Medical College, Indianapolis, 1887, died at his home in Wilbur, Ind., April 30.

W. J. Farley, M.D. Willamette University, Medical Department, Salem, Ore., 1878, died at Dallas, Ore., April 24.

Charles Elliott Swan, M.D. Rush Medical College, Chicago, 1899, died at his home in Whiting, Ind., April 29.

William H. Weir, M.D. (Examination, Ohio), died at his home in Edinboro, Ohio, April 27, aged 68.

Book Notices

BODILY DEFORMITIES. The Nature, Causes, Variety and Treatment. A Series of Lectures. By E. J. Chance, F.R.C.S. Edited by J. Poland, F.R.C.S. Second Edition, in two volumes. Vol. I. Cloth. Pp. 315. Price, 6s. net. London: Smith, Elder & Co., 1905.

The appearance of a second edition of a medical work over 50 years after the publication of the first edition is in some respects a rather noteworthy event in medicine, but in the present instance it will probably be welcomed by orthopedic specialists and others. These lectures are certainly interesting reading and Chance's views, if not always altogether modern, were generally original and sensible considering the time of their announcement. One of the notions which he combated is not yet as extinct as it probably ought to be, namely, that of the specific effect of maternal impressions on the fetus. Even his 1905 edition calls it "still *sub judice*." If for nothing else, the book is valuable as the statement of the views of an old authority whom no specialist ought to ignore. The editor has reproduced the peculiar capitalization in some of the lectures; he has not attempted to change the characteristic style, but has simply omitted obsolete tables and notes and added such modern comments as seemed to him appropriate.

THE MODERN MATERIA MEDICA. The Source, Chemical and Physical Properties, Therapeutic Action, Dosage, Etc. Cloth. Pp. 306. Price, $1.50. New York: The Druggists' Circular, 1906.

With a view of affording the pharmacist some information concerning the many new remedies constantly brought to the attention of the medical profession the *Druggists' Circular* has published brief descriptions of these from time to time, which are now offered in book form. This list is arranged in alphabetic order and being a rather comprehensive one, will prove of interest to the pharmacist who is constantly called on to dispense medicines otherwise unknown to him; it will also interest the physician who attempts to keep informed of the new substances exploited to the medical profession. Unfortun-

ately, the book is, in the main, merely compiled from the literature furnished by the dealer and manufacturer: hence it does not give the information regarding certain remedies which one might expect from the introduction, which states that this publication was undertaken "with a view of affording a source of accurate and unbiased information."

State Boards of Registration

COMING EXAMINATIONS.

OREGON State Board of Medical Examiners, Portland, May 10-12. Secretary, Byron E. Miller, Portland.

KENTUCKY State Board of Health, Galt House, Louisville, begins May 15. Secretary, J. N. McCormack, Bowling Green.

INDIANA Board of Medical Registration and Examination, Indianapolis, May 22-24. Secretary, W. T. Gott, Indianapolis.

NEW YORK State Boards of Medical Examiners, Albany, May 22-25. Secretary, Charles F. Wheelock, Albany.

ILLINOIS State Board of Health, Coliseum Annex, Chicago, May 23-25. Secretary, J. A. Egan, Springfield.

NEBRASKA State Board of Health, State House, Lincoln, May 29-30. Secretary, George H. Brash, Beatrice.

Oklahoma March Report.—Dr. J. W. Baker, secretary of the Territorial Board of Medical Examiners, reports the written examination held at Guthrie, March 28, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 66.6 in each branch. The total number of candidates examined was 22, of whom 16 passed and 6 failed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
Rush Med. Coll.	(1882) 76.5; (1889)	73.2
Southern Med. Coll., Atlanta	(1891)	68.6
Medical School of Maine	(1899)	83.7
McGill University	(1902)	89.8
Albany Med. Coll.	(1900)	87.1
University of Iowa	(1891)	74.7
University of Louisville	(1903) 68.2; (1905)	70.4
Michigan College of Med. and Surg.	(1896)	76.1
Vanderbilt University	(1903) 76.2; (1905)	76.6
University of Buffalo	(1901)	82
Undergraduate*		
Ft. Worth University	(1900)	75
Hospital Coll. of Med., Louisville	(1890)	80

	FAILED.	
Meharry Med. Coll.	(1895)	67.4
University of Louisville	(1881)	59.5
Rush Med. Coll	(1874)	65.8
Marion-Sims Beaumont Med. Coll.	(1905)	64.7
Barnes Med. Coll.	(1901)	65
Grant University, Chattanooga, Tenn.	(1891)	20

* Has been engaged in practice for 21 years.

Rhode Island April Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, April 5, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of applicants examined was 18, of whom 8 passed and 10 failed, including one non-graduate. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
University of Naples, Italy	(1905)	75
Yale University	(1905)	80.1
College of P. and S., New York	(1902) 82.1; (1904)	82.6
Baltimore Med. Coll.	(1905)	81.8
Harvard University	(1904) 78.5,	90.1
Rush Med. Coll.	(1903)	80.6

	FAILED.	
Baltimore Med. Coll.	(1901)	65.9
College of P. & S., Boston	(1905) 68.1,	73.1
Kentucky School of Medicine	(1904)	62.6
Laval University	(1905) 55.6,	68.4
Tufts College Medical School	(1905)	71.6
University of Naples, Italy	(1890)	56.4
University of the South	(1905)	61.0
Non-graduate		55.4

Utah April Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written and oral examination held at Salt Lake City, April 2-3, 1906. The number of subjects examined in was 19; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 8, of whom 5 passed and 3 failed. The following colleges were represented:

College.	PASSED Year Grad.	Per Cent.
Northwestern University	(1904) 85; (1905)	86
College of P. and S., Chicago	(1900)	87
University of Colorado	(1905)	81
Chiba Med. Coll., Japan	(1903)	75

	FAILED.	
Baltimore University	(1902)	*50
University of Kansas	(1904)	74
St. Louis University	(1905)	73

* Took only 9 subjects.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending May 5, 1906.

Flagg, Chas. E. B., asst.-surgeon, reports arrival at San Francisco, Cal., with 14th Infantry, for temporary duty, from Vancouver Barracks, Washington.

Allen, John H., asst.-surgeon, left Fort Sill, Oklahoma Territory, en route to San Francisco, Cal., for temporary duty.

Connor, C. H., asst.-surgeon, reported for temporary duty at Army Medical Supply Depot, General Hospital, Presidio of San Francisco, Cal., from leave of absence.

Kieffer, Charles F., surgeon, ordered to accompany 11th Infantry from Fort D. A. Russell, Wyoming, to San Francisco, Cal., for temporary duty.

Noble, R. E., asst.-surgeon, ordered to proceed immediately from Fort Casey, Washington, to San Francisco, Cal., for temporary duty.

Devereux, J. R., asst.-surgeon, left Fort Logan, Colo., en route to San Francisco, Cal., for temporary duty.

Banister, John M., deputy surgeon-general, ordered to proceed from Fort Riley, Kans., to General Hospital, Washington Barracks, D. C., for observation and treatment.

Whitcomb, C. C., asst.-surgeon, granted ten days' leave of absence on completion of examination for advancement.

Flagg, Chas. E. B., asst.-surgeon, ordered to report in person to Lieut.-Col. Geo. H. Torney, deputy surgeon-general, president, examining board, at the Presidio of San Francisco, Cal., for examination to determine his fitness for promotion.

Page, Henry, asst.-surgeon, reported at Army General Hospital, Presidio of San Francisco, Cal., for temporary duty, from Philippines Division.

Noble, R. E., asst.-surgeon, reported for temporary duty, Medical Supply Officer, Golden Gate Park, San Francisco, Cal.

Reno, Wm. W., asst.-surgeon, left Fort Riley, Kans., on ten days' leave.

Boyer, P. L., asst.-surgeon, left Fort Sam Houston, Texas, with Second Squadron, 1st Cavalry, en route to San Francisco, Cal., for temporary duty.

Woodbury, Frank T., asst.-surgeon, reports his arrival at San Francisco, Cal., for temporary duty, returning to Philippine Division from leave.

Lewis, William F., asst.-surgeon, in addition to his other duties will take charge of the office of the chief surgeon, headquarters Department of the Lakes, Chicago, Ill.

Mason, George L., dental surgeon, ordered from Fort Morgan, Ala., to Fort McPherson, Ga., for duty.

Whinnery, Jean C., dental surgeon, left Fort Lawton, Washington, and arrived at Vancouver Barracks, Washington, for duty.

Ware, William H., dental surgeon, left Fort Wingate, N. M., on leave of absence for one month.

Hogan, David D., and Springwater, Samuel A., contract surgeons, recently returned from Philippines Division, have been assigned to temporary sanitary duty at San Francisco, Cal.

Tuttle, George B., and Porter, Elias H., contract surgeons, recently returned from Philippine service, have been assigned to temporary duty at the Presidio of San Francisco, Cal.

Cass, William E., contract surgeon, ordered from Vancouver Barracks, Wash., with the 14th Infantry to San Francisco, Cal.

Kuhn, Charles F., contract surgeon, ordered from Fort Lawton, Wash., with Companies B and D, 10th Infantry, to San Francisco, Cal.

Felts, Robert L., contract surgeon, granted leave of absence for one month, with permission to apply for extension of one month ten days.

Kovle, Fred T., contract surgeon, left Fort Bliss, Texas, for duty at Fort McDowell, Cal.

Brown, Wilmont E., contract surgeon, left Fort Walla Walla, Wash., and arrived at Fort Stevens, Oregon, for temporary duty.

Pinguard, Joseph, contract surgeon, left Fort Leavenworth, Kans., to accompany troops marching from Fort Mackenzie, Wyo., to Fort D. A. Russell, Wyo.

Hayes, Melville A., contract surgeon, returned from temporary duty at Fort Wright, Wash., to his proper station, Vancouver Barracks, Wash.

Griswold, W. Church, contract surgeon, left Fort Delaware, Del., on leave of absence.

Whinnery, Jean C., dental surgeon, ordered from Vancouver Barracks, Wash., to Fort Walla Walla, Wash., and Boise Barracks, Idaho, for dental work.

Bernheim, Julien R., dental surgeon, left Plattsburg Barracks, N. Y., for duty at Fort Wadsworth, N. Y.

Lauderdale, Clarence E., dental surgeon, left Fort Sam Houston, Texas, for Seattle, Wash., to sail thence on the *Sherman* for Philippine service.

Wilcox, F. Homer, dental surgeon, left Fort Strong, Mass., for duty at Fort Warren, Mass.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending May 5, 1906:

Lowndes, C. H. T., surgeon, detached from the *Texas* and ordered to the *Virginia*.

Evans, S. G., surgeon, detached from the Naval Recruiting Station, Denver, and ordered to the *Louisiana*.

Morris, L., surgeon, detached from the *Iowa* and ordered home to wait orders.

Johnson, M. K., surgeon, detached from the *Maine* and ordered to the *Iowa*.

Williams, R. B., P. A. surgeon, detached from the *West Virginia* and ordered to the *Maine*.
Dykes, J. R., asst.-surgeon, ordered to the Navy Yard, New York.
Dean, F. W. S., asst.-surgeon, ordered to the Naval Recruiting Station, Denver.
Stalnaker, P. R., asst.-surgeon, ordered to the *West Virginia*.
Mears, J. B., asst.-surgeon, ordered to the *Minneapolis*.
Reeves, O. S. K., asst.-surgeon, detached from the *Minneapolis*, and ordered home to wait orders.
White, E. C., asst.-surgeon, ordered to the *Virginia*.
Haynes, J. P., asst.-surgeon, appointed asst.-surgeon, with rank of lieutenant, junior grade, from April 16, 1906.
Steadman, W. G., Jr., acting asst.-surgeon, appointed acting asst.-surgeon from April 27, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 2, 1906:

Kalloch, P. C., surgeon, granted leave of absence for one day, April 30, 1906.
Carrington, P. M., surgeon, granted leave of absence for three days, from April 30, 1906, under Paragraph 189 of the Service Regulations.
Nydegger, J. A., P. A. surgeon, leave of absence granted P. A. Surgeon Nydegger for seven days, from April 23, 1906, amended to read for five days only.
Lumsden, L. L., P. A. surgeon, granted leave of absence for two months, from June 1, 1906.
Stansfield, H. A., P. A. surgeon, granted leave of absence for five days under Paragraph 191 of the Regulations.
Stansfield, H. A., P. A. surgeon, granted leave of absence for fourteen days, from April 30, 1906.
Burkhalter, J. T., P. A. surgeon, granted extension of leave of absence for four days, from May 3.
Foster, A. D., asst.-surgeon, granted leave of absence for one month, from April 1, 1906, on account of sickness.
Robertson, H. McG., asst.-surgeon, granted leave of absence for one month and twenty-one days, from May 14, 1906.
Mason, W. C., acting assistant surgeon, granted leave of absence for three days, from April 30, 1906.
Stearns, H. H., acting asst.-surgeon, granted leave of absence for five days under the provisions of Paragraph 210 of the Service Regulations.
Tuttle, Jay, acting asst.-surgeon, granted leave of absence for thirty days, from May 1, 1906.
Ryder, L. W., pharmacist, granted leave of absence for two days, from April 30, 1906.
Bell, J. M., pharmacist, granted leave of absence for thirty days, from May 18, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 4, 1906.

SMALLPOX—UNITED STATES.

California: Los Angeles, April 14-21, 8 cases; Ukiah, March 26, 1 case, in State Insane Asylum.
Connecticut: Putnam, March 1-23, 30 cases.
Delaware: Wilmington, April 21-28, 1 case.
Florida: General, April 21-28, 8 cases; Jacksonville, April 14-21, 2 cases.
Illinois: Chicago, April 21-28, 1 case.
Missouri: St. Louis, April 14-28, 5 cases.
New York: New York, April 21-28, 2 cases, 1 death.
Maryland: Baltimore, April 21-28, 3 cases.
Ohio: Cincinnati, April 20-27, 2 cases.
Tennessee: Knoxville, April 20-28, 1 case, in county; Memphis, April 14-28, 27 cases.
Washington: General, March 1-31, 11 cases; Seattle, April 14-21, 1 case.
Wisconsin: Appleton, April 1-28, 1 case; La Crosse, April 14-28, 3 cases; Milwaukee, 8 cases.

SMALLPOX—INSULAR.

Hawaii: Honolulu, April 7-14, 1 case, 1 death.

SMALLPOX—FOREIGN.

Africa: Cape Town, March 17-24, 8 cases.
Argentina: Buenos Ayres, Jan. 1-31, 66 cases.
Canada: Toronto, April 14-21, 3 cases.
Chile: Iquique, March 24-31, 3 cases, 3 deaths.
China: Hongkong, March 10-17, 9 cases, 7 deaths; Nanking, March 24, 1 case.
France: Paris, March 31-April 7, 2 cases, 1 death.
Gibraltar: April 8-15, 1 case, 1 death.
Great Britain: Bristol, April 7-14, 2 cases; Glasgow, April 13-20, 1 case.
Greece: Athens, March 25-April 7, 4 deaths.
India: Bombay, March 27-April 3, 16 deaths; Calcutta, March 18-25, 276 cases; Karachi, March 25-April 1, 57 cases, 32 deaths; Madras, March 24-30, 33 cases; Rangoon, March 19-26, 66 deaths.

CHOLERA—FOREIGN.

India: Bombay, March 27-April 3, 13 deaths; Calcutta, March 17-24, 37 cases.

PLAGUE—INSULAR.

Hawaii: Honolulu, April 25-30, 3 cases.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, March 18-25, 7 cases, 1 death.
China: Hongkong, March 10-17, 7 cases, 7 deaths.
India: General, March 10-17, 13,325 cases, 10,782 deaths; Bombay, March 27-April 3, 821 deaths; Calcutta, March 17-24, 176 deaths; Karachi, March 31-April 1, 96 cases, 69 deaths; Rangoon, March 19-26, 99 deaths.

Society Proceedings

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

American Climatological Assn., Atlantic City, N. J., May 12-14.
American Assn. of Physicians, Washington, D. C., May 15-16.
Missouri State Medical Association, Jefferson City, May 15-17.
Illinois State Medical Society, Springfield, May 15-17. (Note change of time back to date originally planned.)
Iowa State Medical Society, Des Moines, May 16-17.
North Dakota State Medical Association, Fargo, May 16-17.
New Hampshire Medical Society, Concord, May 17-18.
Amer. Assn. of Path. and Bacteriologists, Baltimore, May 18-19.
American Gynecological Society, Hot Springs, Va., May 22.
South Dakota State Medical Association, Watertown, May 22-24.
Connecticut State Medical Society, New Haven, May 23-24.
Indiana State Medical Association, Winona Lake, May 23-25.
Michigan State Medical Society, Jackson, May 23-25.
Med. Soc. of State of North Carolina, Charlotte, May 29-31.
Rhode Island Medical Society, Providence, May 31.
American Dermatological Asso., Cleveland, May 30-June 1.
American Pediatric Society, Atlantic City, May 30-June 1.
American Surgical Association, Cleveland, May 30-June 1.
American Laryngological Assn., Niagara Falls, May 31June 2.
American Assn. of Genito-Urinary Surgeons, New York, June 1-2
American Academy of Medicine, Boston, June 2-4.
Amer. Assn. of Life Insurance Exam. Surgeon, Boston, June 4.
American Gastro-Enterological Assn., Boston, June 4.
American Urological Assn., Boston, June 4-5.
American Proctologic Society, Boston, June 5-6.
American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-13.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springe, June 20-22.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The 108th Annual Meeting, held at Baltimore, April 24-26, 1906.

(*Continued from page 1394.*)

Occult Hemorrhages in Diagnosis of Gastric Ulcer and Carcinoma.

DRS. J. FRIEDENWALD and L. J. ROSENTHAL have in many instances been able to rely on the constant absence of this sign as sufficient evidence to exclude the presence of ulcer and cancer of the stomach, and favoring the diagnosis of gastritis or some gastric neuroses. Thirty-five cases of ulcer of the stomach were examined and occult blood was found in the stools in 26 cases; not every examination, however, but usually some days before the patient had entered on the ulcer cure, which usually caused the disappearance of the blood. If, under this treatment, the blood does not disappear, the authors consider an operation indicated. Twenty-three cases of cancer of the stomach were also examined and in only a few instances was the sign found absent. It was always found present in 19 cases, and was noted occasionally in 4.

New Physical Sign of Aneurism of Aortic Arch.

DR. GORDON WILSON stated that on listening at the extreme right of the first interspace the voice sound is transmitted normally. Moving the stethoscope toward the sternal border there is reached a point at least half an inch from the sternal border, where the transmitted voice sounds suddenly change, becoming more distinct, higher pitch, and having a slightly nasal quality. In aneurism this area extends some 5 cm. on either side of the mid-sternal line in the first interspace. This sign was verified by the study of normal chests and of three cases of aneurism of the aorta arch and one case of aneurismal dilatation accompanying aortic insufficiency. In none of these cases was a tumor or pulsation visible.

Assault on Tropical Disease.

DR. LEWELLYS F. BARKER said that tropical pathology is rapidly becoming recognized as a special field in medicine, a field worthy of cultivation by itself for its own sake. Perhaps history does not afford a more striking impulse to medical research than that excited in recent times by the struggle of the nations for the control of the tropics. A great impetus has been given to American interest by our new relations to the West Indies and the Philippines and it has been greatly augmented by the construction of the Panama canal. The United States is far behind other countries in providing special institutes, hospitals and course of instruction in tropical diseases, but in Manila a biologic laboratory has been established with Dr. Richard P. Strong as director, which guarantees the thorough investigation of tropical pathology there. Germany has at Hamburg the Institute for Naval and Tropical Hygiene. England has its London School of Tropical Medicine and its Liverpool School and Special

Laboratory for Tropical Medicine and Parasitology. In France there is the Institute of Colonial Medicine. Portugal has a school of tropical medicine. Expeditions and commissions for the study of tropical diseases have been most fruitful.

A New Pyriform Organism.

DR. LEONARD K. HIRSHBERG reports the case of a man, aged 36, with elevated temperature, lasting eight weeks, which never rose above 102, with meningeal symptoms, photophobia, tremors, irritability, subsultus tendinum and joint involvement. The Widal reaction was constantly absent; leucocytosis, 14,000. Cultures taken from his blood revealed a lemon-yellow diplobacillus, pathogenic for guinea-pigs and rabbits, negative to Gram's stain, actively mobile, producing no indol, not liquefying gelatin until the seventh day and producing no gas or lactose, saccharin or glucose media, milk, manite litmus are acidified. The organism is killed at the exposure of 60 C. for ten minutes. At the suggestion of Prof. William H. Welch the organism was called *Bacillus pyriformis*.

Treatment of Prolapsed Ovaries.

DR. WILLIAM S. GARDNER recommended an operation which consists in shortening the elongated ovarian ligament by a couple of fine silk stitches. The first stitch takes a light but firm hold in the uterus near the lower border of the ovarian ligament; it is then continued through a portion of the ligament and is inserted firmly into the ligament near the ovary. The second stitch is placed in the same way, but near the upper border of the ligament. When these stitches are tied, the ovary is brought up close to the uterus, but still retains a limited mobility independent of the uterus and a complete mobility with the uterus. Retrodisplacement, if present, should be operated on at the same time.

General and Metastatic Gonococcus Infections.

DR. R. I. COLE said that it is not sufficiently realized that there are other primary infections besides these of the genital tract, and that these are of frequent occurrence, though often not recognized as such, rectal, for instance. In this rectal form there is danger of chronicity and stricture, stricture here probably being more frequent from gonorrhea than from syphilis. Gonorrheal stomatitis is also not rare. Wound infection also occurs and infection of the umbilical cord is known. The gonococci also enter the blood and set up septicemia and distant infections, the proof being first furnished by Thayer and Blumer in 1896, in a case of endocarditis. A number of cultures of the organism have been made from the blood. Cole had a case of septicemia which got well in which the organism was found in the blood, but there were no local lesions, and it may be that these cases are more frequent than is suspected. Gonorrheal infection is one of the causes of puerperal fever. The most frequent extragenital metastatic infections are those of the joints, from which the organisms have been obtained in a large number. It is not true that this joint involvement follows the chronic urethritis oftener than the acute. Cole's observations showed that the implication of the joints was nearly always a polyarthritis as often as in rheumatism. In one case there was tenderness and swelling over the thyroid and in one there was involvement of the nervous system. It has only recently been ascertained that gonorrheal peritonitis occurs in the male as well as the female. He saw one case of bilateral femoral phlebitis and one of plastic iritis.

(To be continued.)

THE PHYSICIANS' CLUB OF CHICAGO.

DR. C. S. BACON in the Chair.

The Relation of the Physician to Compulsory Sickness and Invalidity Insurance.

The Chairman said that physicians are interested in compulsory sickness and invalidity insurance, in that it has a broad bearing on the welfare of the state. It also affects the medical profession. Sickness and invalidity insurance require the co-operation of physicians; physicians must be employed, and if some system of insurance which requires the employment of physicians should come up, it would seem as if this kind of insurance would also meet with the approval of the present indemnity companies and others, whose efforts would be to secure a low or unfair rate of fees for physicians, so that physicians should have an intense interest in this subject.

PROF. C. R. HENDERSON of the University of Chicago discussed two aspects of workingmen's insurance. Intelligent men in America have not given insurance the thought and consideration it has received on the other side of the Atlantic. Countries like Denmark and Scandinavia are in advance of the United States in taking social care of the working classes. Insurance for the workingman is now being placed on a purely business basis; it has been taken out of its philanthropic and charitable sphere. Men in large cities are an occupational asset; their health, life and longevity are matters of national economic importance. The causes of diminution of industrial efficiency should be found out and measured, and in considering these the help of the medical profession is needed. It is an indispensable element in the progress of workingmen's insurance in America. It is necessary to get scientific and precise knowledge as to the facts in regard to the causes of sickness, especially of occupational diseases, which interfere with the public health, and also as to the causes of accidents. The methods of taking care of the health and wealth-producing power of the people depend on accurate knowledge.

He thinks that with medical supervision of factory inspection and legal arrangements made for it, many things might be found out in regard to the causes of accidents and sickness which are now deliberately concealed by business men because of the iniquities, because of the antiquated liability law which is cursing the nation. For the economic progress of the human race it is necessary that every cause of disease that is inherent in occupation or in the habits of the working people should be known. This information can be furnished by physicians. Sensible legislation can not be secured without it; and protective legislative measures must be obtained on strict, precise and comprehensive knowledge of the causes of both sickness and accident in connection with disease, and if actuaries can not furnish such facts without there being unfair litigation, then the manufacturers must be protected. There should exist a code of protection, and in the formation of it against disease and accident in connection with occupations, the medical profession should be in a commanding position and be the administrative authority.

What are some of the protective measures? If one will go through a German work shop he will see a red mark or shack painted red, which means that it is a dangerous place. The workingman is protected from accident, and if he is injured it will mean a financial loss to the company, because that workingman is an economic asset of the nation, and the protection of him is the protection of the public property and public welfare.

Speaking of the prevention of tuberculosis, he said that this disease is one of the most serious causes of invalidity. This disease is largely connected with occupation.

As to the policy of insurance, it means that every workingman is exposed to calamities which may befall anyone. As a matter of fact, they fall on a certain average number of persons varying with the different occupations. All of them are causes of economic loss and social distress, sickness, loss of time from sickness, loss of wages from accident, loss of income from invalidity, sometimes occurring before old age, and always with it. In Germany a part of the risk of sickness belongs to the community. For instance, one-third of the sickness from tuberculosis may be said to belong to the community, which can be prevented by that community in great part. Many causes of sickness can be partly prevented by the community. The workingman carries two-thirds of the premium and his employer pays the other third. But does the employer pay it? Primarily, he does, but a large part of it comes back on the working people, and often the workingmen have to carry it. In the case of invalidism, in old age, the workingmen pay half the premiums; the employers pay the other half. This comes to the point where the German empire pays $12.50 a year to old people or invalids who receive pensions. It is not claimed that such a system can be

introduced in the United States, but the principle is being introduced. In 1897, after having tried to amend, repair and tinker the common liability principle, Germany finally passed a law that in every case the employer should pay a certain indemnity for a certain time, or in case of death a certain lump sum for persons injured in his employ. This threw the burden on the employer, and the natural result was that employers banded together to form mutual insurance companies. Already railroad insurance companies have been organized in America.

If workingmen's insurance is established on a wide scale in America, the medical profession will at certain points have to bear their share of the public sacrifice. This problem ought not to go before the medical profession in an unintelligent way. It should be met frankly and candidly by the state, and the evils that have crept into the German administration should be guarded against in advance. Medical men in Germany are not properly paid for their services. There is general complaint there, and physicians are trying to remedy it. Under a proper system of insurance charity cases will be eliminated. They will be reduced in number. There is no profession which is so heavily burdened with charity cases as is the medical profession. There is no set of men giving away so much of their services to the poor as the doctors. Something will have to be done to dispose of charity cases which do not belong to insurance. Paupers can not be insured. They have to be cared for by charity or institutional relief. The only advantage of the insurance system among people to-day who ask for relief, who need the insurance system, is that they are able to pay a reasonable sum for it, because when they get sick they have nothing with which to buy the necessities of life; and they are earning nothing. So the doctor or the undertaker is the last man to get anything out of them. If there can be eliminated from the working class, all except the capable, those who have regular wages, and who can lay up something in times of accidents, invalidism, and old age, the medical profession is relieved of an actual burden and passes it over to the charity institutions or to insurance organizations, where it belongs. The medical profession derives most of its income from the well-to-do classes. In Germany physicians care for those who are willing and able to pay. They can buy their insurance from the company; they do not need sympathy or attention. This question concerns people who are earning for a family $350 a year, or less than $450 a year, up to $800 or $900.

It is a state problem to see that a physician gets his pay for services rendered, and whether he does or not, will depend on the influence he has with the committees or with the legislature. Physicians can not do their work well unless they are paid for it. The interests of the medical profession should be protected at every point. It will put the medical profession, so far as their practice among the working classes is concerned, in a more dignified, useful position than any method that has ever been tried where the social insurance principle has not been accepted. In social insurance, as applied to the industrial group, the medical profession have before them a new era. They will get paid for preventive medicine, and not merely for curing and mending. Physicians take a great step in advance when they are able to increase industrial longevity and industrial efficiency.

In closing, Professor Henderson solicited information from physicians in regard to the causes of sickness and accidents, saying that such information as was furnished him would be brought before the commission.

DR. FRANK BILLINGS spoke on the principles of administration of the law in Germany. He has talked with Germans in this country as to the benefit of insurance to the community as an economic principle, and also with reference to the systematic care of the sick without pauperizing them. It has been an unusual burden for the medical profession, particularly to those who have small incomes, in Germany, and this is due to some clause in the administration of the law in Germany which possibly would be overcome in America. The pauperizing effect in northwestern Germany among the medical profession was so great two years ago that at Leipsic the medical profession bound themselves not to visit any of these people. This was followed by practically the formation of a union among the physicians of Germany elsewhere, with the result that they petitioned the Reichstag to modify the law on account of receiving such small fees. The fees in some communities in Germany only amounted to 2½ cents.

The law, as administered in England, is better in the rural communities. The statement has been made that in England practitioners in the country receive as little as 2½ pence for visits. Not only has this a pauperizing effect, but it results in superficial treatment of the sick. A physician who receives no compensation under a contract which he is obliged to make gives superficial attention to his patient. Under the contract system the insured had no choice as to the doctor he would have, and this creates a competition for influence to get positions. In all probability many of these evils in the German law will be removed from the establishment of this insurance in America.

Insurance is bound to come. It does not make any difference what effect it will have on the medical profession, it is coming, and members of the medical profession should be willing to enter into an earnest investigation of the subject, and attempt by their knowledge and discussion to so modify the principles of its establishment that it will work as little hardship as possible, and at the same time be efficient in its performance. In many of the large corporations, like steel mills, iron mines, copper mines, lumber districts, planing mills, the rural contract systems exist. Reference was made to a practitioner who derives most of his income from attending employés at planing mills. This large corporation paid the physician 50 cents for each employé per month, but another physician secured the work by contracting to do it at one-half the sum, namely, 25 cents. That principle would be in a sense accentuated in this country, unless the principle can be modified in its working. In the country it will amount to something more than in the city. The individual or employé who has an income of $400 a year can not very well afford to pay a doctor very much. But the individual in the city, who earns more than the man in the country, who earns say $800 or $1,000, is able to pay his attending physician fair fees. The doctor who is receiving compensation for attendance on people will be more interested in keeping them well than in seeing them sick, because he will earn his money easier that way. And while it may work a hardship on the whole medical profession at the beginning, more particularly on rural than on city physicians, still the system of insurance will have an influence in preventing illnesses which every physician works for, and the wholesome effect of it on the community will be great.

DR. ARNOLD C. KLEBS said that he has talked to railroad men on the subject of sick-benefit insurance, and some interesting points were brought out. He said to some of them frankly, that their first idea in getting up a sick-benefit scheme was to advertise themselves as charitable men; then they soon realized that it paid to do it, because, first of all, by preventing accidents they saved sick benefits. They have determined scientifically what kind of accidents will happen in certain departments of the railroad, and they have to pay benefits to those who are injured. This has induced railroads to introduce safety appliances; the railroads save money by these appliances, which they can utilize for other purposes, so that the financial gain by this method of prevention of accidents is apparent.

Among the diseases that attack the laboring man, tuberculosis is the most important. The German sickness insurance law was passed in 1883; after that in 1889 the invalidity insurance law was passed. Sickness and invalidity insurance had to face a financial problem, in that it was found that one-half and more of those insured were tubercular. Tuberculosis is a most tremendous tax, not because it kills people, but because it disables them for such a long time. Invalidity insurance was recognized and utilized for the purpose of building sanatoria. It was proven by the first sanatoria established by Brehmer and Dettweiler that with thorough hygienic management of these cases, the insured could be brought back to earning capacity after a certain length of time. After an average treatment of three months these people were restored to an

earning capacity in fully 80 per cent. of the cases. But that means not only the restitution of men to their earning capacity, but that every one of these men has been educated in the principles of hygiene, and goes out as an apostle of this teaching. Prevention is the real and greatest task of the physician. He may prescribe medicines and he may operate, but where he really does good is in the matter of prevention. That is the highest task of medical men, and a scheme which will put the great mass of people, the workingmen, on a basis of self-defense against disease, making them able to pay by deducting small amounts from their wages in time of health, will remunerate the medical men for preventive work.

DR. FERNAND HENROTIN said that compulsory sickness and invalidity insurance is bound to come. It is a part of the development of our republican form of government. The government depends on its unit of citizens for the management of it. Each man has to do his share or the republic will not stand. Contract work is allied very closely to the work of the physician and to the subject of sickness insurance. There is no question but that a large number of sick people will have to be attended at low prices, and that means in one way or another a contract system. Physicians will apply themselves to the problem under discussion and eventually, he believes, find methods by which the contract system and the paying of low fees in caring for the sick and management of tuberculous people and all that class, can be brought about without either pauperizing the people or without lowering their estimation of physicians who attend them for this or that fee, or for a song. The solution of the contract system will eventually take some shape, but he is not prepared to say what it will be. He believes the profession will stand divided that it is wrong for a physician to do medical work on the contract plan. But as sick people must have medical attendance, he thinks it must take some such shape as this, that certain communities will be divided into certain districts; that contracts will be entered into between a city or a county, but not with any one physician or individual, by which certain districts will be taken care of by a group of doctors, who will look after the sanitation of the district, who will look after the preventive part of medicine, who will attend the sick, who will divide the work properly, who will compare notes, keep books, and decide upon the proper way to do things without pauperizing the patients or without pauperizing or humiliating doctors. An individual who earns $100 a year ought to pay his physician more than the man who earns $300. Each man should pay what he can, and each district or each group should have ratios in proportion to what they earn. The medical profession can not commit itself to any contract by which it is going to attend sick people for the lowest possible price. There is a certain remuneration in proportion to the ability of the individuals to pay, which must be paid; that this ratio must always exist; that we never give a lower price except for cause, and that it must be distinctly shown that in helping sick people we must do nothing either to pauperize them or degrade ourselves.

DR. M. L. HARRIS said that for several years past he has been physician of large corporations, and during this time he has had under his personal supervision thousands of accident cases, and has had a hand in distributing millions of dollars of indemnity. This money many times was not distributed in a just manner, for the reason that many of those injured did not receive what they were justly entitled to. On the other hand, a much larger number received many times the amount they were entitled to. The reasons for this are many, principally the law as it now exists, and largely because of dishonest lawyers and dishonest, ignorant doctors. He said he could mention a number of instances where people have gotten on cars for the express purpose of receiving an injury; had taken with them witnesses to see the accident, had people stationed at the corner to see the accident, and had a doctor waiting around the corner to take care of them as soon as the accident occurred, and then had the patients hustled to a particular doctor as though they were injured.

He did not agree with the statement that these companies started an indemnity plan as a matter of charity. Corporations are not known as eleemosynary institutions. They started these indemnity schemes as a matter of economy. There is little incentive for corporations to carry on these indemnity schemes under the present law. He has attempted to look after the indemnity plans of corporations, and while they can be carried out honestly, so that they will be an economic investment, so many times they are carried out dishonestly that there is little incentive to do it. An employé receives an injury; the company looks after him; they pay him his indemnity according to contract, and when they have done that and have fulfilled their part of the contract, the individual turns right around and sues the company for large damages, and many times he gets it. The company says: What is the use of us paying this man his indemnity to give him money to turn right around us and fight us, and win a large sum of money? The man may have signed a contract that he will accept the indemnity paid him by the company in lieu of damages, but the courts say that the contract is of no value, because the man has no right to sign away his rights in that way; that what the company has paid him in the way of indemnity he was entitled to. These are most important obstacles in the present law. Before companies will continue under the present law there must be some other law enacted of relieving these companies from further liability after they have once fulfilled their obligations of indemnity under contract. There must be some just way of arriving at a just estimate of what the damages are.

Physicians go into court; they testify before the jury; the average lawyer does not want a man to testify who knows anything about the case. He wants a medical man who is dishonest, and who will testify to what he wants him to. He wants a medical man who is ignorant, who does not know, and the man who is ignorant and does not know what he is talking about nearly always makes the best impression on the jury. He will testify that he believes anything to be so, because he is ignorant of anything himself. That is a sad state of affairs for the medical profession, but it is the truth. Until some way can be devised to determine the amount of liability and the extent of the damage done, companies will fight for their existence. They are not going to favor indemnity. Companies are anxious and willing to pay a just indemnity if it can be arrived at justly. If we can devise some insurance law which will do that, companies will gladly welcome it. He has studied the German laws, and while they have excellent and valuable points, he does not think they can be applied to American institutions at present.

DR. WILLIAM H. WILDER asked whether any consideration is to be taken of the relation that the different dispensaries in large cities bear to the insurance problem. The dispensary evil in large cities is an immense burden. It is not being handled in the broadest kind of way, as there is so much jealousy and rivalry on the part of physicians as to who shall do this work for nothing. Sometimes an almost unseemly scramble takes place for different positions on dispensary staffs. In many of the dispensaries in Chicago hundreds of patients are treated annually who can afford to pay something, but who are treated for nothing. The first step that should be taken is, whenever a patient comes to a medical clinic and asks for something for nothing, some means should be devised by which we may know what we are doing. In the New York Eye and Ear Infirmary they have an officer in attendance every day, who notices everyone who comes in. Patients are required to make a deposit of a quarter for a card of admission, and the revenue from this source alone amounts to $10,000 a year. This officer of charity notices if there is any individual who seems to be an impostor. He takes his address, and he is looked up. This is not done in Chicago. The medical profession ought to co-operate with the bureau of charities in this matter.

PROFESSOR HENDERSON, in closing the discussion, said with reference to the suggestion made by Dr. Wilder, that some of the people he described as seeking charity when they are able to pay ought to be passed over for perjury to the criminal arm of the law. There is, however, a charity aspect to the dispensary, and he hopes the medical profession will arrange with the bureau of charities to have certain cases investigated, so that those who can afford to pay should do so.

MEDICAL ASSOCIATION OF GEORGIA.

Fifty-seventh Annual Meeting, held at Augusta, April 18-20, 1906.

The President, Dr. W. Z. Holliday, in the Chair.

(*Continued from page 1395.*)

Some Remarks on Chronic Conditions.

Dr. H. McHatton, Macon, said that with the present relative positions so commonly held and the lack of correlation between the various medical attendants, a patient is in extreme danger. To illustrate, a patient with an active secondary syphilis, which had attacked two organs, consulted the most accessible authority on diseases of each organ. Each authority made a diagnosis of syphilis, and put the patient on the mixed treatment. As each of them had every reason to believe that he was the only attendant, and the patient was very good about taking his medicine, the result was most unpleasant. He stated that when a patient who is not directly under the observation of a general practitioner, whose general condition can not be fully and absolutely accounted for by the local lesion which he is treating, comes to the specialist, it is as much his duty to refer the patient to a competent general practitioner as it is for the general practitioner to refer him to the specialist, and even more so, because a life is often lost that otherwise can be saved. The innocent patient has every reason to believe that he is getting the full benefit that can be derived from medical science when he is not. Many errors in diagnosis are not due to lack of knowledge, but to incomplete examinations and insufficient time of observation of the case. One should not hesitate to tell a patient that he does not know what the disease is, and that it may take time and repeated examinations to make an accurate diagnosis.

Dementia Praecox.

Dr. J. W. Morley, Milledgeville, said that dementia præcox is a chronic progressive psychosis with a peculiar tendency toward dementia, and having its determining features represented in a peculiar chain of symptoms of excitement, delirium, stupor, mannerisms, negativism, verbigerations, stereotopy and cerea-flexibilitas.

Anterior Poliomyelitis.

Dr. J. Cheston King, Atlanta, said that an opinion can not be given as regards recovery from this condition until paralysis takes place. At the expiration of two weeks the muscles that react to faradism will recover, and those that do not react will either be permanently paralyzed or partially so. In the latter case, as long as the retention of reaction to the constant current remains, there is some hope that the faradic reaction may return and with it the power of the muscles.

At the onset of the attack, the patient should be kept quiet in bed and should lie on the face or one side, and hot applications should be made to the spine. He said that the destroyed cells can not be replaced, but recovery can be facilitated by maintaining the nutrition of the paralyzed parts. When the attack is due to cold, the limb should be kept warm from the first; diaphoretics, such as liquor ammoniæ acetatis and citrate of potash, should be given. He also recommends the use of ergot and belladonna. After the disease has assumed the stationary condition, cod-liver oil and tonics are used. Local treatment should not be used until at least a month has elapsed. The limb should then be bathed in hot salt water and rubbed with a rough towel, and especial care should be taken to keep the limb warm with thick stockings. The muscles should also be rubbed systematically every night and morning. The constant current should be used, both because it dilates the blood vessels of the part and because the muscles will contract under it and not under faradism.

Paramyoclonus Multiplex.

Dr. E. Bates Bloch, Atlanta, reported a case of this affection. The case was interesting, not only on account of the rarity of the affection, but because of the rapidity of the muscular contractions, which far exceeds those met with in any other case the author has ever heard of, in that the greatest number of muscular contractions reported heretofore has been 180. While many writers prefer to class this disease with hysteria, it seems very doubtful if this is the proper view to take of it, in that the motions are such as can not be imitated by any effort of the will, and also that not only individual muscles may be seized with these shock-like contractions, but even portions of muscles may be so affected, and the violent muscular contractions may take place even without locomotor effect. The disease is very commonly associated with epilepsy.

Recent Studies in Rabies.

Dr. James N. Brawner, Atlanta, called attention to the discovery of certain bodies in the central nervous system of animals dead of rabies by Negri, which Negri believes to be the specific germ of this disease. The value of these Negri bodies as a means of rapid diagnosis is now generally recognized. When the brain of an animal is examined and Negri bodies are found, the evidence is considered positive and a diagnosis of rabies is made. At the Georgia Pasteur Institute, within the last eighteen months, the author has demonstrated Negri bodies in forty-two dogs and three cats, and in every instance the rabbits inoculated died of typical rabies. In three cases where the inoculation test resulted positively, no bodies were found, though only the hippocampus major was examined and the animals were killed in the first stages of the disease. In fifteen dogs and two cats proved not to be rabid, no such structures could be demonstrated.

Proper Management of Chronic Suppurative Inflammation of the Middle Ear.

Dr. Dunbar Roy, Atlanta, said there are two kinds of chronic discharges: (1) A catarrhal, mucoid secretion, free from odor, except when the ear has not been cleansed for some time, coming from the middle ear through a perforation in the drum, associated with the same kind of catarrhal secretion in the nose and naso-pharynx. This condition can nearly always be cured by local therapeutic measures directed to both the ear and the nasal mucous membrane. This form of middle ear discharge is frequently seen in children, especially those having adenoids in the nasa-pharynx, and in those recovering from measles and scarlet fever. Proper and thorough treatment of this form will effect a cure. Frequently the only thing necessary is the removal of the adenoids. However, if the condition is not treated, it will pass into the next form. (2) Discharge from the middle ear of a whitish, desquamated epithelium, with purulent fetid secretion, destruction of the drum membrane, and in many cases erosion and liquefaction of the auditory canal at the point where the drum should exist. This is the form usually designated as chronic.

The treatment of chronic suppurative otitis was divided into two heads: (1) Conservative, and (2) radical. In the performance of the radical operation on the middle ear, the occurrence of the following results should be considered and intelligently placed before the patient or his parents before the same is undertaken: (1) Injury to the facial nerve, with a consequent facial paralysis for a more or less definite time. (2) A loss in the amount of hearing power in that ear, as compared to that which existed before the operation. (3) A possibility that the discharge may not be entirely cured. (4) Injury to the sigmoid sinus, an accident not likely to happen to the careful operator. The technic of the operation was described.

DISCUSSION.

Dr. C. L. Williams, Columbus, reported the case of a boy, 12 years of age, illustrating the fact that discharges from the ears ought not to be viewed lightly.

Dr. R. B. Ridley, Atlanta, said the longer he practices and sees cases of chronic ear trouble, the more thoroughly is he impressed with the fact that the radical operation is the only treatment for chronic suppuration of the middle ear.

Dr. L. Amster, Atlanta, said that often the physician should be censured for not paying early attention to these cases of ear discharge, which eventually develop into chronic middle ear trouble, especially after measles, scarlet fever, etc.

DR. J. L. HIERS, Savannah, denounced the insufflation of powders in these cases, as in his hands they have been more harmful than beneficial. The wet treatment, syringing with strong antiseptic solutions, is best suited to the individual case. He emphasized the importance of using the dry treatment and of packing the ear lightly with absorbent gauze, preferably bichlorid or iodoform gauze.

DR. HENRY R. SLACK, LaGrange, finds that the wet treatment is decidedly the best, especially if it has to be intrusted to a member of the family. In getting rid of granular conditions in the ear, he has frequently found nitrate of silver very efficacious.

Medicolegal

Physicians Prohibited Testifying to Paresis in Family.

The Court of Appeals of New York says that testimony was introduced *in re* Mary A. Myer's will tending to show that, at the time of the execution of the will, the testatrix was afflicted with paresis, which it was claimed deprived her of testamentary capacity. In order to supplement and support this evidence, two physicians were called as witnesses. One of them had been the medical adviser of the testatrix's brother, and the other of her mother. These witnesses testified that both the mother and brother of testatrix had been afflicted with what they termed "general paresis," that their knowledge of this condition was obtained while attending such persons in their professional capacity, and that such knowledge was necessary in order to treat them. The testimony was objected to as incompetent and privileged under section 834 of the New York Code of Civil Procedure, and the court holds that it was clearly within the provisions of said section, which prohibits a physician from disclosing "any information which he acquired in attending a patient, in a professional capacity, and which was necessary to enable him to act in that capacity."

By the express terms of section 836, the court goes on to say, the provisions of section 834 are made to apply to the "examination of any person as a witness." The fact that the testimony of these physicians related to patients who were not parties to the proceeding or interested therein, and who were, in fact, dead at that time, did not annul the prohibition of the statute. In Davis vs. Supreme Lodge, 165 N. Y. 159, the defense sought to prove the cause of death of two aunts of the deceased by the testimony of their attending physicians. The evidence was excluded, and this court upheld the ruling. Judge O'Brien, in writing for the court, said: "This court has held that the statements of the attending physician for the purpose of establishing the cause of death either of the insured himself or of his ancestors or their descendants, although not parties to nor beneficiaries under the contract, were not admissible. They are excluded, not only for the purpose of protecting parties from the disclosure of information imparted in the confidence that must necessarily exist between the physician and patient, but on grounds of public policy as well. The disclosure by a physician, whether voluntary or involuntary, of the secrets acquired by him while attending on a patient in his professional capacity, naturally shocks our sense of decency and propriety, and this is one reason why the law forbids it."

Besides, the court says that there was another equally potent reason why this evidence should not have been received. The case was barren of facts which tended to show that the paresis with which the mother and brother of the testatrix were said to have been afflicted was acquired by them under circumstances that would render it transmissible so as to taint the family blood. It is doubtless the general and well-established rule that, where the mental soundness of an individual is in question, the sanity of the blood relations in the ancestral line may be shown as tending to establish the fact in issue, but that rule does not permit indiscriminate and unexplained evidence of diseases afflicting such relations and affecting their mental faculties. There must be evidence tending to show at least that such diseases are hereditary or transmissible. It is a scientific fact of common knowledge that the transmissibility of the malady known as "general paresis" depends to a great extent on the conditions underlying the disease. The medical writers differ as to its cause or causes, but it seems to be conceded that the majority of cases result from syphilis, while in others it may be superinduced by various excesses or overexertions of the individuals afflicted. Whether the particular form of the disease from which the testatrix and her family suffered was of such a transmissible character that she might be said to have derived it from her ancestors could not be determined from the evidence in the record, and it was, therefore, difficult to see how the testimony of the physicians was really pertinent to the issue whether the testatrix was possessed of testamentary capacity.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Syphilis.

In speaking of the treatment of syphilis Campbell Williams, in the *Clinical Journal*, states that every method of administering mercury has its advantages and drawbacks.

The treatment of syphilis should not be made one of the rule-of-thumb order, as the dose required by one patient may be insufficient for another, and too much for a third person. Consequently the dose and preparation must be suitable to the patient in that it removes the symptoms and cures the patient. Irregularity in taking the mercury is one of the disadvantages of administration by the mouth. On the other hand, the overanxious patient may take more than double the dose prescribed and thus induce a stomatitis and diarrhea. In some instances, it matters not how small the dose may be nor the nature of the preparation, it can not be tolerated when taken by the mouth, as it produces griping and purging. In the majority of ordinary diarrheas the following combination is recommended:

R.	Hydrarg. tannatis.....gr. iss	09
	Pulv. opii.....gr. 1 4-1 2	015-.03
	Ext. hematoxylin	
	Ext. gentianæ, āā.....gr. ss	03

M. Ft. pillula No. i. Sig.: One such pill three times a day. Or:

R.	Hydrarg. gallatis.....gr. iss	09
	Pulv. opii.....gr. 1 4-1 2	015-.03
	Confectio, rosæ	
	Ext. hematoxylin, āā.....gr. 1 2	03

M. Ft. pil. No. i. Sig.: One such pill three times a day.

The astringency of the gallate in the foregoing combination not infrequently produces indigestion.

In a great many cases, according to Williams, all that may be necessary is to mask the gray powder as follows:

R.	Hydrarg. cum creta.....gr. i	06
	Bismuthi carb.....gr. ii	12
	Pulv. opii.....gr. 1 4-1 2	015-.03
	Ext. hematoxylin.....gr. 1 2	03

M. Ft. pil. No. i. Sig.: One such pill three times a day.

One of the simple remedies recommended for combating the mercurial diarrhea is the administration of a raw egg, as it probably forms a non-irritating albuminate of mercury, and two or three eggs in the twenty-four hours, together with a discontinuance of the drug, causes the enteritis rapidly to subside. The diarrhea most frequently develops following the administration of the biniodid, subchlorid, yellow mercurous iodid or the green iodid. The condition of the teeth should be carefully observed in order to keep the gums in a healthy condition. One of the best methods for hardening the gums is to paint them night and morning with alcohol (90 per cent.); mouth washes of alum or myrrh are also of value. Poor patients who can not afford to buy the medicine may be m

structed to rub a little alum into the gums once or twice daily. At any rate, the toothbrush must be used daily. The author recommends the following as a very efficacious mouth wash:

R. Plumbi acetatis	℥iiss	10
Pulv. alumin.	℥v	20
Aquæ	℥xvi	500

M. Dissolve the salts separately, mix, filter and add essence of peppermint one-half dram. Sig.: As a mouth wash four times a day.

In some cases chronic constipation may be present. In such instances it may be necessary to add extract of belladonna gr. 1/10 (.006), or aloin gr. 1/10 (.006), to each pill.

In patients who are run down or anemic and are in need of tonics, the following combination is recommended:

R. Hydrarg. cum cretæ		
Ferri reducti, āā	gr. i	06
Quin. sulph.	gr. ss	03
Ext. nucis vomicæ		
Pulv. opii, āā	gr. 1/6	01
Ext. gentianæ	gr. 1/2	03

M. Ft. pil. No. i. Sig.: One such pill three times a day.

When the treatment is meeting the requirements the patients increase in bodily weight, they experience no depressed feelings. It is the author's opinion that the iodids do not cure syphilis, but only clear up the symptoms, and unless mercury is administered in conjunction with the iodids or following them, relapses will surely occur. However, he recommends the following mixture in addition to the mercury in order to hasten the healing of the initial lesion and the reduction of enlarged lymphatic glands:

R. Liq. hydrarg. perchlor (B. P.)	℥i	4
Potassii iodidi	gr. v-x	30-.65
Syr. zingiberis	℥i	4
Aquæ chloroformi	℥i	30

M. Sig.: At one dose, to be taken at bedtime in a glassful of water.

Donovan's solution (liquor arseni et hydrargyri iodidi) is a valuable preparation in some cases, but its great drawback is the bad effect produced on the stomach. The amount of arsenious iodid which is contained in the usual dose in some cases is sufficient to produce arsenical pigmentation when administered for a great length of time. The most speedy reaction, according to Williams, follows an intramuscular injection. The patient, however, may object to such a method, in which event the inunction may be employed. The advantages of administration by the mouth are that it is cheaper, more convenient and can be carried out by the patient. An overdose or an underdose can be corrected at will, and the combination changed from time to time to avoid any disturbance of the stomach. Another great advantage of which the author speaks is that the treatment can be carried out in privacy. He rather favors the inunction method of treatment, however, when it can be satisfactorily carried out by employing a professional rubber, as the patient is too apt to be superficial when he attempts to do his own rubbing, as it is tiresome work. The time should occupy a space of from 20 to 30 minutes of energetic massage properly to rub in one dram (4.00) of the ointment. Consequently this in addition to a preparatory steaming or hot bath requires an hour's time each day. The keynote to success in the treatment of syphilis is continuity of treatment until a cure has been effected. The condition of the skin must be observed to avoid a mercurial erythema or suppuration of the hair follicles.

Rectal Feeding.

In an abstract in the *British Med. Jour.*, Drs. Francis Boyd and Jean Robertson conclude by observation on six cases that rectal feeding is of low value. In the opinion of the authors it is hopeless to expect that a patient who is suffering from esophageal or pyloric obstruction can be improved in a nutritional way. As albumin is absorbed in such small amounts, they recommend the abandonment of nitrogenous substances and the substitution for them of the fats and carbohydrates. The best form of fat is the yolk of egg. If prepared fat is used it should be in a state of fine emulsion and of low melting point. Pure olive oil is recommended, a small quantity being emulsified and used to emulsify the entire amount. As a good nutrient enema the following combination is recommended by them:

R. Yolk of eggs, two.		
Dextrose	℥ss	2
Sodii chloridi	gr. viii	50
Lactis (pancreatized)	℥x	300

M. Sig.: At one time as a nutrient enema one hour after cleansing the bowel by colonic flushing, by slowly siphoning it into the bowel by means of a soft rubber catheter.

An enema similar to the foregoing has an approximate caloric value of 300 heat units and thus, if given every six hours, the total heat units will reach 1,200, of which 500 heat units may be absorbed. They call attention to the fact that feeding by rectal enemata often causes pain in the stomach by exciting the flow of gastric juice, especially when gastric ulcer is present. In such instances, it is stated, the healing of the ulcer may be promoted by allowing the patient a small amount of milk by the mouth, which will combine with the acid thus secreted and protects the ulcer from its action. They arrive at the conclusions, therefore, that rectal feeding has a very limited field of usefulness and does not afford complete rest to the stomach.

Alkalies.

Brunton, in the *Practical Med. Series*, calls attention to the value of alkalies in the relief of pain, especially the pain of toothache. It is the presence of acid in the carious tooth that is the most potent factor in the production of toothache as demonstrated by the rapid disappearance of the pain almost immediately on the application of a solution of sodium bicarbonate. This method of treatment is also of value when there is general aching of the teeth due to retracted gums. He also calls attention to the benefit derived by the alkaline treatment in cases of furuncles accompanied by sharp, stinging pain. The theory is that the pain is due to diminished alkalinity of the blood, both in the general system and in the local area, consequently alkalies, both internally and externally, are advised. The same outline of treatment will hold good in some cases of neuralgia and other painful affections.

Cyclic Vomiting in Children.

In the treatment of cyclic or recurrent vomiting in children, LeRoy advises against the use of morphin. Lavage and colonic flushings have also been useless in his experience. He is of the opinion that the origin of the disease is in the small intestine and that therapeutic measures must be so directed. For this purpose he recommends the following outline of treatment:

R. Pulv. aloes et myrrh	℥ii	8
Pulv. guaiaci	℥iss	6
Pulv. capsici	℥i	4
Mix and triturate in porcelain mortar and add:		
Olei cinnamomi	m. xxv	1.65

Ft. cap. No. xxv. Sig.: One capsule every four hours until bowels act.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

April 28.

1 *Etiology of Relapses in Syphilis. J. Neumann, Vienna, Austria.
2 Hepatic Insufficiency. A. C. Croftan, Chicago.
3 Office Treatment of Anal Fissure. S. G. Gant, New York.
4 *A Common Form of Insanity. C. A. Drew, Bridgewater, Mass.
5 Practical Management of Typhoid Fever. C. E. Nammack, New York.
6 *Early Diagnosis and Treatment of Puerperal Septic Diseases. S. Marx, New York.
7 *Determination of the Absence of Hydrochloric Acid by a Simple Stool Examination. A. F. Hess, New York.
8 Diabetes Mellitus in Children. H. R. Livengood, Elizabeth, N. J.
9 Muenster Am Stein. B. Fernow, New York.

1. Etiology of Relapses in Syphilis.—Neumann summarizes his paper as follows: The late syphilitic relapses, the relapse *in situ* as well as the metastatic relapse, have their origin in the microscopically demonstrable syphilitic products, including the syphilitic lymph glands, which persist after the dis-

appearance of the clinical manifestations. These may exist a very long time, even more than a decade. The complete elimination from the organism of all the germs of the disease as promptly as possible therefore follows as a fundamental indication in the treatment of syphilis.

4. **Common Form of Insanity.**—Drew discusses especially that type of insanity variously known as pubescent insanity, adolescent insanity, precocious dementia, primary dementia or dementia præcox. Drew believes in regard to treatment, that the only safe rule is to consider every case toxic, or due to some derangement of the physiologic functions of the body. The full confidence of the patient should be won, for then the troubled brain will be greatly relieved. Elimination should be encouraged. A brisk purge may be the best of all medicines at first. Home environment is often a great obstacle. Oxidation stands next in importance to elimination. All hypnotics should be avoided if possible. The treatment of each case must be considered separately, for its details will vary with each patient.

6. **Early Diagnosis and Treatment of Puerperal Septic Diseases.**—Marx maintains that practically all sepsis arising after labor gains its entrance from the so-called puerperal ulcers, whether they be situated at the vaginal outlet, their most frequent site, or on or within the cervix. Early recognition and treatment will cut short many a case of beginning sepsis that would otherwise develop into a dangerous and prolonged illness. All elevations of temperature, or an abnormally high pulse rate with or without fever, in the period of the puerperium should be considered with suspicion. In the case of evident ulcerative areas, which are limited to the lower genital tract, the interior of the uterus should under no condition be invaded by hand or instrument. Carbolic acid, in pure form, is the cauterant of choice because of its painlessness, its deep influence, and the ability to control its action with alcohol. In the case only of intrauterine sapremia is the exploration for retained products of conception justified.

7. **Determination of Absence of Hydrochloric Acid.**—Hess has found that by making use of the fact that connective tissue can be digested only by the gastric juice the lack of secretion of hydrochloric acid by the stomach can be determined by naked-eye inspection of the stools. The patient during three days is given a test diet, of which the chief requirement is that it shall contain one-fourth of a pound of chopped beef cooked so that it is still rare within. On carefully scrutinizing the finely divided stool under these conditions, if there is absence of hydrochloric acid secretion particles of undigested connective tissue will be recognizable. The author recommends the method of application in cases which the passage of the stomach tube would be inadvisable.

New York Medical Journal.

April 28.

10 *The Overtrained Nurse. W. G. Thompson, New York.
11 *The Trained Nurse and Surgery. R. Abbe, New York.
12 *Organization and Control of Training Schools. G. P. Ludlam, New York.
13 *What Nurses Should Be Taught. M. A. Samuel, New York.
14 Clinical Examination of the Stools. R. Weil, New York.
15 Diagnosis of Affections Characterized by Abdominal Pain. G. P. La Roque, Richmond, Va.
16 Clinical and Microscopical Variations of Chorioepithelioma from a Practical Standpoint. (Concluded). R. T. Frank, New York.
17 Roentgen Treatment of Some Non-malignant Superficial Lesions. C. L. Leonard, Philadelphia.

10. **The Over-Trained Nurse.**—Thompson claims that what ever shortcomings may be demonstrated in criticism of the present system of nurses training, the primary responsibility therefor belongs to the members of the medical profession, who, if they would devote as much time and thought to the problems of the training school curriculum, the relationship of the work of the nurses to that of the house staff in hospitals and similar matters, as they devote to other medical duties would soon produce ideal results in a system which, despite its serious shortcomings, has proved of the greatest possible benefit ever since it was established. The medical profession should define emphatically and clearly the limitations of the nurse's sphere of work and study. Physicians connected with institutions fostering training schools should insist on representation on their boards of school management, not merely in an advisory but in a governmental capacity. The curriculum of every training school should be submitted for approval and adoption by the physicians associated with the government of the school. The period of work for the trained nurse's ordinary diploma should be two years, but subsequent training for a year or more should entitle the graduate nurse to an additional certificate. Hospitals should admit for brief periods of study (say six months) a class of trained attendants, who should be exercised in the care of ordinary cases of illness not involving special technical skill or extended experience, and who could, in serious cases, aid the trained nurse in the work, and during convalescence supplant her at less expense to the patient. Provision should be made for the study of the nursing of private patients prior to graduation.

11. **The Trained Nurse and Surgery.**—Abbe contends that the value of a trained nurse in surgical work is much more dependent on her personal qualities, her conduct, discipline and experience than on the elaborate study of technical matter which had better be left to the physician.

12. **Training Schools.**—Ludlam insists that the organization of the training school should be as a department in the hospital to which it belongs. It should be conducted by one who has marked executive and administrative ability, and who, while free to discharge the duties of her office without interference should, at the same time, be distinctly subordinate and amenable to the general executive authority of the hospital. There should be a closer relation between the school and the attending staff of the hospital, and the wards of the hospital should be in charge of capable, permanent head nurses.

13. **What Nurses Should be Taught.**—Samuel says that it is not too much education that is the fault, but a want of more thoroughness and system in all that pertains to a nurse's work. Nurses should receive elementary instruction in anatomy, physiology, hygiene, bacteriology, materia medica, domestic science, and the principles and practice of nursing. The nurse should know something of normal and pathologic urine, and should be taught the simple tests for albumin and sugar. In order that the laws of asepsis may be intelligently and conscientiously obeyed, a clear knowledge of the fundamental principles of bacteriology is absolutely essential. The crusade against tuberculosis further illustrates the importance of a knowledge of bacteriology. Nurses should also know something of the preparation of antitoxins, the cost, how and when administered, with the results to be desired, and the effects that may be anticipated. Massage is another strong point for a nurse. During her course of training she should also be given an opportunity for the development of executive ability. The daily use of the *x* rays, for diagnosis or treatment, the wonderful revelations of the microscope and cystoscope, the very general use of intravenous saline infusion or hypodermoclysis, all make it very apparent that a nurse's education at present is a vastly different one from that received by her sister of ten or fifteen years ago.

Boston Medical and Surgical Journal.

April 19.

18 *Clinical and Anatomic Study of Resistant Forward Shoulders. G. W. Fitz, Boston.
19 Treatment of Autointoxication or Autoinfection When They Are the Cause of Mental Disturbance. L. V. Briggs, Boston. (To be continued.)
20 The Secret of the Mayos' Success. W. Bartlett, St. Louis.
21 A Fatal Case of Gastric Tetany. L. Davis, Boston.

April 26.

22 Significance of Jacksonian Epilepsy in Focal Diagnosis; Site and Nature of Lesions Causing This Form of Spasm. C. K. Mills, Philadelphia.
23 *An Operation for Cystocele. W. P. Graves, Boston.
24 Influence in Favor of Better Market Milk. R. A. Pearson, Ithaca, N. Y.
25 Treatment of Autointoxication or Autoinfection When They Are the Cause of Mental Disturbance. (To be continued.) L. V. Briggs, Boston.

18. **Resistant Forward Shoulder.**—Fitz claims that the term round shoulders is misleading. Forward shoulders (postural resistance) is far more definite, but should be accompanied by a definite statement of the cause of resistance. Resistant forward shoulders are symptomatic of anatomic conditions. The commonly accepted statement that tight pectoral muscles

are the cause is not tenable. The most common factor in forward shoulders is the tightness of the serratus muscle. An occasional factor usually associated in extreme cases with the above is shortness of the coraco-clavicular and acromio-clavicular ligaments whereby the union of clavicle and scapula is made so rigid as to prevent full backward and downward movements of the shoulder. Systematic examination of forward shoulder cases is necessary in order to identify the definite causes of restriction of motion. The early recognition and treatment of pronounced cases is important since self-correction is unusual and the reflex moral effect is serious. When stretching and muscular development fail, it is possible to incise the tight coraco-clavicular ligaments, and thus to free the shoulder from rigid interference. The term "round shoulders" is misleading. Forward shoulders (postural or resistant) is far more definite, but should be accompanied by a definite statement of the cause of resistance.

23. **Operation for Cystocele.**—The operation described by Graves is an anterior colporrhaphy, and depends for its success on the presence of pubic attachments. Its essential principle is that of any anterior denudation which seeks support from the sides, but has in addition the purpose of gathering up all the slack tissue so as to avoid protrusions and to leave the anterior wall perfectly smooth. The most important protrusion to reduce is the somewhat loosely called urethrocele. Graves insists that this should always be reduced even in cases in which cystocele does not exist above it, as it is sure in time to stretch out the external portion of the repaired perineum. No particular originality is claimed in this operation as it combines and modifies principles long ago described by Dr. Emmet. [The operation is described in detail, but because of frequent references to diagrams and drawings which accompany the text it is impossible to abstract satisfactorily that portion of the paper.—ED.]

Lancet-Clinic, Cincinnati, Ohio.

April 28.

26 Traumatic Brain Injuries. R. H. Moss, Niagara, Ky.
27 Chronic Ulcers. L. Heimann, Evansville, Ind.

University of Pennsylvania Medical Bulletin, Philadelphia.

March.

28 *Histologic Changes in Uterine Myomata in Their Transformation Into Fibroid Tumors. E. S. Allen and C. C. Corson, Philadelphia.
29 Precocious Diagnosis. E. Martin, Philadelphia.
30 Study of Two Cases of Syringomyelia, with Necropsy. H. S. Hutchinson, Philadelphia.
31 Hysteria Simulating Fracture of the Spine. F. H. Klaer, Philadelphia.

28. **Histologic Changes in Uterine Myomata.**—Allen thinks that in uterine myomata there is always a certain amount of elastic tissue, either in normal amounts and relations in the blood-vessel walls or sometimes in the tumor tissue, where it is distributed among the bundles of muscle along with fibrous tissue of such septa and muscular investments. Vascular changes of the type of fibrous and elastic hyperplasias are common in such tumors, leading to the thickening of their coats and to eventual obliteration of vessels, and to increase in the connective tissue framework of the tumor in the vicinity of the affected vessels. Probably as a result of nutritive disturbances brought about by such vascular changes this excess of the elastic tissue in the surrounding tissues does not maintain an integral condition, but deteriorates and eventually disappears. Probably dependent on the same nutritive disturbances the original muscular elements of the tumor also atrophy, degenerate and necrose, and finally disappear as muscle spindles, although there is some evidence that the cell wall (corresponding to the sarcolemma of the striated type of muscle) may remain and contribute in a passive manner to the fibrillar material of the final fibroid tissue. The character of the tissue and the relative paucity of fiber-forming young elements is consistent with the idea that the fibrillar tissue of the final uterine fibroid is in a large part not true fibrous connective tissue, and that the general process of transformation is not a progressive but a retrogressive one

Archives of Pediatrics, New York.

April.

32 Case of Uncinariasis in a Child. S. S. Adams, Washington, D. C.
33 *Costal Synostosis About Drainage Tubes in Empyemia. F. Huber, New York.
34 Necessary Requirements for Intelligent Infant Feeding, and a Method of Reducing the Complexity of the Mathematical Calculations. C. H. Dunn, Boston.
35 The Diathetic Child. L. Kerr, Brooklyn, N. Y.
36 Case of Porencephalus. G. N. Acker, Washington, D. C.

33. **Costal Synostosis About Drainage Tubes.**—Huber reports 4 cases of chronic pleural fistula in which he operated and from which he removed costal synostosis which had formed about the drainage tube.

Detroit Medical Journal.

April.

37 *Intermittent Claudication. J. Flintermann, Detroit.
38 A Few Important Points on the Causes and Prevention of Deafness. G. W. Spohn, Elkhart.
39 Osteopathy. W. E. Blodgett, Detroit.
40 Progress of Internal Medicine. V. C. Vaughan, Detroit.

37. **Intermittent Claudication.**—For years Fintermann's patient complained of weakness and pain in the lower extremities, first in the left and then in the right. The pain and weakness were not constant, but were the most noticed after overexertion, either standing or walking. After rest, the pain and weakness would disappear for some time, always coming back after overexertion, and the intervals between those attacks would become shorter, so that finally, even when resting, the pain and weakness would not leave him. There were signs of imperfect nutrition of the parts, the foot would become stiff and cold, and signs of insufficient blood supply would manifest themselves. Impairment of motion and sensation would become very intense, finally developing to such a condition that nutrition became so insufficient that gangrene at the most peripheral parts developed, finally necessitating amputation below the knee. After years of suffering and insufficient nutrition, a condition developed showing a change in the tissue of the blood vessels, finally reaching such a state that pulsation could not be felt in some of the main arteries of the extremities. The examination of the blood vessels after the amputation showed an endarteritis obliterans.

The Journal of the Minnesota Medical Association and Northwestern Lancet, Minneapolis.

April 15.

41 *Surgical Treatment of Goiter. C. H. Mayo, Rochester.
42 *When Not to Operate for Appendicitis. J. E. Moore, Minneapolis.
43 *Case of Typhoid Fever, with Comment on the Relational Pathology of the Disease. H. A. Tomlinson, St. Peter.
44 Intestinal Tuberculosis, with Reference to Resulting Stenosis. R. E. Farr, Minneapolis.

41.—See abstract in THE JOURNAL, April 7, 1906, page 1053.

42.—See THE JOURNAL, June 24, 1905, page 1976.

43. **Case of Typhoid Fever.**—The points of special interest in the case reported by Tomlinson were the involvement of the general nervous system, the nature of the convulsion, the relatively greater severity of the illness in a relapse that occurred, as well as the fact that in its general manifestations the case closely resembled the clinical picture of typhoid fever in the insane.

The Therapeutic Gazette, Detroit.

April 15.

45 *Pulmonary Edema. W. M. L. Coplin, Philadelphia.
46 *The Menopause in Fable and in Fact. E. Reynolds, Boston.
47 *Practical Points in the Dietetic Management of Diabetes. A. C. Croftan, Chicago.
48 Quinin in Malarial Hematuria. H. C. Buck, Friar's Point, Miss.
49 Spinal Anesthesia, with Especial Reference to the Use of Stovaine. W. W. Babcock, Philadelphia.
50 Adrenalin and Chloretone in the Treatment of Chronic Rhinitis and Pharyngitis. J. C. Warbrick, Chicago.

45. **Pulmonary Edema.**—The multiplicity of affections with which pulmonary edema may be associated is well shown by the analysis of the 405 cases included in Coplin's report. There was a coexisting congestion of the lung in 235, tuberculosis in 69, croupous pneumonia in 38, atelectasis in 12, infarction in 12, gangrene in 5, bronchiectasis in 3, chronic pleurisy in 120, acute pleurisy in 23, and hydrothorax in 34. Bronchitis could be recognized in only 12 cases. In 350 of the cases associated cardiac lesions were also present; hypertrophy in 108, dilatation in 62, chronic endocarditis in 96, acute endocarditis in 7, myocarditis in 76, and in one the heart was malformed. In 35 cases there was a pericarditis, and in 6 a hydro-

pericardium. In 140 of the cases arteriosclerosis was sufficiently marked to attract attention. Renal lesions were present in 333 cases, chronic parenchymatous nephritis in 156, chronic interstitial nephritis in 126, acute diffuse nephritis in 42, and in 9 nephritis was observed, although the form is not stated. Hydronephrosis was found in 7 additional cases. The liver was congested in 150 cases and cirrhotic in 40. Although intracranial lesions are often named as important causes of pulmonary edema, the cases therein studied offer no convincing evidence of an intimate association between the pulmonary lesion and meningeal or cerebral disturbances. In 29 cases there was a cerebral edema, apparently due to the same causes as the pulmonary lesion. Meningitis was also present in 20 cases, and in most of these evidences of sepsis are recorded. Cerebral hemorrhage was found in 7 cases and meningeal hemorrhage in 6. In 50 patients colitis, either dysenteric or probably uremic, was observed. Ascites was a complication in but 25. With regard to the sex, 261 were males and 139 were females; in 5 cases the sex was not stated.

46. **Menopause in Fable and Fact.**—Reynolds claims that beyond slight disturbances there should be no symptoms in the normal menopause. Every definite symptom of pelvic origin which appears at the menopause has a given lesion to account for it; that is, with perfect pelvic organs the years of the menopause will pass pleasantly by, with little or nothing to direct the woman's attention to it save the cessation of the catamenia. He who has learned to search out the cause and effect is often horrified at the amount of unrelieved suffering which can be traced to the dogma so generally accepted by the laity, and by too many members of the profession, that any nervous or circulatory disturbance, or, indeed, any chronic ailment whatsoever that occurs between 35 and 50 may safely be attributed to the menopause. Reynolds urges that it must be insisted on that relatively slight lesions may at this period initiate processes of real importance, or may at least cause symptoms of importance, which usually take the form either of greatly increased nervousness, pelvic pressure or bearing-down sensations, actual pelvic pain, or irregular or increased flow. All these are abnormal, can in most cases be referred to a definite pelvic cause, and should always attract attention because usually they can be relieved by an intelligent understanding of the class of lesions to which each class of symptoms may be referred.

47. **Dietetic Management of Diabetes.**—Four points in particular as regarded by Croftan as of a special practical value as they may guide the practitioner away from the paths of routine and still enable him to remain within the limits of safety. The first of these points is the danger of too much meat. Meat actually leads to sugar excretion in diabetes, and excessive meat feeding favors the development of acidosis. Withdrawal or reduction of meat appreciably increases the tolerance for carbohydrates, even in mild cases. The second point is the danger of too little carbohydrate which results in acidosis and, finally, coma. It is important to determine the tolerance or the so-called boundary of assimilation for carbohydrates in each case of diabetes. Third, a diabetic should receive the largest amount of fat in his food that he can possibly stand. Not only does fat spare the tissue albumins, but its calorie value is so high that it aids most materially in maintaining nutritive equilibrium. Fourth, the value of the rice, potato, milk and oatmeal cures. Croftan's experience has been limited to the oatmeal cure. He claims that if the rule is observed to stop the oatmeal cure if good effects are not seen within three days, the number of bad results will be reduced to insignificant figures. The best results are obtained in juvenile diabetics, and he urges that no case of juvenile or adolescent diabetes should be deprived of the benefit of an oatmeal cure. The practical application of the quantitative method is described in full.

The Journal of Medical Research, Boston.

April.

51 Optical Advantages of the Ultra Violet Microscope. W. C. Sabine, Boston.
52 Ultra Violet Photomicrography. H. C. Ernst and S. B. Wolbach, Boston.
53 Rapid Diagnosis of Rabies. L. Frothingham, Boston.
54 *Pathologic Calcification. H. G. Wells, Chicago.
55 Stable and Detachable Agglutinogen of Typhoid Bacilli. B. H. Buxton and J. C. Torrey, Ithaca, N. Y.
56 Further Study of the Experimental Production of Liver Necroses by the Injection of Hemagglutinative Sera. R. M. Pearce, Albany, N. Y.
57 Influence of Glycerin in Differentiating Certain Bacteria. E. Andrade, Jacksonville, Fla.

54. **Pathologic Calcification.**—Collecting the evidence obtained from both the literature and from experiments, Wells deduces therefrom the following facts: 1. The composition of the inorganic salts in calcified areas in the body seems to be practically the same, if not identical, whether the salts are laid down under normal conditions (ossification) or under pathologic conditions. (This is shown by a table giving the proportion of inorganic salts found by analysis in normal bone, and the proportion found in calcified materials.) 2. No evidence has been obtained by direct chemical analysis that calcium soaps form a constant and important stage in the process of calcification of tuberculous areas and thrombi. That the formation of calcium soaps is an essential process in pathologic calcification seems, however, highly improbable. 3. Cartilage, at least the epiphyseal cartilage of long bones, shows a striking tendency to accumulate calcium salts, even when the cells have been killed by heat. On the other hand, the presence of large amounts of nucleoproteids (spleen and thymus) seems to lead to no specially rapid impregnation with calcium, as compared with tissue poor in nucleoproteid (muscle). This agrees with the great tendency of degenerated connective tissue to calcify, in spite of its extreme paucity in nucleoproteid, an observation which speaks strongly against phosphoric acid, arising from decomposed nucleoproteids, as an important binder of calcium in pathologic calcification, attractive as this hypothesis is. Wells thinks that the facts at hand are not sufficient to warrant theorization, on the chemic and physiologic processes of calcification.

Colorado Medicine, Denver.

April.

58 Dunbar Treatment of Hay Fever. R. Levy, Denver.
59 Immunity. W. C. Mitchell, Denver.

The Physician and Surgeon, Detroit and Ann Arbor, Mich.

February.

60 Life and Character of Moses Gunn. C. B. G. de Nancrede, Ann Arbor.
61 Borderland Cases of Insanity. I. H. Neff, Pontiac, Mich.

Northwest Medicine, Seattle, Wash.

April.

62 Significance of the Pupillary Reaction During Anesthesia. E. R. Northrop, Spokane.
63 Significance of Symptoms in Upper Abdomen. H. M. Read, Seattle.
64 Significance of Abdominal Tenderness. P. W. Willis, Seattle.
65 Abdominal Pain Due to Extra-Abdominal Disease. J. B. McNerthney, Tacoma.
66 Methods of Examination in Diseases of the Stomach. H. S. Martin, Spokane.

Fort Wayne Medical Journal-Magazine.

March.

67 First Principles of Medicine. W. P. Whery, Ft. Wayne.
68 Chronic Pancreatic Disease. B. W. Rhamy, Ft. Wayne.
69 Transition of Medicine. H. G. Nierman, Ft. Wayne.

New York State Journal of Medicine.

March.

70 President's Address, Medical Society of the State of New York. J. D. Bryant, New York.
71 Plea of the Patient. G. Cleveland, Princeton, N. J.
72 Advance in Medical Knowledge. M. L. Bruce, New York.
73 The State and the Doctor. St. C. McKelway, Brooklyn.
74 Address on Organization. L. S. McMurtry, Louisville, Ky.
75 Progress in Medicine. W. W. Keen, Philadelphia.
76 History of Medicine in the State of New York for the last Hundred Years. S. B. Ward, Albany.
77 Progress in Surgery in the Nineteenth Century. R. Park, Buffalo.
78 Typhoid Fever. L. Coville, Ithaca.
79 Toxic Arthritis. H. A. Fairbairn, Brooklyn.
80 Results of the Sanatorium Treatment of Pulmonary Tuberculosis. J. H. Pryor, Saranac Lake, N. Y.
81 History of the Medical Society of the State of New York. J. J. Walsh, New York.

The Quarterly Journal of Inebriety, Boston.

Spring Number, 1906.

82 Alcoholic Poisoning and Degeneration. G. Bunge, Switzerland.
83 Recognition of Drug Addictions in Life Insurance. T. D. Crothers, Hartford, Conn.

84 Nicotine Question in Smoking. Stranch, Vienna.
85 Alcoholism, Speed Mania and Objectless Activities. W. L. Howard, Baltimore.
86 Alcohol in Medical Practice. J. H. Kellogg, Battle Creek, Mich.
87 Predisposing and Acquired Characteristic of the Alcohol and Drug Habitué. C. D. Mills, Marysville, Ohio.
88 Wine and the Poets. J. Madden, Portland, Oregon.

Pacific Medical Journal, San Francisco.
April.

89 Influence of the Mind Over the Functions of the Body. E. W. King, San Francisco.
90 A Sociologic Problem of the Day, from a Medical Standpoint. C. W. Kellogg, Bakersfield, Cal.

Virginia Medical Semi-Monthly, Richmond.
April 13.

91 Diagnosis of Inflammatory and Ulcerative Lesions of the Penis and Scrotum. G. P. LaRoque, Richmond.
92 Extrauterine Pregnancy—Its Diagnosis and Treatment. J. N. Lewis, Roanoke.
93 Influenza. E. A. Long, Johnson City, Tenn.
94 Principles of Surgery. S. McGuire, Richmond.

The American Practitioner and News, Louisville.
April.

95 Fads of the Specialists. S. G. Dabney, Louisville.
96 Sarcoma of the Choroid. M. F. Coomes, Louisville.
97 Conjunctivitis. G. A. Robertson, Louisville.
98 Heredity, Training and Environment. B. F. Eager, Louisville.

Cleveland Medical Journal.
April.

99 Pathology of Tuberculosis of the Kidney. H. J. Whitacre, Cincinnati.
100 Hyperemia as a Therapeutic Agent. G. I. Bauman, Cleveland.
101 Case of Puerperal Tetanus. J. J. Thomas, Cleveland.

Chicago Medical Recorder.
April.

102 Farewell Address of Dr. David Doherty, Chicago, at the Banquet Given Him by the Chicago Medical Society, Feb. 17, 1906, on the Occasion of His Departure for the Philippines.
103 Acute Mastoid Abscess. F. Allport, Chicago.
104 Atrophy and the Adduction Deformity of Hip Disease. W. Blanchard, Chicago.
105 Tuberculosis of the Hip—Etiology and Pathology. E. W. Ryerson, Chicago.
106 Intravenous Injections of Mercury in Syphilis. W. F. Bernart, Chicago.
107 Chronic Intestinal Stenosis. J. R. Ballenger, Chicago.

Columbus Medical Journal.
April.

108 Evils of Mouth Breathing. C. P. Linhart, Columbus.
109 The Medical College Curriculum. W. A. Dickey, Toledo.
110 Id. J. U. Lloyd, Cincinnati.
111 Relation of the Literary and Medical Colleges. R. P. Daniells, Toledo.
112 What Subjects and How Much Work in Each Should Be Required of a Graduate of a Literary College to Gain a Year's Advanced Standing in a Medical College of this State. C. F. Clark, Columbus.

The Ohio State Medical Journal, Columbus.
April 15.

113 Localization and Removal of Foreign Bodies. C. F. Bowen, Columbus.
114 Pernicious Anemia. G. F. Zinninger, Canton.
115 Some Influences that Determine Age. W. C. Bunce, Oberlin.
116 The New Hospital a Necessity. A. B. Isham, Cincinnati.
117 Cases Illustrating the Difficulties in the Diagnosis of Smallpox as Against Chicken Pox. T. C. Miller, Massillon.

International Clinics, Vol. IV (Fifteenth Series), Philadelphia.

118 Treatment of Psoriasis. W. S. Gotthelf, New York.
119 Therapeutic Value and the Mode of Action of Physiologic Saline Solutions. Hallion and M. Carrion, Paris.
120 Treatment of Some Common Gastric Disorders. N. B. Gwyn, Philadelphia.
121 Internal Use of Carbolic Acid. M. Benedict, Vienna.
122 Nervous Disorders in Which Psychotherapy May Prove of Value. G. Ballet, Paris.
123 Empyema. J. N. Hall, Denver.
124 Value of Post-tussive Suction as a Sign of Excavation in the Lung. D. B. King, Bansshory, England.
125 A Method of Abdominal Palpation. A. E. Thayer, Galveston, Texas.
126 Later Stages of Cirrhosis of the Liver. D. Duckworth, London.
127 Thyroid Gland: Its Anomalies of Secretion and Their Manifestations and Treatment. T. R. Brown, Baltimore.
128 Symptomatology and Diagnosis of Malta Fever. C. F. Craig, San Francisco.
129 Results of Operations, Such as Gastroenterostomy, Pyloroplasty, etc., in Treatment of Diseases of the Stomach. J. B. Deaver, Philadelphia.
130 Phlebitis, Thrombosis, and Embolism Following Abdominal and Pelvic Operations. W. A. Edwards, Philadelphia.
131 Study of the Clinical Course of Joint Tuberculosis by Means of the X-Rays. A. H. Freiberg, Cincinnati.
132 Postoperative Surgical Neurasthenia. E. M. Corner, London.
133 Etiology and Early Diagnosis of Acute Peritonitis. B. T. Tilton, New York.
134 Cysts of the Lesser Peritoneal Cavity. J. F. Binnie, Kansas City.
135 Diagnosis of Surgical Diseases of Kidney. J. G. Sherrill, Louisville.
136 Study of Ectopic Pregnancy. T. A. Ashby, Baltimore.
137 Sixty Cases of Extrauterine Pregnancy. F. S. Newell, Boston.
138 Pelvic Hematocele and Hematoma. C. Lockyer, London.
139 Medical Treatment of the Menopause. R. W. Wilcox, New York.
140 Syphilitic Neuritis of the Optic Nerve with Impending Blindness Successfully Treated by Calomel Injections. L. Jullien, Paris.
141 An Experimental Study of the Effects of Roentgen Rays on the Blood-Forming Organs, with Special Reference to the Treatment of Leukemia. A. S. Warthin, Ann Arbor.
142 Eosinophilia. C. E. Simon, Baltimore.

International Clinics, Vol. I (Sixteenth Series), Philadelphia.

143 Medical Treatment of Exophthalmic Goiter. J. Tyson, Philadelphia.
144 Treatment of Gastroptosis. A. P. Francine, Philadelphia.
145 Coughing and Its Relation to Treatment. J. M. French, Cincinnati.
146 Dechloridation Treatment in Diseases of the Heart. E. Barie, Paris.
147 Indications for, and the Method of Performing, Venesection. J. W. Wainwright, New York.
148 Diagnosis and Treatment of Membranous Tonsillitis. L. S Somers, Philadelphia.
149 Position and Size of the Heart in Advanced Mitral Stenosis. M. H. Fussell, Philadelphia.
150 Origin and Preventive Treatment of Oxalic Acid Deposits in the Urine. G. Klemperer, Berlin, Germany.
151 Death and Blindness as a Result of Poisoning by Methyl, or Wood Alcohol and Its Various Preparations. C. A. Wood, Chicago.
152 Method of Lengthening the Achilles Tendon and Other Tendons. R. A. Hibbs, New York.
153 Gonorrheal Synovitis; Carcinoma of the Pyloric End of the Stomach. N. Senn, Chicago.
154 Effects of Quiet Renal Calculus. W. H. Battle, London.
155 Treatment of Carcinoma of the Tongue. J. L. Faure, Paris.
156 Importance of a Study of the Pulse in Surgical Disorders, with Special Reference to Its Bearing on Diagnosis, Prognosis and Treatment. C. G. Cumston, Boston.
157 Causation and Treatment of Eclamosia, with Special Reference to the Methods of Accomplishing Rapid Delivery of the Fetus. J. B. De Lee, Chicago.
158 Chorioepithelioma Malignum in a Pregnant Uterus; Rupture of the Uterus; Acute Hemorrhage. E. B. Young, Boston.
159 Eosinophilia. C. E. Simon, Baltimore.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.
April 14.

1 *Treatment of Taenia. J. K. Fowler.
2 *Psoriasis and Its Treatment. P. S. Abraham.
3 Eye Accidents and Compensation. S. Snell.
4 Important Symptoms in Diseases of the Eye. A. M. Ramsay.
5 Tabes Dorsalis. D. Ferrier.

1. **Treatment of Taenia.**—The method of treatment employed by Fowler is described as follows: 1. The patient is kept in bed. 2. For two or three days the diet is restricted to beef tea, about two pints, two rusks, and four ounces of port wine daily. During this time the patient is given gr. ii of cascara sagrada three times daily. About 5 a. m. on the fourth day the patient is given ʒi of compound infusion of senna, and at 9 a. m. a capsule containing m. xv of extract of male fern. The dose of male fern is repeated at 9:15, 9:30 and 9:45. At 11 a. m. another ounce of the senna is given. If the worm has not been expelled with the head by 1 p. m. a second course of treatment is given with the male fern, followed in an hour by a purgative. If the head is not found a third course is administered. Fowler says it is not advisable to continue the treatment beyond this without an interval of a day, as the patient may be somewhat exhausted.

2. **Treatment of Psoriasis.**—Abraham does not believe that there is any one drug administered internally which can be regarded as a specific in psoriasis. In his experience magnesium sulphate with a little iron and some bitter tonic is often useful in regulating and in improving the general nutrition, and in every case in which there is the least suspicion of an excess of uric acid in the system he gives salicylates, salicin and alkalies. As regards external remedies, his usual plan is to order a thorough soaking, for at least ten minutes, in a weak tar bath every day, to be followed by a copious inunction with the following ointment:

℞. Creolini ..... ʒss 2
Acidi salicylici
Hydrarg. ammon., ää ..... gr. x 6
Lanolini et
Vasolini ad ..... ʒi 30

Abraham sometimes adds two or three drams of soft soap, and occasionally 15 grains of pure precipitated sulphur. Most cases yield to this treatment in a few weeks, but when progress is slow he adds to this ointment 10 or 20 grains of chrysarobin. For psoriasis of the scalp his routine ointment, for a few weeks, is:

R.	Hydrarg. ammon. 5i	4
	Saponis mollis	
	Vasolini 3i	30

With the addition sometimes of resorcin or some tarry oil.

The Lancet, London.

April 13.

6 Tabes Dorsalis. D. Ferrier.
7 *Appendicostomy and Appendicectomy as a Substitute for Cecal Colotomy, and in Treatment of Typhoid. C. B. Keetley.
8 Points in the Treatment of Chronic Bright's Disease. S. West.
9 *Management of the Third Stage of Labor. G. F. Blacker.
10 Influence of the Nervous System and External Temperature on Certain Circulatory Changes Concerned in the Etiology of Catarrh, Ulcer, and Simple Dilatation of the Stomach, with Suggestions as to Treatment. A. Mantle.
11 Case of Glioma of the Pons. G. Schorstein and A. J. Walton.
12 *Relationship Between Exophthalmic Goiter and Acute Rheumatism. W. E. Robinson.
13 Two Cases of Otitic Lateral Sinus Phlebitis, one Complicated with Cerebellar Abscess. D. Grant.
14 The Turk's and Caicos Islands as a Resort for Cases of Pulmonary Tuberculosis. G. S. S. Hirst.

7. **Appendicostomy.**—Keetley reports a case in which he used the appendix for giving egress to feces when it would otherwise have been necessary to perform a cecal colotomy. He also discusses whether or not typhoid patients should be operated on before perforation and bleeding occur. This could be done either by performing an enterostomy or appendicostomy which would permit of flushing the ileum with a warm weak saline or a silver solution.

9. **Management of Third Stage of Labor.**—Blacker summarizes his paper as follows:

1. The third stage of labor is best treated by the employment of the Dublin or Credé's method of expressing the placenta after a sufficient interval of time has been allowed to elapse for the placenta to become separated from the uterine wall. 2. The tendency to shorten this interval of time to much less than the thirty minutes recommended by Credé is attended with considerable risk to the mother. 3. It is, however, best to be guided by careful observation of the changes in the uterus indicating that separation of the placenta has or has not taken place rather than by any arbitrary period of time. 4. After the change in the level of the fundus of the uterus takes place, indicating that the separation of the placenta has occurred, from ten to fifteen minutes should still be allowed to elapse so as to diminish the risk of the retention of any portion of the placenta or membranes. 5. If there is reason to suppose that the placenta is adherent and a trial of expression fails no harm will result to the mother in the absence of any urgent indications if a period of from one and a half to two hours is spent in waiting for its spontaneous separation and expulsion. 6. Manual removal of the placenta should never be performed if it can be avoided, and it should not be practiced in the absence of severe hemorrhage or any other indication for its immediate performance until from one and a half to two hours have elapsed since the birth of the child, and then only if further attempts at expression fail. 7. Retained portions of placenta and membranes should be removed at once, unless in the case of the membranes they are of quite small size. 8. In performing this operation it is a wise precaution to wear sterilized rubber gloves.

12. **Exophthalmic Goiter and Rheumatism.**—The possible relationship between these two affections was brought to Robinson's attention by the occurrence in one of his patients of a definite attack of rheumatism about six months after the first signs of Grave's disease. The case proved somewhat intractable to treatment, but the acute rheumatism yielded very readily to salicylate of sodium, and at the same time there was very pronounced diminution of all the signs of the exophthalmic goiter, notably of the swelling of the thyroid gland, the exophthalmos and the tremors. The pulse rate continued to be higher than normal, but this also was considerably lessened.

The Practitioner, London.

April.

15 Dietetics. D. N. Paton.
16 *General Considerations on Therapeutic Uses on Diet. R. Hutchison.
17 *Effect of Diet on Chronic Heart Disease and Diseases of the Circulatory System. D. Duckworth.
18 Diet in Acute Illness. G. N. Pitt.
19 *Diet in Renal Disease. J. R. Bradford.
20 Dietetic Treatment of Diabetes Mellitus. R. T. Williamson.
21 Diet in Gout, Rheumatism, and Allied Conditions. A. P. Luff.
22 Dietetic Treatment of Obesity. W. H. Allchin.
23 Dietetics in Consumption and Other Wasting Diseases. H. Mackenzie.
24 Dietetic Treatment in Epilepsy. W. A. Turner.
25 Dietetic Treatment of Dyspepsia and Diseases of the Stomach. S. H. Habershon.
26 Diet in Intestinal Disorders and Diseases. G. A. Sutherland.
27 Diet in Skin Diseases. M. Morris.
28 *Diet in the Tropics. W. J. Simpson.
29 By-paths of Medicine; the Method of Cornaro.

16. **Therapeutic Uses of Diet.**—Hutchison sketches briefly the general uses and limitations of dietetic means in the cure of disease, and indicates the principles which guide their application. He lays down the following general rules which should be borne in mind when drawing up any plan of dietetic treatment: 1. When prescribing a diet in a case of local disease one must take care not to sacrifice the whole to the part. 2. No article of food should be forbidden unless there is a good reason for doing so. 3. In acute disease one should recommend; in chronic disease forbid. 4. Before recommending any article, find out whether the patient likes it, and whether it agrees with him. 5. If an article disagrees, it is generally better to reduce its amount in the diet than to cut it off altogether. 6. General and proposed changes of diet should be made gradually. 7. Always bear in mind the following aphorisms of three great physicians: "Such food as is the most grateful, though not so wholesome, is to be preferred to that which is better though distasteful."—Hippocrates. "More importance is to be attached to the desires and feelings of the patient than to doubtful and fallacious rules of medical art."—Sydenham. "Physicians appear to be too strict and particular in the rules of diet and regimen; too anxious attention to those rules hath often hurt those who were well, and added unnecessarily to the distress of the sick."—Heberden.

17. **Diet and Heart Disease.**—Duckworth states that plain food of all varieties, plainly cooked, taken in regular meals, without any overloading, or excess in solids or liquids, is to be enjoined. Gastric, or intestinal, dyspepsia is naturally inconsistent with favorable nutrition of the body generally, and of the myocardium in particular. In the young, so long as sufficient food is taken, there is no need to encourage excess, or to feed habitually between meals. Strong meat soups and essences are to be avoided, and tea sparingly taken by both young and older patients. As a rule, all alcoholic drinks are best omitted from the diet, and tobacco smoking is to be abjured, or very slightly indulged in, and then only after a meal. If tea or tobacco induces palpitation, neither must be used. If these measures are imperative in the case of simple myo-hypertrophy of the heart, they are even more so when failure of muscular efficiency shows itself by the well-recognized symptoms of dyspnea, palpitation and oppression of the chest.

If, as a result of this failure, there is dropsy, the diet has to be modified. It is necessary to feed such patients with small meals, and to limit the amount of fluids of all kinds. It is also desirable to make the principal meal soon after midday, and to enjoin a lighter one in the evening; to avoid giving, at any one time together, proteids and carbohydrates. The choice of food is hardly important so long as it is simply prepared and readily digested. Predigested food is not so necessary as is commonly believed, but it may be needed in some cases. Soups and milk, therefore, are unwisely recommended in most instances, as tending to flatulence and discomfort in bedridden or sedentary conditions. Coffee with an equal part of milk is often a good cardiac stimulant, and may be better digested than tea as commonly made. A small cupful of freshly made China tea, with cream, may be given in the morning, and as much cocoa with milk later in the day. Small amounts of water or unaërated, indifferent spa water, may be given between meals. In the later stages of progressive heart failure with tumidity of the liver and dropsy, predigested foods may be employed; milk and barley water with citrate of soda and Koumyss may prove sufficient nutriment till some measure of appetite returns. Small quantities of iced champagne may prove useful. The question of withholding all salt from the food is worthy of consideration as soon as dropsical symptoms appear, and this plan may be tried.

19. **Diet in Renal Disease.**—Bradford says that a rigid system of dieting is suitable neither for all kidney diseases nor for all stages of the same disease, and attention in determining the diet should not be directed exclusively to the condition of the urine, but other factors, such as the general nutrition of the patient, the presence or absence of dropsy, the degree

of cardiovascular degeneration present, and the presence or absence of uremia, are all factors that should be taken into consideration. In cases of true acute nephritis associated with considerable suppression of the urine, and in which the eliminating functions of the kidney are most seriously compromised, the diet should be reduced to the greatest extent possible, and in some cases of very acute nephritis it may be advisable to withhold all food for a few days. In most cases such starvation treatment is not necessary, but it is still essential to give as little food as possible, and it may be as well to restrict this to one or one and a half pints of milk, moderately diluted, in the twenty-four hours.

All meat extracts and soups should be avoided throughout the illness, as their nutritive value is low, and they contain numerous extractives and salts which can only act as irritants to the kidney. The amount of fluid given to these patients should also be strictly limited, especially if there is any tendency to dropsy or to the development of hydremic plethora, and the use of diluents as diuretics should be restricted to the later stage of the malady, where, no doubt, much good may be derived by the administration of moderate quantities of fluid in order to promote the removal of débris from the renal tubules. In chronic renal disease, if complications such as uremia and dropsy are present, the dietetic treatment must be somewhat similar to that applicable to cases of acute nephritis, but owing to the long continued character of the disease, restrictions can not be carried to the same length as those suitable to the treatment of the acute malady. In chronic renal disease associated with dropsy, and particularly with increasing dropsy, a milk diet is also advisable, but in very chronic cases, in which the dropsy is moderate in amount and persistent for weeks or for months, a pure milk diet for prolonged periods. Such patients may be put on a milk diet of some three pints per diem, and if improvement sets in such a diet may be continued for three weeks, but it is probable that no useful purpose is served by maintaining such a diet for months, and a more solid diet with a minimum of common salt may often produce more beneficial results.

The improvement under a milk diet in chronic renal disease is often more spurious than real, the quantity of urine is seen to be increased, and the albuminuria to be apparently diminished; these are looked on as signs of improvement, when really all that has happened is that the diuretic action of the milk has led to an increase in the flow of urine, and thus the loss of albumin, although really the same, has undergone a percentage reduction. Attention should never be directed solely to the state of the urine, the general appearance of the patient and the body weight should be carefully observed. An increase in dropsy frequently shows itself by a rapid increase in the body weight. The milk diet is not recommended as a routine measure for long-continued periods in chronic renal disease.

28. **Diet in the Tropics.**—Simpson claims that the majority of individuals who persist in high living in the tropics pay for it sooner or later in some form of intestinal disorder, colitis, disease of the liver or nervous affection. Apart from the excessive quantity of meat and alcohol which is partaken of in the tropics, but which is being gradually diminished, the principal defect in the present-day diet of the tropics are the soups and the rather frequent recourse to long iced drinks. The latter are often taken between meals, and are an active factor in the production of constipation. Both lead to dyspepsia and not infrequently to dilatation of the stomach, which is one of the more common affections from which residents in the tropics suffer. Dilated stomach, in those who have returned from the tropics, is a more common cause of indisposition than is generally recognized. It is always well to examine for this condition in a patient with yellowish conjunctiva and furred tongue, and who complains of nausea, dyspepsia, languor and palpitation. In such a case it is probably combined with enlargement of the liver. The effects of overindulgence in alcohol are very marked in the tropics. Neurasthenia, depression and incapacity for mental work in the tropics not uncommonly owe their origin to a consumption of alcohol which would be without any corresponding effect in a more temperate climate.

Presse Médicale, Paris.

30 (XIV, No. 19.) Traitement des écrasements des doigts (crushed fingers). P. Reclus.
31 Tuberculosis in Dust-Producing Trades—Poussières et tuberculose. L. Landouzy.
32 *Sur une réaction colorante des acides gras (of fat acids). G. Jacobson.
33 La constipation des neurasthéniques traitée par l'électrothérapie. P. Hartenberg.
34 (No. 20.) L'osmose et la cryoscopie. Hallion.
35 *L'oralité dans l'enseignement (oral teaching). P. Bonnier.
36 (No. 21.) *De la séméiologie des lochies. C. Jeannin.
37 *Continuous Drainage of Stomach in Treatment of Acute Peritonitis.—Le drainage continu de l'estomac. P. Cavaillon.
38 (No. 22.) Esophagotomie interne esophagoscopique dans le traitement des rétrécissements cicatriciels de l'esophage. L. Sencert.
39 *Les indications qui doit remplir le régime alimentaire dans la lithiase biliaire. E. Dufourt.
40 (No. 23.) Des paresthésies pharyngées. M. Boulay.
41 *Méthode de réduction en position génu-cubitale de l'utérus rétroversé et rétrofléchi (knee elbow position for reduction of backward displacement). F. Jayle.
42 *La réaction des urines au bleu de methylène dans la fièvre typhoïde. E. Cousin and S. Costa. Id. Gandy. (Commenced in No. 21.)
43 (No. 24.) *Le treponema pallidum de Schaudinn. A. Sézary.
44 *Les gants de caoutchouc (rubber gloves). M. Chaput.
45 (No. 25.) *Les faux gastropathes (imaginary stomach affections). J. Déjérine and E. Gauckler.
46 L'herpes retro-pharyngien. G. Mahu.

32. **Staining Reaction of Fat Acids.**—Jacobson has found that fat acids have an affinity for a weak solution of some basic anilin dye while the neutral fats repel it. His studies were made principally with the stools of nurslings. The fat acids took the diluted Ziehl stain while the neutral fats were unaffected by it and the soaps were only very slightly stained.

35. **Oral Teaching.**—Bonnier trains teachers to throw out their voice and to let the resonance of the hall speak for them with the minimum of effort on their part, instead of straining to emit a volume of sound sufficient for all to hear. He also describes means to test the hearing capacity of pupils. Relative deafness can be detected with what he calls "paracoustics at a distance," that is, the application on the leg of a tuning fork with 100 vibrations. The sound ear does not hear its vibrations, but they are transmitted through the bones to the paracoustic ear. Perception of them indicates relative deafness. In case of an affection of the labyrinth, the blindfolded child deviates to that side in walking, or the pupil on that side is sometimes dilated or reacts sluggishly to light. If the child is told to shut his eyes while the lids are held from closing, the eyeballs turn upward with dissociated binocular movements, possibly turning toward the side affected. These signs can be sought by the teacher, and will prove that many children whose inattention has annoyed the teacher are in reality subject to some unsuspected ear affection.

36. **Clinical Significance of the Lochia.**—As streptococcus puerperal infection is generally regarded as more serious than others, bacteriologic examination of the lochia may prove important for the prognosis and also for treatment. A fecal-like odor suggests that the infection is due to colon bacilli; such cases are usually in very constipated women. If the lochial discharge is blackish or like coffee grounds this does not necessarily mean infection, and nothing should be allowed which might cause infection. Undue persistence of the lochia should suggest relics of the placenta; if not promptly removed they may lead to the formation of a chorioepithelioma.

37. **Continuous Drainage of the Stomach in Acute Peritonitis.**—Jaboulay's prosector at Lyons describes some experiences with prompt gastrostomy and rubber-tube drainage of the stomach in cases of acute peritonitis with a predominance of gastric symptoms. This technic, he asserts, is superior in its results to enterostomy and lavage of the stomach, and it is simpler and easier than the latter in these conditions. Systematic drainage of the stomach should not supplant drainage of the peritoneum, but it is liable to prove an invaluable adjuvant. Even in the gravest cases it may be indicated as a palliative measure, freeing the patients from their distressing dyspnea, vomiting and hiccough. In a case thus treated the patient was a young man with symptoms of ileus and acute peritonitis. The distended stomach protruded and there was almost constant vomiting and hiccough. About 5 cm. of the stomach was drawn out and turned down over one side of the laparotomy wound. A sound 1 cm. in diameter

was introduced and fastened with a thread to the abdomen and a rubber tube for siphonage attached. Gases escaped at once and as much as a quart of bile; the abdomen subsided and the relief was great. Two more quarts of greenish fluid flowed through the tube during the next twenty-four hours, when the patient could be fed through the mouth. During the half-hour or hour after eating the drain tube was closed with a clamp. The pulse grew slower and the patient was entirely cured in a week. In a case of appendiceal peritonitis the distension of the stomach, the cardiorespiratory symptoms, the disturbances in the intestinal circulation and all the other symptoms yielded rapidly to gastrostomy and continuous drainage of the stomach. This procedure is also indicated in cases of postoperative dilatation of the stomach. The distension of the stomach hampers the adjacent organs and is the cause of many of the symptoms. When the accumulated gases and fluids are evacuated by continuous drainage, stools and flatus pass the anus by the second day without artificial aid, and the cure is soon complete.

39. **Diet in Case of Tendency to Gallstones.**—Dufourt enumerates the conditions for success in warding off gallstone trouble as: 1, To avoid or to attenuate infection of the biliary passages; 2, to keep the composition of the bile normal; 3, to maintain a copious secretion of bile, and, 4, to insure its constant excretion. The meals should be frequent and light, with a lunch in the afternoon. The extractives have the property of promoting the passage of the bile into the duodenum and consequently a glass of consommé or something of the kind should be taken just before retiring. A little milk might be sipped if one wakes in the night. By thus preventing the stomach being long empty at a time, the contraction of the gall bladder is promoted and the circulation of the bile kept active. In case of recurring colics, while waiting to decide the question of surgical interference, small amounts of milk, at short intervals, answer the indications and the result may decide against operative measures. The carbohydrates have little effect on the secretion of bile and should be reduced to the minimum. Fats favor its excretion and should be taken in the most digestible form, as cream, butter or yolks of eggs. Lard, oil and fat meats are too indigestible. Fruits and vegetables are advised. Condiments and stimulants should be avoided. The tolerance of the patient is the chief consideration in all these measures. The theoretical bases for them all are reviewed in detail.

41. **Reduction in Knee-Elbow Position of Retrodisplacement of Uterus.**—The thigh should be perpendicular to the resistant plane on which the patient kneels in the knee-elbow position. The vagina or rectum, or both, are then opened to admit air, which distends them and aids in mobilizing the uterus. Jayle gives eight illustrations showing the technic with which the uterus can then be swung into place with one or two fingers introduced into the vagina or rectum, the thumb braced against the pubic bone or buttocks. Pressure is applied gently five or six times, when the uterus generally slides into place.

42. **Methylene Blue Reaction of Typhoid Urine.**—This has been called the Russo test. Gandy and others write that the reaction is by no means a specific phenomenon. It occurs as an ordinary physical reaction in any urine.

43. **Schaudinn's Treponema Pallidum.**—Sézary's article reports positive findings, but is chiefly remarkable for the bibliography on the subject appended. It fills 16 inches of very fine type, printed solid, the oldest title being scarcely more than a year old; nearly all countries are represented. In his own research he was impressed with the great frequency of positive findings in contagious syphilitic lesions and the absence of treponema in ordinary lesions, also with its possible absence or at least its rarity with present methods of investigation in a certain number of specific manifestations. Schaudinn has never claimed that the *Treponema pallidum* is the causal agent of syphilis, but Metchnikoff and Fraenkel have not hesitated to affirm it. They base this conclusion on its almost constant presence in the primary and secondary accessible or inaccessible manifestations of syphilis, acquired and inherited. Another argument is that the *Treponema pallidum* has not been found in man or animals, well or sick, who are free from syphilitic infection. Positive findings confirm the existence of syphilis, but negative findings should not disprove it, as the parasite is not invariably encountered.

44. **Rubber Gloves.**—The special features of Chaput's gloves are the shortness and width of the fingers. He keeps always three sets on hand, one for aseptic work, one for septic and one for postmortem work. He boils each set in a separate box with perforated tray. The wrist of the glove is turned back an inch or so to take hold of the gloves in pulling them on. A strip of gauze dressing is wound around the forearm over the gauntlet and tucked in above the wrist. After the operation the gloves are washed on the hands and drawn off carefully by an assistant. They can be kept in boiled water, renewed every day, or in a weak solution of sodium borate which keeps indefinitely. During the operation the gloves can be washed on the hands.

45. **"False Gastropaths."**—The French speak often of false "urinaires," false "génitaux" and false "cardiaques," meaning persons who imagine they have some affection of the urinary or genital apparatus or of the heart. To this list Déjérine adds the false "gastropaths", the persons with purely psychic or nervous forms of stomach troubles. They range from simple dyspepsia in neurasthenics to phobias and pseudo-gastropathies. The stomach phobias are generally secondary to neurasthenia, but not always. Typical cases are described of this and of the false functional stomach disturbances, of which about 200 come under observation at the Salpêtrière dispensary during the year, out of the 1,500 patients, while an average of 40 severer cases requiring hospital treatment are received. In many instances these false gastropathies are the direct result of therapeutics; the physician treats some transient digestive disturbance and this attracts attention to the stomach. In a later article the diagnosis and treatment are to be described.

Archiv f. Gynäkologie, Berlin.

47 (LXXVII, No. 2.) Ueber Missbildungen mit Störungen des Körper-Verschlusses (disturbances in the closure of the body). F. Kermauner.
48 Altersbestimmung menschlicher Embryonen und Föten auf Grund von Messungen und von Daten der Anamnese (determination of age of embryos and fetus). P. Michaelis.
49 Ueber die Histologie der Adenocarcinome im Uterus-Fundus. Offergeld.
50 Ueber Duplicitas tubæ Fallopii und ihre entwickelungsgeschichtliche Genese. H. Bab.
51 *Ueber schmerzlose Geburtswehen (painless labor). B. Wolff.
52 Ueber die interstitielle Tubar-Gravidität auf Grund von 3 selbst-beobachteten Fällen. A. Wagner.
53 "Intra-abdominelle Druck-Verhaltnisse" (conditions of pressure). K. Hörmann.

51. **Painless Labor.**—Wolff's patient was a healthy i-para of 28 who was delivered of a living child without labor pains. There was an entire lack of abdominal pressing. When the head was in the pelvic outlet all the uterine contractions ceased, and extraction was completed with forceps. He reviews the cases of painless labor found in the literature and discusses the cause.

Archiv f. klinische Chirurgie, Berlin.

Last indexed, page 622.

54 (LXXVIII, No. 1.) Zur Behandlung der Perityphilitis und ihrer Folgeerkrankungen (appendicitis and its consequences). O. Nordmann.
55 *Ueber eine neue Methode der Muskel-Transplantation. Hilde brandt.
56 Die Echinokokken-Krankheit in der Krim (in the Crimea). A. T. Kablukoff.
57 Multiple Echinokokken der Bauchhöhle (in abdominal cavity). Id.
58 Zur Kenntniss der sogen. Myositis ossificans traumatica. M. Strauss.
59 Die Function der Niere nach durchgemachtem Sectionsschnitt (functional activity after slitting the kidney). G. Ekehorn.
60 Blutige Behandlung der Quer-Fractur der Patella. P. Beckenhelmer.
61 (No. 2.) *Bedeutung des Traumas für die Entstehung der Carcinome und Sarcome an der Hand des Materials der chirurgischen Klinik zu Jena. W. Röpke
62 Zur Behandlung der Perityphilitis und deren Folgeerkrankungen. Nordman (Commenced in No. 1.)
63 Frequency of Congenital Hernial Sacs.—Ueber die Haufigkeit angeborener Bruchsäcke. T. Hansen.
64 *Lung Complications After Abdominal Operations.—Ueber Lungencomplicationen nach Bauchoperationen. E. Bibergeil (Körte's service, Berlin).
65 Die Epityphilitis in Wechselbeziehung zu ihren bakteriellen Erregern. E. Holm.
66 Erfahrungen über Adrenalin und Cocain Adrenalin-Anästhesie. F. W. Sikemeier (Rotgans' clinic, Amsterdam).

55. **Transplantation of Muscles.**—Hildebrandt's experimental and clinical experience has demonstrated that it is possible to transplant a muscle when it has been almost entirely excluded from the circulation. It will heal in place and retain its functions under the condition that its nerve, that is, its connection with its center, and the blood vessels supplying this nerve, are retained intact. Most of the muscle fibers die when cut off from their circulation, but the power of regeneration is retained and the muscle grows again. The importance of sparing the nerve or nerves of the muscle is emphasized by this work. The pure ischemia of the muscle, induced by transplantation under the circumstance described, caused remarkable laxness, instead of the contraction noticed when the ischemia was induced by constriction of the muscle.

61. **Trauma in Connection with Cancer Formation.**—Röpke reviews the surgical material at Jena, stating that he found 19 out of 800 cases of carcinoma in which there was a possible causal connection with a single trauma, while the connection with the chronic trauma was evident in a large number. In 189 cases of sarcoma he found 28 cases in which chronic trauma and 19 in which a single trauma might possibly have played a part in the etiology. The connection between the trauma and the neoplasm was unmistakable in all these cases, and such connection might easily have existed in other cases in which the details were not so well known. Chronic trauma seems to play a larger part in the origin of carcinoma, while single trauma is apparently responsible in more cases of sarcoma. In 44 cases in Röpke's experience carcinoma was known in other members of the family. In 5 cases a sarcoma developed in the descendants. In only 2 of the cases of neoplasms developing after a single trauma was there a history of family antecedents.

64. **Lung Complications After Abdominal Operations.**—Bibergeil's statistics include 3,909 abdominal operations, with 283 cases of consecutive lung complications. Pneumonia was observed in 135, that is, in 3.5 per cent. of the total number of cases; embolism of the lungs in 12, that is, 3 per cent. (all fatal); infarcts in 9, 2 per cent., with one death; bronchitis in 83, that is, in 2.1 per cent.; abscess in the lungs in 12; pleuritis in 15, and empyema in 13. Study of the conditions suggests that lobular pneumonia after a laparotomy is due to autoinfection (aspiration during the anesthesia). The principal factor in the postoperative pulmonary affection is the effort of the patient to spare himself pain in the sutured abdominal wound. To keep it from hurting he breathes as lightly as possible and refrains from expectorating. Supplementary factors are the debilitated condition of the organism as a whole and the depressing influence of the operation. Lobar pneumonia is due to infection from pneumococci, either present as saprophytes or aspirated with mucus from the mouth. In regard to prophylaxis, Bibergeil reiterates the advisability of curing any respiratory affection before attempting an abdominal operation. The mouth and throat must be carefully cleaned, and lavage of the stomach should precede any operation on the digestive tract. The head of the patient should be turned on the side so that mucus accumulating in the mouth can flow out readily. The patient should be carefully protected against getting chilled. If the abdominal cavity or parts thereof are rinsed, the fluid should be heated to 113 or 122 F. The exposed parts of the abdomen must be protected against loss of heat by hot compresses. After the operation the position of the patient should be frequently changed, and he should be instructed to breathe deep, regardless of any pain in the wound. Constricting bandages should be avoided, and the patient should be made to sit up and get out of bed at the earliest possible moment. The action of the heart should be carefully supervised. At the same time, he adds, the most scrupulous application of all these measures does not positively insure against the development of a postoperative lung affection.

Deutsches Archiv f. klinische Medizin, Berlin.

Last indexed, page 919.

67 (LXXXVI, Nos. 1-3, Lichtheim Festschrift) Beitrag zur kortikalen Lokalisation des Centrums für die konjugierten Seitwärtsbewegungen der Augen und des Kopfes (side movements of eyes and head). Sahli.

68 *Ueber Früh- und Fehl-Diagnosen der akuten Perityphlitis. Korach.

69 *Ueber Sonden-Palpation der Bronchial-Drüsen bei gewissen leichtesten Formen der Tuberkulose (palpation of glands). E. Neisser.

70 *Ueber Hämaturie als Initial-Symptom primärer Nierentuberkulose (of kidneys). S. Askanazy.

71 *Zur Diagnose der Verlagerung und Verkümmerung einer Niere (displacement of kidney). Th. Cohn.

72 *Beriberi und Skorbut. M. Schubert.

73 *Zur Klinik der Cholelithiasis. R. Kuckein.

74 Zur Kenntnis der Barlow'schen Krankheit. G. Freund.

75 *Beitrag zur pathologischen Anatomie congenitalen Taubstummheit (deaf-mutism). W. Lindt.

76 Zur Lehre vom Ertrinkungstode (death from drowning). E. Margulies.

77 Entstehung und Wesen des Fötors bei Ozäna. O. Frese.

78 *Zur Kenntnis der Aneurysmen der basalen Hirnarterien und der bei den intrameningealen Apoplexien auftretenden Veränderungen der Cerebrospinalflüssigkeit. W. Rindfleisch.

79 *Beitrag zur Tuberkulose des Magens (of stomach). M. Alexander.

80 Untersuchungen ueber die in den Ergüssen und in der serösen Auskleidung der menschlichen Pleura- und Peritonealhöhle bei Entzündungen vorkommenden Zellen (cells in effusions). J. Lossen.

81 *Ueber familiäres Vorkommen plötzlicher Todesfälle bedingt durch Status lymphaticus (sudden death). E. Hedinger.

82 Ein unter dem Bilde eines operablen Rückenmarkstumors verlaufender Fall von Meningomyelitis chronica (simulating operable tumor in spinal cord). G. Joachim.

83 Zur Frage der Pathogenität der Flagellaten. J. Biland.

84 Ueber Blutvergiftungen durch Sesamöl (intoxication from probably adulterated sesame oil). E. Rautenberg.

85 Hypertrophische Leberzirrhose und Korsakowsche Psychose mit Ausgang in Heilung (cirrhosis of liver, etc.; recovery). A. Rosenfeld.

86 Zur Kenntnis des Resorptions-Vermögens der normalen und kranken Haut und der Vaginalschleimhaut für verschiedene Salbengrundlagen und für wässerige Lösungen (mit spezieller Berücksichtigung der Jodkalisalbe) (absorption of salves, etc., by skin and vagina). Ch. Fauconnet.

87 Ueber Nephroparatyphus mit Schwefelwasserstoffbildung im Urin (sulphuretted hydrogen in urine). C. Klieneberger.

88 Ueber einen Fall von Myelitis transversa mit Muskelwogen und eigentümlichen Veränderungen der elektrischen Reaktion (anomalies in electric reactions). J. Frohmann.

68. **Mistaken Diagnoses of Appendicitis.**—In one of the 3 cases reported by Korach, diffuse miliary tuberculosis simulated the clinical picture of acute appendicitis. In another case the symptoms were due to a sarcoma in the mesentery which had perforated into the ileum. In the third patient nothing was found at the time of the operation or discovered later to explain the symptoms simulating acute appendicitis.

69. **Sound Palpation of Tuberculous Bronchial Glands.**—Neisser reports a second series of 34 patients who gave a decided positive reaction to tuberculin and had a number of mild subjective symptoms suggesting the possibility of tuberculosis, such as pains in the back and chest, "stitches" between the shoulders, and occasionally slight night sweats. The lungs seemed to be intact and actual tuberculosis has not developed in any of them, although under examination for two or three years or more. None of them had sanatorium treatment. He believes that the trouble in such cases is isolated tuberculous infection of the bronchial glands. It can be differentiated by the pain elicited by pressure or succussion on the spine, but a still more reliable and accurate measure is by palpation by means of a sound introduced into the esophagus. He uses a medium-sized pharyngeal catheter, the openings plugged with paraffin. About 10 cm. above the tip a long slit is made in the catheter. Another, very fine, stiff catheter, with a very small hole cut opposite the slit in the larger one, is slipped inside the large catheter, and a rubber condom drawn over both. A thread is tied around the whole above and another below the opening. Air is then blown into the catheters through an ear syringe; it inflates the rubber bag opposite the slit and hole in the catheters. The sound has been used on 250 individuals, the results showing that it causes no pain under ordinary conditions, while in the presence of a tuberculous process in the glands there is slight but characteristic painfulness when the rubber bag is inflated. The positive findings were almost invariably accompanied by pain on pressure of the spine. He remarks that if the term were not so hideous he would suggest calling this condition "tuberculosoid" to distinguish it from incipient tuberculosis. None of the patients to date have developed clinical tuberculosis. In his experience this condition was observed most frequently in families in which one member had typical tuberculosis.

70. **Hematuria as Initial Symptom of Primary Tuberculosis of the Kidneys.**—Askanazy has observed 5 cases in which profuse hematuria was the first symptom to call attention to a tuberculous process in the kidney. He has found a number of

such cases reported in the literature. The hematuria generally comes on suddenly in apparently healthy persons. In some cases it preceded the development of the clinical process by eight years, by 13 years in Newman's case, and by 16 years in one of his own cases. The hematuria recurred several times in the interval in some cases. In others the typical symptoms followed close on the hematuria. As spontaneous healing of a tuberculous process in the kidneys is generally possible, an early diagnosis does not necessarily call for immediate nephrectomy. Hygienic-dietetic measures and internal medication may arrest the process. The initial hematuria is thus of the greatest importance, as it allows an early and presumptive diagnosis and prompt treatment. He remarks in conclusion that in tuberculous affections the permanent integrity of the sound mate can never be guaranteed, so that nephrectomy should not be done without due consideration.

71. **Diagnosis of Displacement and Deformity of One Kidney.**—Cohn describes the various diagnostic means by whose aid he was able to differentiate a rudimentary dystopic kidney with obstructed ureter in a ii-para of 31, and a displaced and abnormally small kidney in a nullipara of 27.

72. **Beriberi and Scorbutus.**—Schubert argues that we must distinguish between sea scorbutus and land scorbutus and Barlow's disease. Sea scorbutus is a chronic meat poisoning, land scorbutus is an infectious disease. True tropical beriberi is an infectious disease, while the affection described under this name in England and elsewhere is a polyneuritis of unknown origin, possibly due to arsenic intoxication. Ship beriberi, he states, is an intoxication with rotten salt meat.

73. **Clinical Study of Cholelithiasis.**—Kuckein analyzes the primary symptoms and other features in 174 cases of gallstones. One patient had a serious recurrence after operative treatment. Kehr does not admit the possibility of recurrence after thorough operative treatment, but Körte has observed 6 cases of such recurrence among 313 patients on whom he had operated.

75. **Pathologic Anatomy of Congenital Deafmutism.**—Lindt had oportunity to examine the petrous portion of the temporal bone in a young woman who had been a deaf mute from infancy. The external and middle ear was normal, but both labyrinths showed anomalies evidently of embryonal origin, atrophy of the spiral ganglion, cochlear nerve, and ramus sacularis, with entire absence of the papilla basilaris on both sides, and with marked aplasia of the Corti organ and other findings similar to those of the 10 similar cases that have been examined histologically. The article is illustrated.

78. **Aneurism of the Basilar Arteries.**—Rindfleisch describes 3 cases and expatiates on the valuable information that may be obtained from study of the cerebrospinal fluid in various meningeal affections. The findings should be weighed with all the accompanying symptoms, but when this is done they may throw unexpected light into obscure places. The tint of the fluid is instructive. In case of hemorrhage into the subarachnoid space the red corpuscles rapidly disappear and are all gone by the end of a few weeks. The hemoglobin imparts a reddish-yellow or red tint to the fluid, which gradually turns brown in the course of a week or so. Hemoglobin can still be detected in the fluid at this stage, but later the findings are negative, the hemoglobin having become transformed, he states, into a brown derivate, probably hematoidin. The urine of the patient generally contains urobilin at this stage. Finally the hemoglobin entirely vanishes and the fluid becomes limpid once more. A large part of the blood pigment is deposited in the arachnoid as hemosiderin. He calls the tinting of the fluid "xanthochromia." Diffuse distribution of the blood throughout the subarachnoid space causes several characteristic symptoms, among them the signs of congestion in the fundus of the eye, explainable by an infarct in the sheath of the optic nerve. This "blood tamponing" of the sheath of the optic nerve was evident at the autopsy in his case. The diffusion of the blood through the subarachnoid space was the cause of the spinal irritation evidenced by the stiffness of the back and neck, the local and radiating pains, the Kernig sign etc. The vanishing of the knee jerks was probably the result of the stretching of the roots. In one of the cases described the spinal symptoms persisted for a long time and, in conjunction with oculomotor paralysis, aroused the suspicion of a diffuse chronic meningeal affection of an inflammatory or neoplastic nature. The symptoms were of a general cerebral nature, accompanied by focal symptoms pointing to the base of the brain, and diffuse spinal symptoms. The lesion proved to be an aneurism of the right posterior communicating artery.

79. **Tuberculosis of Stomach.**—Alexander describes a case in which the symptoms suggested cancer of the pylorus. The patient was a man of 40, who weighed 152 pounds. After an attack of "influenza" nine months before he began to experience pain on pressure and discomfort in the stomach region about 45 minutes after eating, especially after solid food, with eructations but no vomiting. There was constipation and much weakness. In the fasting stomach, after a test supper, a coffee-dregs residue was found containing lactic acid; traces of blood were revealed by the guaiac test, with lactic acid bacilli and fungi. The pylorus was found encircled with a flat granular ulceration. After the resection the patient had pneumonia, and died on the eighteenth day. No tubercle bacilli were found in the stomach lesion nor in the sputum, but the presence of giant cells in the pyloric tumor indicated a tuberculous origin. The process was isolated, as no other signs of tuberculosis could be detected elsewhere. This makes the fourth case of the kind on record. The patients in each instance had been operated on under the diagnosis of cancer.

81. **Lymphatism and Sudden Deaths.**—Hedinger reports the sudden death of five children in one family before they reached the age of 6. The autopsy of the last child, a girl nearly 6, showed marked hyperplasia of the lymphatic system, including the thymus, hyperplasia of Peyer's patches and of the solitary follicles in the digestive tract, enlarged tonsils and spleen and eccentric hypertrophy of the left ventricle. The little girl had had a sudden brief attack of loss of consciousness and extreme cyanosis six months before the fatal repetition of the same symptoms. The parents are closely related, and the father is an alcoholic. Other children in the family seem to be growing up in health, with less tendency to the lymphatic diathesis. Hedinger quotes from the literature, showing that sudden death in cases of hypertrophy of the thymus was recorded as early as 1614 by F. Plater, in respect to three children in one family. [An editorial in THE JOURNAL for February 10 discussed this subject, and Hedinger has recently published the details of the sudden death of 15 newborn infants with hypertrophic thymus. The *Presse Médicale* for February 3 describes the recent acquittal by the French courts of a woman named Weber who was accused of having caused the deaths of her three children and five of her nephews. The experts, Brouardel and Thoinot, reported that they had not been able to discover any evidences of poison nor of strangulation. Their opinion was that the eight deaths were due to natural causes. This opinion was sustained by the appearance of Hedinger's article about the same time calling attention to the occurence of series of such deaths in certain families. In Perrin's case, cited by Hedinger, the nine sons died between the ages of 3 and 9, after a few days of slight depression, with sudden coma and death in less than an hour. The two girls in this family are alive and in good health to date. Morquio has observed a similar case at Montevideo. Four boys in a family presented symptoms suggesting the Stokes-Adams' syndrome at about the fourth year, and died suddenly between the ages of 8 and 10. A fifth boy is now showing the same symptoms, but the girls in this family are healthy.—ED.]

Gazzeta degli Ospedali, Milan.

Last indexed, page 1326.

89 (XXVI, No. 152.) Trattamento chirurgico di alcune deformazioni congenite della porzione terminale del tubo digerente (malformations of rectum and anus). G. Miomi.
90 (No. 154.) *El Riflusso nella gastroenterostomia ad Y del Roux (reflux). A. Ferrari.
91 Terapia dell' igroma della borsa prerotulea. G. Stella.
92 L'emoantiossina nella gravide e nelle puerpere. G. de Paoli.
93 *Studio delle affezioni polmonari di origine gastrointestinale. E. Gugnoni.
94 (XXVII, No. 1.) Le misure nella tecnica radiotherapica. A. G. Gramegna.
95 (No. 2.) L'elettroterapia nel campo medico. G. Viana

96 (No. 3.) *Complicazioni nervose dell'ileotifo nell' infanzia. G. B. Allaria.
97 *Significato clinico degli edemi. T. Silvestri.
98 *Influenza dell' anemia adrenalinica sul decorso delle infezioni locali (influence on course of local infections). D. Maragliano.
99 Ricerche sperimentali sulla sifilide. F. Simonelli and I. Bandi.

90. **Reflux After Gastroenterostomy.**—Ferrari has observed reflux in 2 out of 11 cases after a gastroenterostomy, according to Roux's Y technic. He assumes that there must have been antiperistalsis as the amount of fluid in the stomach was so large. No method of gastroenterostomy absolutely prevents reflux as antiperistalsis is liable with all, and as the new pylorus has no sphincter to close and to prevent backward passage of the enteric juices into the stomach. The reflux ceased in his cases after lavage of the stomach, done twice, and setting the patient upright in bed. This changed the position of the loop of intestine from horizontal to vertical, which he thinks aided in suppressing the reflux and vomiting.

93. **Pulmonary Affection of Gastrointestinal Origin.**—Gugnoni describes the case of a healthy young soldier who had been indisposed for several days with slight headache, loss of appetite and constipation, with fever. He was given castor oil and in a day or so the fever subsided but the patient still felt sick and the tongue was much coated. He remained in bed and suddenly the fever lighted up again, this time accompanied by cough and expectoration. A focus of subcrepitant râles was discovered, but no bronchial souffle, and merely a slight dullness in the middle and lower lobe of one lung. Gugnoni reviews some similar cases on record in which a gastrointestinal affection became suddenly complicated with lung symptoms; the majority were in children. On the basis of gastrointestinal origin of the lung trouble he treated it exclusively with calomel and an intestinal disinfectant, with a strict milk diet and irrigation of the intestine with a 1 per 1,000 solution of salicylic acid. In less than four days the patient was entirely cured.

96. **Nervous Complications of Typhoid in Children.**—Allaria reports 2 cases of meningitic symptoms, aphasia and right spastic hemiplegia following typhoid in children of 6. Both soon recovered completely. In a third case, in a child of 8, bronchopneumonia followed typhoid, and this was followed by fatal meningo-typhoid. In the fourth case the typhoid and pneumonia were followed by tetany and recovery. The meningitic symptoms improved in the second case after lumbar puncture, but this did not prevent the focus symptoms from developing. Allaria's experience confirms the observation of others that when an epidemic of cerebrospinal meningitis is prevailing, typhoid in children is more liable to assume the meningitic type.

97. **Clinical Significance of Edema.**—Silvestri does not regard edema as merely a symptom. He accepts it as a defensive reaction on the part of the organism. The toxins are washed out by the edema, and in this Nature points the way for us to follow. The reaction may be out of all proportion to the inciting cause, and may need restriction. By evacuating the ascitic acid fluid and by intestinal catharsis we are able to remove a large quantity of toxins which Nature has conveniently collected for us in this form.

98. **Influence of Adrenalin on Course of Local Infections.**—Maragliano describes experiments on dogs and rabbits which demonstrated that injection of adrenalin with a culture of moderately virulent staphylococci enhanced the virulence of the germs. When injected in or near a phlegmon or other local inflammatory process, the latter was unmistakably aggravated. He used a 1 to 2,000 solution. This is stronger than used on man, and the drainage of local processes in the clinic also acts against this aggravating tendency of the adrenalin. In a dental case the injection of 1 c.c. of a solution of cocain and adrenalin for perialveolitis was followed by necrosis in the soft parts that had been injected, and fatal pyemia followed. Observation of a few similar cases, supplemented by the results of experimental research, have convinced him that the use of adrenalin should be limited to sound tissues, and that its effect on diseased or inflamed tissues is liable to be disastrous.

Riforma Medica, Naples.

Last indexed, page 1150.

100 (XXII, No. 1.) Studio degli adamantinoma del mascellare inferiore (of lower jaw). F. Ferrero.
101 Esiste nel sangue dei dementi precoci una forma speciale di globulo rosso (red corpuscles in insane)? G. Muggia.
102 (No. 2.) *Action of Radium on Rabic Virus.—Sull'azione del radio sul virus rabbico. A. Calabrese.
103 (No. 3.) Sulla tubercolosi polmonare. Augusto Murri (Bologna). (Commenced in No. 1.)
104 *Ancora sul fenomeno Cardarelli-Oliver e sui segni di aderenza dell' aneurisma aortico con i tubi aeri (adherence to air passages). S. Pansini. (Commenced in No. 1.)
105 (No. 4.) La reazione ammoniacale di Ehrlich. E. U. Fittipaldi.
106 *Study of Fever.—Una questione fondamentale per la dottrina della febbre. L. Giuffré.
107 (No. 5.) *Contributo alla cura del prolasso rettale (rectal prolapse). G. Serafini (Turin).
108 *Le enterorragie occulte nell' infezione tifica. D. Romani.
109 *Diazo-reazione e indicanuria negli alienati di mente (in mental affections). O. Pini and G. Benini.
110 Sull' azione dell'adrenalina nel morbo maculoso di Werlhof (success of adrenalin in case of purpura hemorrhagica). A. Cianni.

102. **Action of Radium on Virus of Rabies.**—Calabrese reviews the work done by Tizzoni and Relins in this line—recently summarized in these columns—and describes extensive research of his own. His results were negative.

104. **Tracheal Tugging, Etc., in Case of Aneurism.**—Pansini gives an illustrated report of 3 cases of aneurism of the thoracic aorta and 1 of innominate artery, with the postmortem findings. He discusses the cases from the standpoint of the diagnosis of adherence to the air passages, especially with reference to tracheal tugging and to the imminence of perforation into the air passages. In conclusion he remarks that any indications of compression of the air passages should suggest the possibility of an aneurism, and that every aneurism should be investigated for signs of adhesion to the air passages. When the signs suggest this, the patients should be supervised, kept quiet and coughing should be prevented at any cost. In case of hemoptysis the patients must stay in bed, be kept on a light diet and under the influence of morphin. By these means the physician may be able to ward off the fatal termination for days and weeks and, in any event, to make a correct diagnosis.

106. **Theory in Regard to Fever.**—Giuffré discusses whether or not the regulation of heat, its production, absorption and excretion, occur alike in health and in febrile conditions. He argues that the regulation of the heat is not the function of organs specially devoted to this task. It is a function secondary to the function of nutrition, and occurs independently of the nerves to some extent, the rest is exercised by all the nerves, not by any special thermoregulating center.

107. **Rectal Prolapse.**—Serafini reviews the history of treatment of severe rectal prolapse and reports a couple of cases in which he operated. His first patient was a child of 6, with long persisting, rebellious prolapse. Typical resection by Mikulicz' technic was followed by early recurrence of the prolapse and death in collapse nine days after the operation. The autopsy showed general ptosis of the viscera, relaxation of the tissues and abnormal length of the parts suspending the sigmoid flexure and descending colon. Death from exhaustion followed in some cases in Mikulicz' own experience with the operation. The second patient was a young man and the prolapse was less extensive. He was treated with ligature according to Weinlechner's technic and the results were eminently satisfactory, surpassing all expectations. The cure was rapid, complete and lasting.

108. **Invisible Hemorrhages in Typhoid.**—Romani relates in detail the results of hundreds of examinations of the stools in 50 cases of typhoid, with application of the Weber or Rossel test, for occult hemorrhage. His experience demonstrates that intestinal hemorrhage in the course of typhoid fever is always preceded by a few days during which traces of blood can be detected in the feces by these delicate tests. If symptoms of peritonitis develop during the course of typhoid fever, the presence of invisible traces of blood in the stools is a sign that the peritonitis is due to perforation rather than to propagation. Administration of a purgative to a constipated typhoid patient may be followed by the appearance of traces of blood in the stools, which may prove to be the prelude to

extensive intestinal hemorrhage. Systematic examination for traces of blood in typhoid stools may furnish a criterion for the progress of healing. The presence of blood indicates that the ulcerative process is not entirely healed. Serafini found traces of blood sometimes in the milder cases, while some of the severest ran their course without the appearance of blood in the stools. If the feces had been in contact with a metal vessel or tube, the typical reaction to the Weber test occurred at once, but it soon subsided, the feces later not showing the typical findings unless in case of the presence of blood. This phenomenon is due to the presence of iron. It causes the typical reaction at once, but as the iron then unites with the sulphuretted hydrogen in the feces to form an insoluble compound, the typical reaction to the test then vanishes as the iron is thus taken up. Experimental addition of traces of iron always induced this phenomenon. The Weber aloin test is more sensitive than the Rossel guaiac technic. The Weber test was found positive at a dilution of blood, 1 to 13,000, even when the spectroscope gave negative findings. The findings were positive in 16 out of his 50 patients. In 4 only for one day; in 2 on two days; in 3 on three days, and in the others from four to fifteen times. In 7 patients with negative findings the disease was exceptionally severe, in 3 moderate, and in 4 very mild. The traces of blood appeared in the stools 48 hours before an extensive hemorrhage in 1 case, and four days before in 3 other cases, including 1 in which the patient, a robust young man, was apparently convalescing at the nineteenth day of a very mild typhoid fever. Positive findings in regard to invisible blood in the stools were encountered generally in the third or fourth week, never in the first, but 7 times in the second week, 20 times in the third, 18 times in the fourth, 8 times in the fifth, and once in the seventh week. He ascribes the invisible hemorrhage to the dropping off of the scab. (For technic of tests see THE JOURNAL, page 1566, vol. xli, 1903.) z

109. Diazo Reaction and Indicanuria in Mental Affections.—The findings were negative in the majority of the large number of tests reported. Both the diazo reaction and the indicanuria are signs of profound organic intoxication, Pini remarks, and occur, generally speaking, in cases in which such might be expected. The article gives a historical summary of the subject, with bibliography.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SCIENTIFIC MEMOIRS BY OFFICERS OF THE MEDICAL AND SANITARY DEPARTMENTS of the Government of India. Issued under the Authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India, 1906. No. 22. Mediterranean Fever in India; Isolation of the Micrococcus Melitensis. By Capt. G. Lamb, M.D., I.M.S., and Assistant Surgeon M. Kesava Pal, M.B., C.M. Price, 10 annas or 1s.

MATERIA MEDICA AND THERAPEUTICS. An Introduction to the Rational Treatment of Disease by J. M. Bruce, M.A., LL.D., Fellow of the Royal College of Physicians of London, etc. New and Enlarged Edition. Revised Throughout, and Containing the Indian and Colonial Addendum to the British Pharmacopeia. Cloth. Pp. 632. Price, $4.75 net. Chicago: W. T. Keener & Co., 1906.

MEDIZINAL-BERICHTE Ueber die Deutschen Schutzgebiete Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, Neu-Guinea, Karolinen, Marshall Inseln u. Samoa für das Jahr 1903-04 Herausgegeben von der Kolonial-Abteilung des Auswärtigen Amts. Cloth. Pp. 303. Price, 7.50 marks. Berlin: Ernst Siegfried Mittler und Sohn, 1905.

OUTLINES OF APPLIED ANATOMY, with Special Reference to Surface Landmarks. By R. J. A. Berry, M.D., F.R.C.S.E., F.R.S.E., Professor of Anatomy in the University of Melbourne, with forty-six Illustrations. Cloth. Pp. 244. Price, $2.50. Philadelphia: J. B. Lippincott Company, 1906.

A MANUAL OF MEDICAL TREATMENT OR CLINICAL THERAPEUTICS. By J. H. Yeo, M.D., F.R.C.P., Emeritus Professor of Medicine in King's College, London. Fourteenth Edition. Twenty-second Thousand. Vol. I-II. Cloth. Pp. 696 and 818. Price, $5.00 net. Chicago: W. T. Keener & Co., 1906.

ENIGMAS OF PSYCHICAL RESEARCH. By J. H. Hyslop, Ph.D., LL.D., Formerly Professor of Ethics and Logic in Columbia University, Author of "Science and a Future Life," etc. Cloth. Pp. 425. Price, $1.50 net. Boston, Mass.: Herbert B. Turner & Co., 1906.

ST. LUKE'S HOME AND HOSPITAL in the City of Utica, for the Year ending Oct. 1, 1905, with the names of officers for the ensuing Year. Paper. Pp. 40. Utica, N. Y.: L. C. Childs & Son.

PHYSIOLOGY OF THE NERVOUS SYSTEM. By J. P. Morat. Authorized English Edition. Translated and Edited by H. W. Syers, M.A., M.D., Physician to the Great Northern Central Hospital. With 263 Illustrations. Cloth. Pp. 680. Price, $7.50 net. Chicago: W. T. Keener & Co., 1906.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. Edited by the Secretary, Twenty-seventh Annual Meeting, held at Buffalo, New York, August 23-25, 1904. Vol. XXVI. Paper. Pp. 304. Lancaster, Pa.: The New Era Printing Company, 1905.

REPORT OF THE MINISTER OF AGRICULTURE For the Dominion of Canada For the Year Ended Oct. 31, 1905. Paper. Pp. 61. Printed by Order of Parliament. Ottawa: Printed by S. E. Dawson, Printer to the King's Most Excellent Majesty, 1906.

TWENTY-NINTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY, 1905, and Annual Report of the Bureau of Vital Statistics. Cloth. Pp. 396. Trenton, N. J.: The John L. Murphy Publishing Co., 1906.

HAND-BOOK OF GASOLINE AUTOMOBILES for the Information of the Public Who Are Interested in Their Manufacture and Use, 1906. Paper. Pp. 141. Price 10 cents. New York: Association of Licensed Automobile Manufacturers.

TRANSACTIONS OF THE NATIONAL ASSOCIATION OF UNITED STATES PENSION EXAMINING SURGEONS. Fourth Annual Meeting, Chicago, Ill., July 7-8, 1905. Vol. III. Cloth. Pp. 93. Rochester, N. Y.: Published by the Association, 1905.

FRACTURE DU POIGNET EN SENS INVERSE, Ou Fracture Par Hyperflexion De L'Extrémité Inférieure du Radius. Par. Fr. Guermonprez (Avec 12 figures dans le texte). Paper. Pp. 56. Paris: Jules Rousset, 1906.

FORTIETH ANNUAL REPORT OF ST. FRANCIS HOSPITAL, New York, under the Charge of the Sisters of the Poor of St. Francis, for the year 1905. Paper. Pp. 16.

MANHATTAN EYE, EAR AND THROAT HOSPITAL, Thirty-sixth Annual Report of the Board of Directors, New York. Paper. Pp. 29.

THIRTEENTH ANNUAL REPORT AND BY-LAWS OF THE THRALL HOSPITAL, Grove Street, Middletown, N. Y., 1905. Paper. Pp. 41.

THIRTY-NINTH ANNUAL REPORT Saint Luke's Hospital, St. Louis, 1905. Paper. Pp. 88.

NEW PATENTS.

Recent patents of interest to physicians:

$15510. Inhaler. Raymond C. Coburn, Upper Sandusky, Ohio.
$15682. Truss. Alfred C. Cooke, Rockyhill, Conn.
$15414. Atomizer or nebulizer. Frank C. Dorment, Kalamazoo, Mich.
$15426. Bandage. Virginia E. Hardee, Beaumont, Texas.
$15715. Invalid bed, cot, and table. Anton Kruger, Allegheny, Pa.
$15608. Pellet-coating machine. Joseph Mangin, Sigourney, Iowa.
$15366. Water-bag or bottle. Thomas W. Miller, Akron, Ohio.
$15360. Antiseptic. Alonzo C. Morse, Shelby, Ohio.
$15859. Retinoscope. August L. Palls, Upland, Cal.
$15863. Variable-voltage electric transformer for cautery and diagnostic work. Earl H. Rollinson, Albany, N. Y.
$15761. Glycerin still. Charles Sudre, Paris, France.
$15878. Fourchette. Hippolyte Texier, Watchung, N. J.
$15886. Affixing plastics. Edward J. Winslow, Chicago.
$16547. Making medicines. Robert Gross, Rastenberg, Thuringia, Germany.
$16026. Surgical clip. Albert J. Meier, Kirkwood, Mo.
$16365. Vibrator for massage treatment. William Olson, Mount Vernon, N. Y.
$16503. Stopper for hot-water bags. Geo. H. F. Schrader, Greenburg, N. Y.
$16506. Massage instrument. Wm. G. Shelton, St. Louis.
$16048. Invalid bed. John W. Summers, Mattoon, Ill.
$16959. Sterilizing and antiseptic case with stand for surgical instruments. Pasquale Briganti, New York.
$17046. Oculometroscope. Harry L. Cowan and R. Abel, Woburn, Mass.
$16564. Hand-gear vibratory massaging machine. Jay V. Daniels, London, England.
$17054. Syringe. Daniel G. Gay, Freewater, Oregon.
$16656. Atomizer. Isaac Q. Garnee, Butler, N. J.
$16866. Artificial limb. Hjalmar Leonard, Chicago.
$16867. Surgical truss. James Leverone, New London, Conn.
$16743. Ammonia vaporizer. John Robson, Wallsend, England.
$16745. Vehicle for cripples. Frank Rowley, Battle Creek, Mich.
$16746. Medical appliance. Flora S. Russell, Boston.
$16748. Massage appliance. Edward S. Saighman, Chicago.
$16888. Suspensory. John R. Sommerville, Washington, D. C.
$16697 Combined lift and bed-support for invalids. Henry Williams, Finchley Road, County of Middlesex, England.
$17622. Apparatus for filling capsules. C. C. Boykin, Norfolk, Va.
$17159. Making dialkylbarbituric acids. Max Conrad, Aschaffenburg, Germany.
$17231. Coin controlled atomizer. Pierce A. Dunn Green Island, N. Y.
$17166. Disinfecting compound. Joseph W. England, Philadelphia.
$17703. Apparatus for moving invalids. Louisa Garaghty, Chester, Pa.
$17708. Inhaler. George F. Hartz, Durant, Iowa.
$17495. Pasteurizer. Charles H. Lowe, Lakewood, Ohio.
$17340. Artificial limb. Rudolf Rosenkranz, Pittsburg, Pa.
$17600. Truss for hernia. Wm. H. Washburn, Portland, Ore.
$17288. Medical appliance. James P. Whedon, Chicago.
$17951. Invalid bed attachment. Irwin Baker, Latty, Ohio.
$17351. Invalid robe. Emma Clark, New Orleans.
$17852. Pill and tablet counting machine. Seward A. Hasseltine, Springfield, Mo.
$17973. Uterine dilator. Caspar F. Hausmann, St. Gall, Switzerland.
$17785. Joint for artificial limbs. Charles F. Kritsch, Washington, D. C.
$18123. Mask for administering anesthetics. Albert Rousseau, Bordeaux, France.
$19046. Device for facilitating the removal of bandages. Ord. P. Williams, Sanders, Ky.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVI. CHICAGO, ILLINOIS, MAY 19, 1906. No. 20.

Original Articles

ANATOMY OF THE INGUINAL REGION.*

T. CASEY WITHERSPOON, M.D.

Professor of Operative and Clinical Surgery, St. Louis University.

ST. LOUIS.

This paper is limited to the region of the inguinal canal and enters into a description of such portions of the various structures as are directly included in this territory.

The observations are based on some fifty dissections. They have been compared with the descriptions in Toldt, Spalteholz, Morris, Gray, Deaver and Zukerkandel and found to be somewhat at variance with them. These textbooks were selected as representative of the anatomies usually referred to. A few monographs on the subject have been consulted with the same results. It would carry the paper to too great lengths to discuss these differences in connection with the findings here presented. This lack of uniformity of description has led to the publication of the present paper, in which are included such original drawings as are necessary to illustrate the text.

Fig. 1.—Abdominal wall face of a cast of the inner face of the inguinal region after removal of the peritoneal coat. (About 3/5 natural size.)

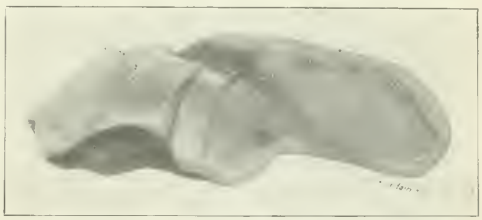


Fig. 2.—Pelvic wall face of cast, showing: A, Hesselbach's ligament and deep epigastric vessels; B, Superior ligament of the bladder; C, spermatic vessels; D, vas defereus. (About 3/5 natural size.)

The old nomenclature has been adhered to, although the terms often convey false ideas because of the anatomic misconceptions at the time they were adopted.

The structures which enter into the region under consideration are peritoneum, extraperitoneal fatty tissue, three muscles, four fascias and the so-called conjoined tendon.

The peritoneum had lost all evidence of the processus vaginalis in the adult subjects. Three full-term fetuses were dissected, in two of which it was widely patulous, in the third closed. Judging from statistics of inguinal hernia, it is safe to say that the processus vaginalis of the peritoneum closes in the very large majority of persons during the first four years of life.

The extraperitoneal fatty tissue is continued into the inguinal canal at all ages. It is a most important structure in its relationship to the inguinal canal. Surrounding the cord loosely attached to it, this tissue affords an easy passageway between the abdominal cavity and the scrotum, with but the thin layer of peritoneum acting as a barrier to a potentially open route. The large blood vessels and the spermatic cord are surrounded by this tissue in their course within the abdomen. In their immediate neighborhood the fatty tissue is thickened by bundles of rather dense connective tissue, which serves as a support. In the median direction from the internal abdominal opening it can be separated into three distinct layers; one passes posterior to the bladder, the other two anterior to it. These three layers encase the bladder in a fatty envelope of triangular outline, the base below and the apex above. In the fetus the hypogastric arteries and in the adult the remains of these arteries mark the lateral borders of this triangle. Lateral to this triangle the fatty tissue can not be divided into separate layers. Separation from the abdominal wall can be readily accomplished in this region except in the line of union of the iliac and transversalis fascias (Fig. 4, J). Immediately surrounding the deep epigastric arteries and lateral to them are a number of dense connective tissue bundles which are developed in the fatty tissue and which extend from the inner margin of the internal abdominal opening to the outer end of the semi-lunar fold of Douglas. The fatty tissue is closely connected with the outer-lying transversalis fascia in the route of these bundles, and together they give the appearance of a ligament which is known as Hesselbach's ligament (Fig. 3, B). This structure plays a most important part in rendering the inner end of the inguinal canal patulous during increased intra-abdominal tension. The resistance offered by it, in conjunction with the deep epigastric vessels, is well shown in Figures 1 and 2, reproduced from a cast made by taking an impression of the abdominal surface of the inguinal region with the peritoneum removed. The best quality of dental wax, made soft by heat, was tightly pressed against the region of the inguinal canal. The deep epigastric vessels and Hesselbach's ligament stand out well from the wall under

* From the Anatomical Laboratory of St. Louis University.

this pressure and make a depression in the wax (Fig. 1, A). The portion of the cast median to the depression (A), that is, in the direction toward B, corresponds with that area of the abdominal wall formed chiefly by the conjoined tendon. The portion of the cast lateral to the depression corresponds to the wall between the internal abdominal ring and the anterior superior spine of the ilium. This latter area is muscular. These two planes are seen to be anterior to Hesselbach's ligament, which stands out from the wall a centimeter or more when the wall is subjected to pressure. There is not much discrepancy between the outer and inner plane in the normal individual, but when the muscle area, which forms the wall represented by the outer plane, weakens through disease or age this discrepancy becomes marked. This difference in the two planes readily explains how hernias form, the bowel slipping anterior to Hesselbach's ligament and down the inguinal canal. Figure 2 represents the under side of the cast. The vas deferens (D) and spermatic vessels (C) are easily traced. The indenture in the cast between these two structures is made by the brim of the true pelvis.

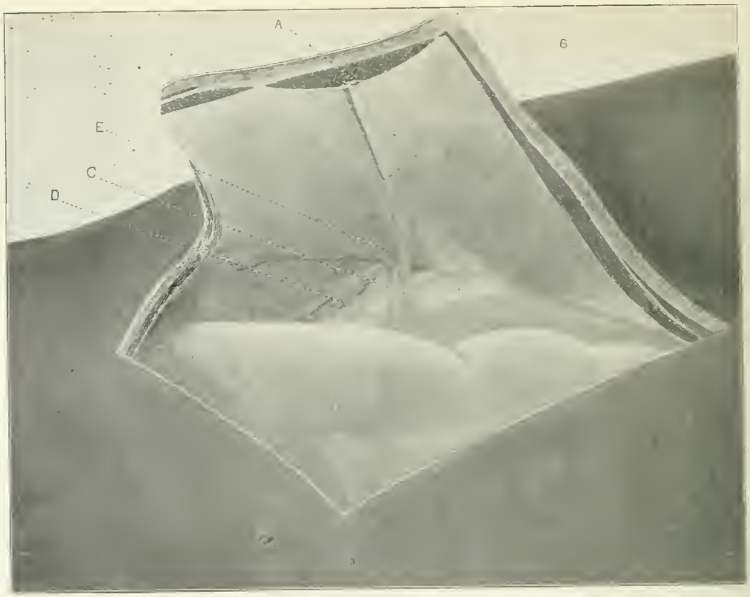


Fig. 3.—Dissection of the inner aspect of the inguinal region after removal of the peritoneum, showing: A, Deep epigastric vessels; B, Hesselbach's ligament; C, vas deferens; D, spermatic vessels; E, internal abdominal opening.

Fig. 4.—Dissection of the inner aspect of the inguinal region after removal of the fatty tissue, and portions of the iliac vessels and transversalis fascia, showing: F, Fibers out of the deep crural arch passing medianward; G, fibrous bundles which come out of the true pelvis and pass on to the abdominal wall; H, femoral opening; I, opening of the inguinal canal in the fascia transversalis; J, line of union of the iliac and the transversalis fascias; K, Cooper's ligament.

The inguinal canal has an oblique course through the abdominal wall from within outward, passing medianward and downward. The fatty tissue passes into and through the canal in an almost straight line from the lateral border of its inner end. From the median border it passes into the canal sharply flexed, giving to the median edge of the internal abdominal opening a falciform appearance. The internal abdominal opening of the inguinal canal, which is situated in this fatty tissue, is shown in Figure 3, E. It is found just above the junction of the anterior abdominal wall and the floor of the false pelvis.

The transversalis fascia is shown in Figure 4; from it a

window has been cut internal to the large vessels to show the outer-lying structures of that area. This fascia is not of uniform thickness, being quite thin in the region under the transversalis muscle, but thick enough in the region caudad of the arching lower fibers of that muscle to offer material support to the abdominal wall. Behind the rectus it is again thin and hard to distinguish from the fatty tissue. The transversalis fascia unites with the iliac fascia just internal to the origin of the transversalis muscle. It leaves the iliac fascia lateral to the iliac vessels and arches over them to the ilio-pectineal line median to the vessels. The intramuscular fascias between the transversalis muscle and internal oblique and between the internal and external obliques join the transversalis fascia in this arch to form the deep crural arch (Fig. 7, E). The transversalis fascia in this plate has been removed from the muscle and cut off along the edge of the arch to allow a view of other structures. Figure 4 gives the internal view of the arch. A number of dense fibers are developed in the deep crural arch which pass medianward across and internal to the lower portion of the conjoined tendon. These serve to hold the lower portion of the tendon in line with the abdominal wall. The transversalis fascia forms the second layer covering the spermatic cord. The description of the manner in which the fatty tissue enters the inguinal canal is applicable to this fascia.

External to the pelvic and iliac fascias and extending on to the abdominal wall to become

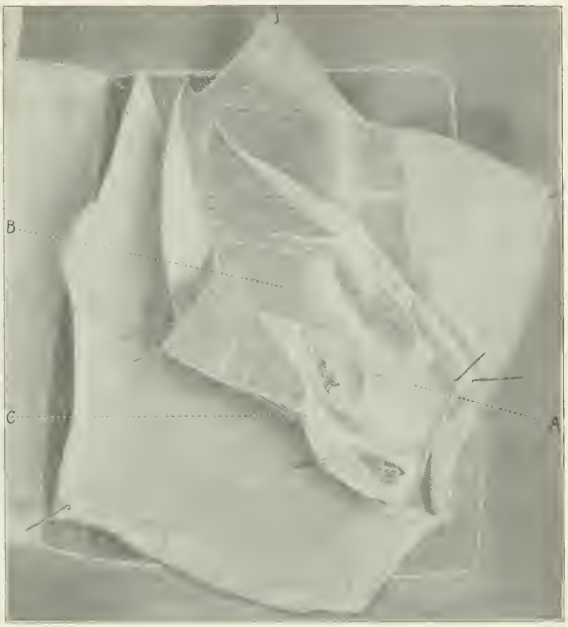


Fig. 5.—Dissection of right inguinal region showing: A, Fibers coming out of the pelvis in this subject constituting the whole of the so-called conjoined tendon; B, transversalis muscle; C, cremasteric muscle and fascia from the internal oblique.

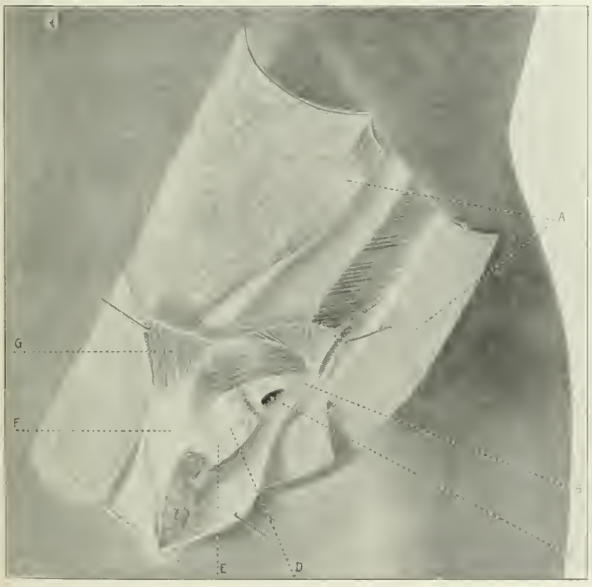


Fig. 6.—Dissection of left inguinal region, showing: A, External oblique muscle; B, cremasteric muscle from transversalis; C, internal opening of the inguinal canal through the transversalis fascia; D, transversalis fascia; E, fibers out of the pelvis which pass into the so-called conjoined tendon; F, aponeurosis of the transversalis muscle; G, internal oblique.

a part of the structure known as the conjoined tendon are a series of dense connective tissue fibers, quite ligamentous in appearance (Fig. 4, K, G). The lateral half of this structure (K), lying chiefly under and lateral to the iliac vessels, is known as Cooper's ligament. The fibers are lost below (caudad) under the femoral sheath posterior to the vessels as they pass into the thigh. The median half of this ligamentous structure is found beneath the pelvic fascia caudad of the ilio-pectineal line. It passes out of the pelvis over the ilio-pectineal line and on to the abdominal wall median to the iliac vessels (Fig. 4, G). In certain persons this structure constitutes the whole of the conjoined tendon, and in all more or less of the fibers enter it. Figure 5, A, represents the appearance of the area when the conjoined tendon is wholly formed by this structure. The median edge of the femoral opening is bordered by its lateral fibers (Fig. 4, H). In conjunction with the deep crural arch these cause constriction of the neck of a femoral hernia. In Figure 4 there is seen a triangular area lying between these ligamentous fibers (G), the deep crural arch (F) and the rectus muscle. This area is usually formed by the aponeurosis of the transversalis muscle, helping to form the conjoined tendon. Between G and Hesselbach's ligament the space is strengthened by the transversalis fascia. The median or lowermost fibers of

this structure course along the ilio-pectineal line to meet, behind the symphysis pubis, similar fibers from the other side.

The transversalis muscle takes origin from the continuation of the iliac fascia, caudad of the line of union of this fascia with the transversalis fascia. The extent of origin of the muscle from the iliac fascia varies, not only in different subjects, but also in the same subject on the two sides (Figs. 5 and 6). This may be stated to be under or within the outer half to one-third of Poupart's ligament. The lowermost fibers of this muscle take an inward and downward course over the internal abdominal ring to find insertion into the ilio-pectineal line for a variable extent. This insertion varies from a fraction of an inch to an inch and more. In some subjects, however, the muscle passes to the body of the pubis or even only to the linea alba, finding no bony insertion at all (Fig. 5). That portion of the muscle finding insertion into the ilio-pectineal line is usually described as forming with the internal oblique the conjoined tendon. This is never true. The transversalis (Fig. 6, F) becomes quite aponeurotic just before its insertion into the ilio-pectineal line and lies anterior to the ligamentous structure (Fig. 6, E). In Figure 6 the anatomic arrangement of the conjoined tendon is quite normal. The transversalis fascia is indicated by D, a window being cut out of it to show the relation of the deep epigastric vessels to this area. The ligamentous structure is indicated by E and the transversalis muscle by F. Figure 5 shows the other extreme of the relationship of the structures forming the conjoined tendon. It is here made up of only the ligamentous structure. Figure 7 shows an anatomic condition in which the transversalis muscle forms a distinct, compact aponeurotic lamina and finds insertion into the whole of the ilio-pectineal line median to the iliac vessels. Very few of the ligamentous fibers entered the conjoined tendon in this subject, but passed almost wholly behind the insertion of the rectus to unite with similar fibers from the opposite side.

Fig. 7.—Further dissection of the left inguinal region, showing: A, External oblique; B, internal oblique; C, transversalis; D, cremasteric muscle and fascia; E, deep crural arch; F, aponeurosis of the transversalis; G, rectus muscle; H, peritoneum covering the intestines.

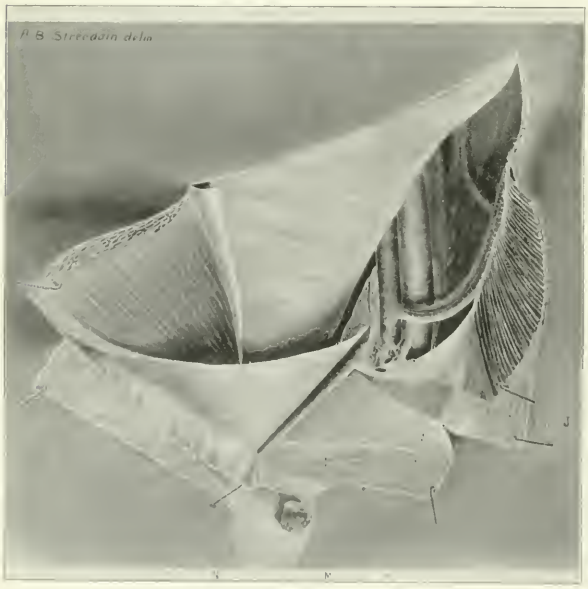


Fig. 8.—Further dissection of the left inguinal region with greater portion of cremasteric fascia, removed, showing: I, Femoral sheath; K, fascia lata; L, Gimbernat's ligament; M, cremasteric fascia; N, external oblique.

The cremaster muscle consists at times of a few of the lowest fibers of the transversalis having been carried into the scrotum by the descending testis (Fig. 6, B). Its fibers returning upward are inserted into the ilio-pectineal line just lateral to the insertion of the transversalis proper. The musculus interfovealaris consists of a few bundles derived from the posterior surface of the transversalis muscle and is inserted into the transversalis fascia just median to the internal abdominal opening. It is not constant.

The lower fibers of the internal oblique take origin from the iliac fascia parallel to and caudad of that of the transversalis muscle. The extent of this origin may be said

to be under the outer half of Poupart's ligament. The course of the fibers is from without inward and downward, but not quite so caudad in direction as that taken by the transversalis muscle. The internal oblique is, as a rule, quite closely connected with Poupart's ligament through its anterior fascia. Likewise some of the fibers of the internal oblique in many subjects become aponeurotic and enter Poupart's ligament near its middle. This secures a close union of the two muscles. The lowest fibers of the muscle are inserted into the pubic bone below and anterior to the transversalis muscle. These arch over the cord in front of the internal abdominal opening. The variableness of this feature has been repeatedly mentioned by different anatomists. From the lower edge of the internal oblique its fascias pass downward, cover the spermatic cord, surround the cremaster muscle and find insertion into the ilio-pectineal line. This fascia constitutes the cremasteric fascia and helps to form the deep crural arch anterior to the iliac vessels (Fig. 7, D, and Fig. 8, M).

The features to be mentioned in connection with the external oblique chiefly concern Poupart's-Gimbernat's ligament. Gimbernat's ligament (Fig. 8, L) is a most variable structure, consisting of those fibers of Poupart's ligament which turn posterior and medianward to be inserted into the ilio-pectineal line parallel with and external to the insertion of the cremaster fascia. These fibers are closely attached to the fascia lata of the thigh. Its inner border lies parallel with the deep crural arch, external to it. The intercolumnar fibers are derived from the lowest fibers of the external iliac aponeurosis. They cross the external abdominal opening at its apex and spread out in a fan-shape manner. Some of these aponeurotic fibers can be traced into the fascia lata below Poupart's ligament and are inserted into the ilio-pectineal line under Gimbernat's ligament. They lie within the falciform process of the fascia lata lateral to the cribriform fascia. The external abdominal opening in the external oblique is covered in by the peri-aponeurosis (deep fascia of the abdomen). This peri-aponeurosis is pushed forward as a covering of the cord, and the opening which the cord apparently makes is known as the external abdominal ring. This ring is strengthened by a number of dense fibers, which encircle its upper and outer border.

The ilio-inguinal nerve lies anterior to the cord as it passes out of the abdominal wall and the genito-crural posterior or internal to it. This latter nerve enters the canal median to the internal abdominal opening and passes through the canal anterior to the cremasteric fascia and posterior to the cord.

SUMMARY.

The internal abdominal opening is located in the extraperitoneal fatty tissue.

Hesselbach's ligament is formed by fibrous bundles which connect the outer end of the semi-lunar fold of Douglas with the inner margin of the internal abdominal opening. These bundles are developed chiefly in the extraperitoneal fatty tissue. Along the route of these bundles there exists between the fatty tissue and the transversalis fascia a close union. During intra-abdominal pressure, Hesselbach's ligament, due to its resistance, helps to increase the size of the internal abdominal opening.

In the inguinal area the internal surface of the abdominal wall is divided into two planes by Hesselbach's ligament. Normally, the plane lateral to this ligament is only slightly anterior to the plane median to the ligament. When the muscles of the lateral plane are weakened by disease or are enfeebled through advanced age intra-abdominal tension greatly exaggerates this difference. As the internal abdominal opening is situated at the junction of these two planes, the greater the difference the more patulous the opening and the greater the possibility of escape of a viscus through the opening.

The transversalis fascia does not join Poupart's ligament at any point.

The deep crural arch is formed by the junction of the transversalis and cremasteric fascias in the arch in front of the external iliac vessels as they pass into the thigh. The free (posterior) edge of Gimbernat's ligament is just external to and parallel with the deep crural arch.

The fibrous bundles which pass out of the pelvis into the so-called conjoined tendon give to the abdominal wall its chief strength internal (posterior) to the inguinal canal. The aponeurosis of the transversalis muscle strengthens the wall just internal (posterior) to the external abdominal ring.

The base of the so-called conjoined tendon, the lateral margin of which is formed by the fibrous bundles which enter the tendon from out of the pelvis, is the constricting agent in femoral hernia. A Spanish surgeon, Gimbernat, attributed this agency to the structure which has since been given his name.

The so-called conjoined tendon was in no instance formed by a union of fibers from the internal oblique and transversalis muscles in the subjects dissected. Judging from the usual anatomic arrangement this union seems quite impossible.

The external abdominal opening is situated between the dividing fibers of the aponeurosis of the external oblique muscle. The external abdominal ring is situated in the periaponeurosis which covers the external abdominal opening.

FATIGUE.*

FREDERIC S. LEE.

Professor of Physiology, Columbia University.

NEW YORK.

It is a striking principle of biology that the activity of living substance tends to inhibit its further activity. Carried to a moderate degree, this inhibition leads to the self-preservation of the living substance—to an extreme degree, to its self-destruction. The characteristics of this inhibition, its accompanying phenomena within the organism and the causes that lead to it form the subject of the present lecture. Fatigue is a comprehensive term, comprising, in its simple form, the functional state of the organism and its constituent parts after activity. Lying on the border zone where the physiologic and the pathologic meet, it reaches far into both and obscures the division lines between them. When present in slight or moderate degree, it limits achievement, but is easily recovered from; when excessive or an accompaniment of disease, it forms a serious condition, which, if in man, the medical practitioner must meet and combat.

Fatigue is a universal biologic phenomenon. The activity, however slight, of living substance, wherever found, reveals its beginnings. While it has been studied chiefly in the muscular and nervous tissues, it has been pointed out elsewhere, and our recognition of its signs

* Address delivered before the Harvey Society, New York, Feb. 3, 1906.

is certain of being extended by future study. The chief sign is, in a word, depression—depression of irritability, wherein a given stimulus calls forth a response of less intensity than before; and depression of the total capacity for work, whatever the intensity of the stimulus; its early stages may show, however, a temporary heightened irritability and an apparent, but not real, heightened capacity for work. There are many other signs, recognizable in individual cases.

Owing to the unequalled opportunity of applying to the study of muscular activity the exact methods of the physicist and the chemist, the phenomena of muscular fatigue are known more exactly than those of other tissues. Leaving aside for the present the chemical as causative of the physical phenomena, we may consider the latter first—and here the pioneer was Helmholtz,[1] to whom more than to any other in its long history scientific medicine is indebted for exactness in method. Let us assume a voluntary muscle, of either a cold-blooded or a warm-blooded animal, either a lower animal or man, either within the body with the circulation and nervous supply intact or (though this has not yet actually been proved for man) removed from the body. Let such a muscle be stimulated by a series of single artificial stimuli of equal intensity, regularly repeated and applied either directly to the muscle itself or indirectly through the mediation of the nerve, and let the muscle

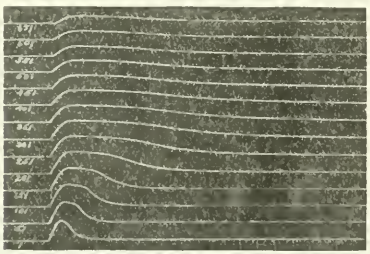


Fig. 1.—Record of fatigue of the frog's gastrocnemius muscle. The numbers signify contractions.

perform mechanical work, such as the lifting of a certain load. We may then observe the following phenomena (Fig. 1): The degree of shortening of the muscle during each contraction increases for a considerable time; hence the height to which the load is lifted or the amount of work that is performed is gradually increased. Later the reverse occurs—the shortening decreases, reaches its original amount, falls below it, and disappears slowly and very gradually, the muscle becoming incapable of performing further work unless a stronger stimulus or a lighter load be employed, or a period of rest be allowed to intervene, or the chemical composition of the muscle be artificially altered in a suitable manner. The irritability of the muscle at first increases and later decreases; its total capacity for performing work begins to decrease at the beginning of the experiment.

At the same time that the spatial changes are going on the time relations of the muscular action are also changing. Here, strangely enough, the muscle of the cold-blooded animal behaves differently from that of the warm-blooded one. In the former, almost from the first, the duration of each twitch begins to lengthen, the whole physiologic process slows, and this reaches large proportions even while the irritability is increasing. The slowing continues for a long time, and only when signs of exhaustion begin to appear does each twitch require a somewhat shortened time for its performance, although the duration is still far greater than at first. The slowing in activity is shared by both contraction and relaxation, but chiefly by the latter, although the degree in which each participates in the phenomenon differs in the muscles of different species. By reason of its existence, by reason of the continuance of the muscle in a contracted state, the organ is less capable of performing work, and, unless the successive stimulations occur at rather long intervals, it usually passes sooner or later into a pronounced and persistent contracture, from which it gives feeble twitches.

In warm-blooded animals, man included, there appears to be no analogous slowing of either contraction or relaxation, while in the later stages of the experiment, when the lifting power is feeble, there may even be a quickening. I have been able to show that this marked difference between the two groups of animals is independent of temperature; it persists even when the cold-blooded muscle is warmed to mammalian temperature, and the warm-blooded muscle is cooled, and it constitutes a real physiologic difference.[2] The cold-blooded or poikilothermal animal, which lacks a nervous mechanism that regulates its body temperature, represents the more primitive type, from which the homothermal condition has become evolved. It is not surprising that in the course of this evolution the muscle has dispensed with a process which distinctly hampers its activity, and has thus become a much more efficient machine.

Here a word of caution may be necessary. Do not jump to the conclusion, because of what I have said, that the voluntary contraction of a man's muscle, when fatigued, is fully as rapid as or more rapid than when in a fresh condition. We know from experience that this is not so, that we work more slowly when weary. I have been dealing so far with single contractions, not with voluntary contractions. The latter are always tetani, composed of single contractions fused together. The duration of the single contraction of the human muscle, which can be obtained only by an artificial stimulus, is not lengthened in fatigue; the voluntary contraction may be slowed. More than twenty years ago the Italian physiologist, Mosso,[3] devised the important apparatus called the ergograph, and by its means began the long series of studies of voluntary contractions in man, which has made the Turin school famous, and has immeasurably extended our knowledge of fatigue in living human beings. Treves,[4] one of Mosso's own pupils, Franz,[5] Hough,[6] Storey[7] and others have shown that the original form of the ergograph is defective, and have so perfected the instrument that it bids fair to become an important clinical aid in diagnosis. An ergographic record usually consists of a series of curves of momentary contractions, at regular intervals, of certain finger muscles, either one or more, a known weight being lifted or a spring of known tension being stretched. Such a record exhibits in fatigue a gradual diminution

1. Helmholtz: Müller's Arch. f. Anat., Phys. u. wiss Med., 1850, p. 324; 1852, p. 212.

2. Lee: Arch. f. d. ges. Phys., 1905, vol. cx, p. 400.

3. Mosso: Arch. f. Anat. u. Phys., Phys. Abth., 1890, p. 89; Arch. Ital. de biol., 1890, vol. xiii, p. 123; "La fatica," Milano, 1891; English translation: "Fatigue," New York, 1904.

4. Treves: Arch. Ital. de biol., 1898, vol. xxix, p. 157, vol. xxx, p. 1; Arch. f. d. ges. Phys., 1899, vol. lxxviii, p. 163; 1901, vol. lxxxviii, p. 7.

5. Franz: Amer. Jour. of Phys., 1900, vol. iv, p. 348.

6. Hough: Amer. Jour. of Phys., 1901, vol. v, p. 240.

7. Storey: Amer. Jour. of Phys., 1903, vol. viii, p. 355.

of the lifting power of the muscle, the rate and regularity of the diminution varying with individuals. The single contractions of human muscle, induced by artificial stimuli, directly applied, may be recorded by the same instrument.

In the course of the experiments that I have quoted, it may justly be said that fatigue begins with the first contraction—the muscle is less capable of work by reason of this contraction. It is convenient to set apart the late stages as the period of exhaustion, although the beginning of such a period is not marked by distinctive physical phenomena. If at any stage the muscle be irrigated by a stream of fresh blood, by Ringer's solution, or even by an indifferent isotonic solution of sodium chlorid, or, what is less efficient, although in some degree effective, if it be allowed simply to rest, the physiologic pendulum tends to swing back, the irritability and the total capacity for work increase, and physiologically the organ is pushed back to an earlier stage of the fatigue process; in other words, the muscle is in some degree restored.

The term, muscular fatigue, requires a word of explanation, for it has been shown by various investigators, including Waller,[8] Abelous,[9] Santesson,[10] and Joteyko,[11] that when muscle in fatigue ceases to respond to stimuli sent to it through its nerve, it is still capable of contracting on direct stimulation. Their inference from this fact is that the motor nerve endings within the muscle are the first part of the mechanism to succumb. This inference is probably justified; the nerve endings are probably more susceptible to fatigue than the protoplasm of the muscle cells, and hence the muscle protoplasm itself within the organism probably never reaches the stage of profound exhaustion.

In the study of fatigue the nervous system has occupied a curious position. For while it has long been thought that the brain and spinal cord are, of all parts of the organism, the most susceptible to fatigue, it has been known for more than twenty years that the nerve fiber is extremely resistant. Although Bernstein,[12] in 1877, concluded that the nerve is less easily fatigued than the muscle, the Russian physiologist, Wedenskii,[13] was the first to suggest, in 1884, that the nerve may possibly perform its functions altogether without fatigue. Wedenskii stimulated the nerve at a distant point and blocked the passage of the nervous impulses before they reached the muscle by keeping an intermediate portion of the nerve in a constant state of anelectrotonus by means of a polarizing current. At the end of six hours he found the nerve still as active as at first. Maschek[14] obtained a similar result at the end of twelve hours, and, moreover, confirmed the general discovery by substituting ether for a polarizing current. Brodie and Halliburton[15] blocked the impulses by cooling the splanchnic. Bowditch[16] and Durig[17] by using curare with a motor nerve, Szana[18] by atropin with the cardiac vagus, Lambert[19] also by atropin with the secretory fibers of the chorda tympani, while Wedenskii,[13] Hering,[20] Maschek,[14] Edes[21] and Waller[8] studied the current of action during long periods of activity.

These investigators, working on both cold-blooded and warm-blooded animals, agree in maintaining the extreme resistance of the nerve to fatigue, their experiments continuing in some cases for fifteen hours. Objections have been brought against some of them, notably those in which the persistence of the negative variation is the indicator of indefatigability, it having been shown that negative variation persists even after other evidences of vital action have ceased; nevertheless, the main principle is well supported. Garten[22] seems, however, to have demonstrated some measure of fatigue in the non-medullated fibers of the olfactory nerve of the fish: by means of continued stimulation, the current of action, as measured by the capillary electrometer, becomes diminished in extent; after a pause it increases. Fröhlich,[23] too, believes that he has demonstrated fatigue in a frog's nerve when in partial asphyxiation. On the chemical side no decisive experimental evidence has been brought forward. While Funke[24] and Ranke[25] find acid in nerves after strong general tetanus, there is no proof that it is formed *in situ*. Waller's[26] inference of the production of carbon dioxid in tetanized nerves from the similarity of their electrical phenomena to those of nerves artificially placed under the influence of carbon dioxid seems hardly justified from such slight evidence. Our conclusion must, therefore, be, and with this we shall find general agreement, that, while nerve is probably not indefatigable, it is extremely resistant to fatigue in comparison with other peripheral tissues, and that, although nerve protoplasm is not an exception to the general biologic law according to which katabolic changes occur during activity, such changes here present are either minute or, more probably, are at once compensated for by adequate anabolism.

But the demonstrated resistance of nerve fibers could not easily shake the firm belief of physiologists in the extreme susceptibility to fatigue of the central portion of the nervous system. It has long gone without dispute that in prolonged activity the brain and spinal cord succumb first, and thus the exhaustion of the peripheral tissues is prevented. The nerve center has been compared to the fuse of an electric circuit, the burning out of which protects the muscle from grievous injury. By most upholders of the neuron theory central fatigue has been referred to the bodies of the nerve cells, in which Hodge,[27] Vas,[28] Mann,[29] Lugaro,[30] Eve,[31] and others have demonstrated histologic changes after activity. According to most of these observers, moderate activity

8. Waller: Brit. Med. Jour., 1885, vol. ii, p. 135; 1886, vol. ii, p. 101; Brain, 1891, vol. xiv, p. 179; Jour. of Phys., 1896, vol. xix, p. 1.

9. Abelous: Arch. de physiol., 1893, p. 437.

10. Santesson: Skand. Arch. f. Phys., 1895, vol. v, p. 394.

11. Joteyko: "Fatigue," Richet's Dict. de Phys., Paris, 1904.

12. Bernstein: Arch. f. d. ges. Physiol., 1877, vol. xv, p. 289.

13. Wedenskii Centbl. f. d. med. Wiss., 1884, vol. xxii, p. 65.

14. Maschek: Sitzungsb. der Wien. Akad. Math.-Naturwiss. Cl., 1887, vol. xcv, No. 3, p. 109.

15. Brodie and Halliburton: Jour. of Physiol., 1902, vol. xxviii, p. 181.

16. Bowditch: Jour. of Phys., 1885, vol. vi, p. 133.

17. Durig: Centbl. f. Phys., 1901, vol. xv, p. 751.

18. Szana: Arch. f. Anat. u. Phys., Phys. Abth., 1891, p. 315.

19. Lambert: Compt. rend. de la soc. de biol., 1894, p. 511; "La résistance des nerfs à la fatigue," Paris, 1894.

20. Hering: Sitzungsb. d. Wien. Akad. Math.-Naturwiss. Cl., 1884, vol. lxxxix, No. 3, p. 137.

21. Edes: Jour. of Phys., 1892, vol. xiii, p. 431.

22. Garten: Beiträge zur Phys. der marklosen Nervend," Jena, 1903.

23. Fröhlich: Zeits. f. allg. Phys., 1904, vol. iii, p. 468.

24. Funke: Ber. Sächs. Akad., 1859, p. 161; Müller's Arch. f. Anat., Phys. u. wiss. Med., 1859, p. 835.

25. Ranke: "Tetanus," Leipzig, 1865; Centrlb. f. d. med. Wiss., 1868, vol. vi, p. 769; "Die Lebensbedingungen der Nerven," Leipzig, 1868.

26. Waller: Lectures on Physiology; "On Animal Electricity," London and New York, 1897; Phil. Trans. of the Roy. Soc., B, 1897, vol. clxxxviii, p. 64.

27. Hodge: Amer. Jour. of Psych., 1888, vol. i, p. 479; 1889, vol. ii, p. 376. Jour. of Morphol., 1892, vol. vii, p. 95.

28. Vas: Arch. f. mik. Anat., 1892, vol. xl, p. 375.

29. Mann: Jour. of Anat. and Phys., 1894, vol. xxix, p. 100.

30. Lugaro: "Lo Sperimentale," Sez. biol., 1895, vol. xlix, p. 159.

31. Eve: Jour. of Phys., 1896, vol. xx, p. 334.

is accompanied by an increase in the bulk of both cytoplasm and nucleus, excessive activity by a decrease in bulk and the appearance of vacuoles in both, and a loss of the substance of the Nissl bodies. While these histologic changes after excessive activity have generally been interpreted as significant of fatigue, there does not exist general agreement as to their mode of origin.

Professor Sherrington,[32] a strenuous adherent of the neuron theory, a clear thinker and one of the ablest and most careful experimenters, whose investigations in recent years have widely extended our knowledge of the mode of action of the nervous system, doubts the inferences that have been drawn from the histologic observations and denies central fatigue to the bodies of the neurons. He ascribes great physiologic importance to the structure—if it can be called a structure—that is situated at the point where one neuron comes into functional relation with the next in the series, this structure being the synapse. The synapse is the surface of contact of the two neurons and is potentially a membrane.

One of Sherrington's experiments is as follows: Given a certain center within the spinal cord, which can be reached by several afferent tracts, and a common efferent tract to a given muscle, he stimulates one of the afferent tracts and records the reflex contractions of the muscle. In the course of time the motor response gives evidence of fatigue. He then turns to another afferent tract and stimulates it. The motor response now appears as strong as at first. Where is located the fatigue from the first stimulation? Not in the nerve fibers, says Sherrington, for they are practically incapable of fatigue; not in the muscle or the body of the motor neuron, for they are common to the two stimulations. Hence it must be at the synapse between the first afferent tract and the motor neuron. Sherrington likens the synaptic membrane to the motor end-plate, the former constituting the safety fuse within the central mechanism, the latter playing a similar rôle within the muscle; while of the two the synapse is the more susceptible.

Other experiments, however, indicate that there is less justification than has commonly been supposed for the idea that the central nervous system fatigues before the muscular system and lead us to suspect that the reverse is true. Woodworth,[33] for example, finds no perceptible difference in the rate of fatigue when one gastrocnemius is stimulated directly at the same time that the other is stimulated either through the medulla or through a sensory nerve, thus indicating that in such an experiment the nerve center contributes no appreciable amount of fatigue. Mlle. Jotcyko,[31] of Brussels, destroys the brain of a frog, thus rendering the animal a reflex machine, and exposes both sciatic nerves. On stimulating nerve A, she obtains direct contractions of its gastrocnemius muscle (A) and reflex contractions of the gastrocnemius (B) of the opposite side. She then blocks the passage of the impulses in nerve B by means of either a continuous polarizing current or ether, and continues to stimulate nerve A. When its muscle is exhausted the block is removed from the opposite nerve, and the muscle of that side responds nearly as well as at first to the reflex stimulations. The reflex centers thus remain active long after fatigue has placed the muscle *hors de combat*. Jotcyko concludes that, compared with the terminal organs, the reflex mechanism of the spinal cord is practically indefatigable.

If this conclusion be true, why may not the same be said of the brain centers? The common belief in the susceptibility of the brain to fatigue is based largely on the presence of sensations of fatigue. With such sensations as a daily experience we are all familiar. They are the psychologic concomitants of physiologic processes; and, since we know that the brain is the seat of the former, it is only natural to believe that the physiologic processes occur there also. We feel tired, and we infer that our brain is tired. For long a controversy has raged regarding the origin of the feeling of effort that accompanies muscular work. Is it central? Does the consciousness of the motor discharge precede actual movement? Does the sense of effort decrease as we continue to labor? In recent years we have learned much regarding the nervous relations of muscle, and the existence of the well-developed muscle sense has been established. Sensory end-organs have become recognized in muscles and tendons, and afferent fibers in muscle nerves; the muscles undoubtedly keep the brain informed of their general condition and of the intensity of their contractions. Along with this advance of our knowledge, it has become generally recognized with Wundt, James, Münsterberg and Baldwin that the feeling of the amount of effort required to make muscles contract is dependent on impulses reaching the psychic centers from the muscles, tendons and joints. The feeling of effort is of peripheral origin. The same is probably largely true of the feeling of fatigue. We are distinctly conscious of the fatigue of our muscles; their tone is diminished; their unusual tension gives us a feeling that they are heavy; it seems more difficult to make them respond to our will, and their response is often painful. Moreover, we are aware that our limbs are swollen, that blood vessels are dilated, and that lymph has accumulated in the intercellular spaces. These are but a few of the sensations. Other tissues add their share of stimuli, many of them obscure and difficult of analysis and location. The result of the flood of these impulses pouring into the brain is a large complex of sensations, which we call the feeling of fatigue. Experiment also appears to justify the peripheral location of the influences that lead to our feeling. Mosso,[3] by means of his ingenious instrument, the ponometer, demonstrates that during a series of voluntary muscular contractions resulting in fatigue the nervous effort to contract gradually increases; in other words, that the curve of nervous effort is the reverse of the curve of muscular performance. Evidence seemingly contradictory to the theory of the peripheral origin of fatigue sensations was contributed by Mosso,[3] Lombard[34] and Waller,[8] and for a time had wide acceptance. These investigators claim to have found that when a set of muscles, such as the flexors of the finger, stimulated by volition and lifting a given weight, became incapable of further voluntary contraction, they still responded readily to electrical stimuli applied directly to the muscles themselves. This supposed phenomenon, widely quoted, and at first thought decisive, has been examined critically by

32. Sherrington: "The Spinal Cord," Schäfer's Text-book of Physiology, vol. II, p. 831, New York, 1900; Proc. of the Brit. Assoc. for Adv. of Sci., 1904, Ergebnisse d. Phys., 1905, vol. iv, p. 797; Jour. of Phys., 1906, vol. xxxiv, p. 1.

33. Woodworth: N. Y. Univ. Bull. of the Med. Sci., 1901, vol. I, p. 133.

34. Lombard: Arch. Ital. de biol., 1890, vol. xiii, p. 371; Amer. Jour. of Psych., 1890, vol. III, p. 21.

Kraepelin,[35] G. E. Müller,[36] Henri,[37] R. Müller,[38] Hough,[6] Woodworth,[39] Storey[7] and Joteyko,[11] and the validity of its proof has been discredited. R. Müller shows, for example, that the muscles that were stimulated volitionally and those that were stimulated electrically were in reality not the same, the former being the interossei, the latter the flexors of the finger. Storey has repeated the work with an improved form of ergograph and with the abductor indicis alone, and clearly demonstrates the appearance of peripheral but not central fatigue. In view of these results and others, I am inclined to the belief that when we perform continued muscular work, our muscular system fatigues before our central nervous system. Moreover, the same results make it probable that the brain and the spinal cord are, like the nerve fiber, resistant, and they throw a certain measure of doubt on all supposed proofs of central fatigue.

With the general problem in this somewhat uncertain state, what can we say of mental fatigue? That it is a reality can not, of course, be denied. It is characterized pre-eminently by a weakening of the powers of attention and the reproductive phase of memory, and the psychophysical laboratories have shown us in innumerable ways how it manifests itself. To explain it on physiologic principles is not altogether possible in the present state of research. Our present theory interprets it as largely peripheral in origin, and Mosso's[3] school has demonstrated, though by imperfect methods, that intense mental work, long continued, such as in the oral examination of many students, diminishes the power of the muscles to respond to direct stimulation, the locus of the fatigue in this case being largely the muscles, as Mosso admits. But to what extent so-called mental fatigue is of peripheral origin we can speak only with caution. We can not deny fatigue to psychic centers, but the intimate relations of central and peripheral fatigue are much in need of exact experimental study.

It is customary to seek the causes of the physical phenomena of fatigue in the chemical changes undergone by the active living substance. Unfortunately, we know too little of these chemical changes. It has been pointed out by von Noorden[39] and Levene,[40] in their illuminating lectures before this Society, that, while the final products of protoplasmic activity are well known, we are sadly ignorant of the intermediate steps between income and outgo. In all tissues during activity substances of value to the organism are broken down and substances of little or no value are formed. When men began to speculate, in the light of the scientific chemistry of the nineteenth century, concerning the causes of fatigue, it was perceived that they might be of two kinds: the loss of valuable material essential to activity and the accumulation of waste products. Naturally the discussion centered on muscle, since many endeavors were being made to seek the source of muscular energy.

Without entering in detail into the interesting history of these endeavors, which are not yet ended, it is sufficient to say that it is now generally recognized that, under ordinary circumstances, the chief source of muscular energy is carbohydrate. Weiss,[41] a pupil of the Viennese physiologist, Brücke, definitely proved in 1871 that a marked diminution of glycogen accompanies muscular activity, and since then many others have demonstrated the same fact in a variety of ways. We might then expect muscular fatigue to be associated with loss of carbohydrate. So far as I am aware, but one research bearing directly on this subject has been made, namely, that of Harrold[42] and myself, performed several years ago and still unpublished in detail. We allowed cats to fast for several days and, during the latter portion of the period, administered hypodermically considerable doses of phlorhizin, which removes carbohydrate from the body. At the end of an adequate period, when, as the experiments of others have shown, the tissues were practically freed from this substance, the animals exhibited great muscular weakness. They were then killed and contraction records were made by selected muscles, artificially stimulated. It was found that under the influence of the drug the muscles were capable of making only from one-fifth to one-half of the number of contractions of which a normal muscle is capable. We proved that this diminution in working power was not due to a direct specific action of the drug on the muscle tissue. The result may, therefore, be explained in one or both of two ways: either by the loss of carbohydrate or by the accumulation of pathologic acids, which are now known to be formed both during fasting and under the influence of phlorhizin. That the former, however, was largely responsible for the fatigue seems probable from our further experiment, namely, that the administration of a quantity of dextrose to a phlorhizinised, and thus thoroughly fatigued, animal was followed within a few hours by a considerable return of muscular power. Our results are well supplemented by those of Mosso and Paoletti.[43] Harley,[44] Frey,[45] Schumburg,[46] and Hellsten,[47] all of whom working with the ergograph on human beings have observed an increase of working power and a diminution of fatigue after the ingestion of sugar.

A condition similar to that of our experiment is met constantly in disease. The physical weakness of fevers, of diabetes mellitus, and of many other pathologic states, in which a deranged metabolism exhausts the muscle cells of their proper store of available nutritive material, a physical weakness which is, physiologically, fatigue, is doubtless due in part to the lack of energy-yielding carbohydrate. Concerning a possible relation of the loss of other substances to fatigue, our present knowledge permits us to say nothing.

Ranke[25] was the first to investigate, from the standpoint of fatigue, the physiologic action of the products of protoplasmic activity. More than forty years ago he studied the action on frog's muscle of the supposed products of muscular action, namely, lactic acid, kreatin, kreatinin, sugar and carbon dioxid. He found that of all these substances only kreatin and lactic acid markedly depress muscular action, as measured by the strength of the induced current necessary to stimulate and also by the height to which the muscle is able to lift a given

35. Kraepelin: "Ueber die Beeinflussung einfacher psychischer Vorgänge durch einige Arzneimittel." Jena, 1892.
36. Müller, G. E.: Zeitsch. f. Psych. u. Phys. d. Sinnesorgane, 1893, vol. iv, p. 122.
37. Henri: Annal. Psych., 1899, vol. v.
38. Müller, R.: Wundt's Philosoph. Studien, 1901, vol. xvii, p. 1.
39. v. Noorden: The Journal A. M. A., 1905, vol. xlv, p. 1287.
40. Levene: The Journal A. M. A., 1906, vol. xlvi, pp. 774 and 866.
41. Weiss: Sitzungsb. d. Wien. Akad. Math.-Naturwiss. Cl., 1871, vol. lxiv, No. 2, p. 284.
42. Lee and Harrold: Amer. Jour. of Phys., 1900, vol. iv, p. ix.
43. U. Mosso and Paoletti: Arch. ital. de biol., 1894, vol. xxi, p. 293.
44. Harley: Jour. of Phys., 1894, vol. xvi, p. 97.
45. Frey: Mitth. aus klinik. u. med. Inst. d. Schweiz. Annalen sulsses des sci. med., 1896, vol. iv, p. 1.
46. Schumburg: Deutsch. milit. Zeits., 1896, vol. xxv, p. 337.
47. Hellsten: Skand. Arch. f. Phys., 1904, vol. xvi, p. 139.

load. He therefore designated these two substances as fatigue substances. Carbon dioxid was found to be slightly depressant, but not sufficiently so to be regarded as playing a distinctly fatiguing action. Both lactic acid and kreatin were found to augment nervous activity, and carbon dioxid slightly to depress it. Later Ranke rejected kreatin as a fatigue substance and accepted acid potassium phosphate. Little experimentation in this subject has been done since Ranke's time; but, partly from his results and partly from other considerations, it is now customary to recognize three distinct metabolic products as fatiguing, namely, sarcolactic acid, mono-potassium phosphate (KH_2PO_4) and carbon dioxid, all of which are acid in reaction. The action of these substances on the muscular and the nervous systems has never been fully investigated. My own experiments on muscle, which are not yet completed, have already yielded certain positive results. From the ready recognition of the phenomena of fatigue in frogs, I have worked so far with them only, but there is no reason to doubt that the results are equally applicable to mammals. I shall, however, extend the work to the latter. My method is to inject one gastrocnemius muscle with physiologic salt solution and the opposite gastrocnemius with similar solution containing a given quantity

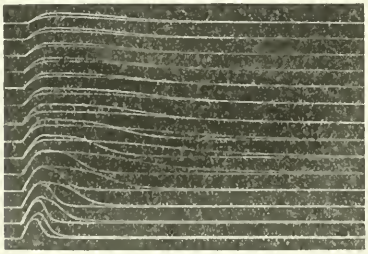


Fig. 2.—Record of fatigue of companion gastrocnemius muscles of the frog, one normal, the other under the influence of sarcolactic acid. The longer, or, in the later contractions, the lower curves, are those of the poisoned muscle. Every fiftieth contraction is recorded.

of the substance which is to be investigated. After a certain time the muscles are excised and stimulated at regular intervals, and comparative fatigue records of the two are made. In this manner I have studied the physiologic action on excised muscle of the three recognized fatigue substances.

Under the influence of a minute quantity of free sarcolactic acid the frog's gastrocnemius, regularly stimulated, presents a striking series of contractions (Fig. 2). The first contraction curve is usually higher and longer than that of the normal muscle. In successive curves this increased height is maintained for a certain time, but later gives place to the normal height and then to one still lower. From the first curve onward the length rapidly increases in proportion to the normal length until the increase has become very marked; later it slightly decreases. The curves show that in the poisoned muscle there is at first increased and then decreased lifting power, increased and then decreased duration of action in comparison with the unpoisoned muscle. At first sight the effect might be interpreted as due to a beneficial action of the acid. But such an interpretation is a superficial one. More careful observation shows that the fatigue series of the poisoned muscle is like that of the unpoisoned one, if the early contractions of the latter be left out of account. The first contraction curve of the poisoned muscle is not unlike the fiftieth or the seventy-fifth of the non-poisoned, the fiftieth of the former like the one-hundredth or the one-hundred-and-fiftieth of the latter, and so on. In other words, the acidified muscle is already fatigued at the beginning of the series, and with stronger doses of the acid the fatigue is more pronounced. Sarcolactic acid is truly named a fatigue substance. Whether, however, the acid in the free state exerts its depressant action is unknown. While it is conceivable that immediately on its formation it may act on the protoplasm of the cells in which it arises, it occurs in the blood not free but as a neutral salt, probably of potassium. I find the action of potassium sarcolactate to be indistinguishable, qualitatively, from that of the free acid, although a stronger solution of the former is required to produce the same quantitative effect.

After the injection of a few cubic centimeters of a one-fifteenth gram-molecular solution of mono-potassium phosphate, the poisoned gastrocnemius shows the following phenomena (Fig. 3): The first contraction of the series is usually closely similar to the first contraction of the normal muscle; very soon, however, the poisoned muscle shows signs of fatigue, and then rapidly

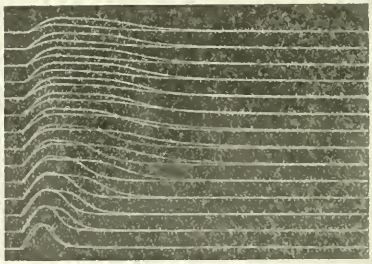


Fig. 3.—Record of fatigue of companion gastrocnemius muscles of the frog, one normal, the other under the influence of mono-potassium phosphate. The longer, or, in the later contractions, the lower curves, are those of the poisoned muscle. Every fiftieth contraction is recorded.

passes through the sequence of events which we have already recognized as characteristic of the gastrocnemius. The poisoned muscle becomes fatigued so rapidly that at last it is scarcely able to lift the weight, while its normal mate is still in excellent working condition. Mono-potassium phosphate, therefore, diminishes the working power and is distinctly fatiguing. I have made some attempt by means of parallel experiments with mono-sodium phosphate, which I find also fatiguing, to discover whether the action of the potassium salt is due to its potassium or to its hydrogen ions. So far as my experiments have gone they indicate that the two substances share in the general effect; the latter seems not to be an acid action solely. The depressant influence of the potassium ions on striated muscle is not unexpected in view of their inhibitory and relaxing effects on the heart, which have been observed by Howell[48] and will be discussed by him in a later lecture before this Society.

Carbon dioxid, when injected into the circulation, produces a result in general similar to that of sarcolactic acid or mono-potassium phosphate (Fig. 4). Like them, it is markedly fatiguing.

48. Howell: Amer. Jour. of Phys., 1898, vol. ii, p. 47; 1901, vol. vi, p. 181, 1906, vol. xv, p. 280.

My results seem to show a certain qualitative physiologic difference between mono-potassium phosphate on the one hand and sarcolactic acid and carbon dioxid on the other, though at present I would not assert this with positiveness. While the muscle under the influence of the salt seems at first not fatigued, but runs through its fatigue course rapidly, the muscle poisoned by sarcolactic acid or carbon dioxid appears fatigued at once, the first contraction being usually slower than the first normal contraction. Whether this apparent difference, which at best is only secondary, proves true or not, it is evident that sarcolactic acid, both free and combined, mono-potassium phosphate and carbon dioxid are fatiguing to muscle. Though I have not yet investigated their action on the central nervous system, the legitimacy of the term fatigue substance is abundantly proved. The organism produces normally in the course of its activity a number of acid substances which tend to inhibit further activity. Fatigue is due in great measure to the depressant action of these toxic products of metabolism on the body tissues, particularly on the muscular system, and the sensation of fatigue is in large part the psychic manifestation of the recognition of this depressant action.

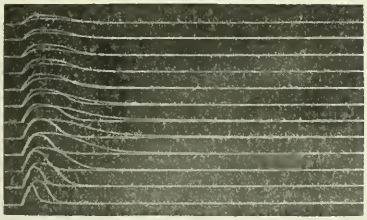


Fig. 4.—Record of fatigue of companion gastrocnemius muscles of the frog, one normal, the other under the influence of carbon dioxid. The longer, or, in the later contractions, the lower curves, are those of the poisoned muscle. Every fiftieth contraction is recorded.

My friend and colleague, Professor Curtis, whose invaluable studies of the early history of medicine often correct our false perspective and distorted judgments by showing us how our modern discoveries were foreshadowed long before, has called my attention to the following passage from the Hippocratic writings,[49] which I am permitted to quote in his own translation:

As to the varieties of fatigue which the body may experience, matters stand as follows: Untrained men are fatigued by every exertion, for no part of the body has been exercised at any kind of effort. Trained bodies are fatigued by unaccustomed forms of exertion and also by their accustomed exercises pushed to excess. Such are the forms of fatigue, and their potency takes effect as follows: The untrained have moist flesh, and when they exert themselves the body becomes heated and they yield the product of liquefaction in abundance. Of this, whatever is sweated out or purged away with the breath causes no trouble except to so much of the body as has undergone the unusual depletion, but whatever remains of the product of liquefaction causes trouble, not only to the unduly depleted part of the body, but also to whatever part receives the liquid in question, which is not akin to the body, but hostile. It does not so much affect the fleshless parts of the body, but rather the fleshy, causing trouble until it takes itself off. Inasmuch as it fails to move about, it keeps quiet and becomes heated, itself and what accrues to it; and if there come to be abundance of this separated stuff it may overpower the healthy parts so that the whole body becomes heated likewise and [the stuff in question] may cause severe fever.

These ideas, recorded twenty-three hundred years ago and in language to us quaint, are strangely prophetic. To Hippocrates and his contemporaries, as to us, excessive activity of a part of the body may cause general fatigue. To them the result is due to the "product of liquefaction" which is "hostile" to the body and affects chiefly the "fleshy" parts, there "causing trouble until it takes itself off." To us the result is due to "fatigue products," which are "toxic" to the body and affect chiefly the muscles, there "causing trouble" until they are either excreted or rendered innocuous by chemical change. Those same Greeks, however, whose speculations came so near the truth in one regard, knew not even the functions of the muscles or the other parts about which they were writing!

It is not improbable that future research will discover other fatigue substances besides those which I have named. Mention should here be made of the claim of Weichardt,[50] working in Zuntz's laboratory in Berlin, to have isolated from fatigued muscles a true toxin, of a chemical and physical nature like bacterial toxins, which, when introduced in minute quantity into the body, is capable of giving rise to the phenomena of fatigue. Weichardt further claims to have obtained by the usual methods of the bacteriologists an antitoxin endowed with the power of neutralizing the fatiguing properties of the toxin. So sweeping a discovery needs confirmation before it can be accepted. But it is hardly credible that the few substances which I have mentioned should prove to be, of all the links in the long metabolic chain, the only substances that are depressant to protoplasmic activity. It is the intermediate substances that we must watch especially. Autolysis opens up also a new field full of interest in this connection.

Concerning the production of fatigue substances by the central nervous system, very little is known. There is no certain evidence that sarcolactic or other organic acid is produced by nervous activity. In view of the striking fact which Macallum[51] has brought forward by means of his careful microchemical methods, namely, that potassium is not to be found in the neuron, we can not believe that potassium salts play any rôle in nervous fatigue. Carbon dioxid is, however, present, and to it has been ascribed by Verworn[52] an important share in the phenomenon in question. Yet Hill and Nebarro[53] have investigated the content in carbon dioxid of the venous blood which has passed through the muscles and that which has passed through the brain during both rest and activity, and find the systemic blood to contain between two and three times as much of this gas during rest as the cerebral venous blood contains, and from three to seven times as much during activity. They conclude that the metabolism of the muscles is, during rest, twice or three times as great as that of the brain, and that during activity muscular metabolism increases enormously in comparison with the metabolism of the brain—a further suggestion that the fatigue of the muscles is of pre-eminent importance relative to that of the central nervous system.

That intense mental activity is capable, however, of giving rise within the body to profound chemical changes

49. Hippocrates: "Oeuvres complètes d'Hippocrate. Traduction nouvelle avec le texte grec en regard," E. Littré, vol. vi, p. 582, Paris, 1849.

50. Weichardt: Münch. med. Wochsch., 1904, pp. 12 and 2121.

51. Macallum: Jour. of Phys., 1905, vol. xxxii, p. 95.

52. Verworn: Arch. f. Anat. u. Phys., Phys. Abth. Suppl., 1900, p. 152.

53. Hill and Nebarro: Jour. of Phys., 1895, vol. xviii, p. 218.

is proven by the not unfrequent occurrence of such cases as the following, this striking instance of which was recently related to me by its observer, a well-known medical authority: A nursing mother was subjected for a few minutes to intense fright. Her child, after taking the mother's milk some three or four hours later, was attacked by convulsions. But there is no evidence that the toxic substance in the mother's milk was produced in the brain cells. Indeed, the probability is that the deranged metabolism was localized elsewhere, an indirect result of the nervous shock.

The action of fatigue substances is not confined to the tissues in which they arise. The excessive activity of one tissue is capable of causing fatigue to appear in others. We all know that fatiguing muscular work diminishes our brain power, and I have already referred to the experiment by which Mosso's school has demonstrated that after intense mental labor the muscles are less capable of performing work on direct stimulation. Thus, localized activity is capable of producing general fatigue, a fact which is often overlooked in our daily life. The explanation of this is afforded by Mosso's[54] well-known experiment: A dog was fatigued by long continued running; his blood was then transfused into the vessels of a second dog, from which an equivalent amount of blood had been withdrawn, with the result that the second dog exhibited the usual phenomena of fatigue. The blood had evidently become charged with the fatigue substances produced in the muscles, and thus they were able to reach all parts of the body. Geppert and Zuntz[55] and others have demonstrated that in muscular work resulting in general fatigue the alkalinity of the blood, as determined by titration methods, is markedly diminished. Zuntz[56] has pointed out that in such a condition the circulatory and the respiratory organs are first affected, later the digestive and the urinary organs. Geppert and Zuntz[55] and Lehmann[57] have demonstrated that the increased action of the respiratory center in muscular work is probably caused by the stimulating action of the acid fatigue substances arising in the muscles. It seems to be a fact that in general fatigue the coagulation of the blood is hastened, while according to Manca[58] the red corpuscles break down less rapidly than before. Ceni[59] claims that the bactericidal power of the blood is diminished in brief and increased in prolonged muscular fatigue. Salvioli[60] finds the salivary and the gastric glands to secrete less during intense muscular fatigue, and the gastric juice to lose in acidity and in digestive power. Although exact researches are here needed, there are probably few physiologic functions that are not affected unfavorably by the prolonged and excessive activity of the muscular and the nervous systems. In such a condition the normal action of the tissues may easily give place to pathologic action, as is illustrated by the fever resulting from over-exertion. Fatigue undoubtedly diminishes the resistance of the tissues to bacteria and also predisposes the individual to attacks from diseases other than bacterial. Specific investigation in its relation to pathologic conditions is, however, sadly lacking.

Nevertheless there is one subject in pathology concerning which we can speak in more than general terms. The fact that certain acid substances are depressants has a far wider application than merely in the causation of physiologic fatigue. Pathologists have recognized in recent years as a widespread phenomenon the production in quantity of acids, which load the blood and the tissues and give rise to the condition known as acid intoxication. This condition has been demonstrated notably in diabetes mellitus, fevers, carcinoma, anemia, acute yellow atrophy of the liver, phosphorus and arsenic poisoning, arthritis deformans, various disorders of digestion, and inanition; and the acids which are involved are such as exist normally only in small quantities, if at all, and are intermediate products of metabolism, the results of incomplete oxidation. In nearly all, if not all, of the diseases mentioned, among the prominent symptoms are marked physical depression and ready fatigability. Zenoni[61] has made ergographic tracings from diabetics and finds advanced cases capable of a very small amount of muscular work, a limited number and a small amplitude of contractions, not rarely accompanied by contracture, and an early onset of fatigue. The facts of the toxic theory of fatigue suggest that we have in the pathologic acids and the depression and ready fatigability a relation of cause and effect.

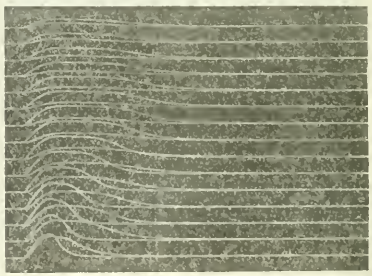


Fig. 5.—Record of fatigue of companion gastrocnemius muscles of the frog, one normal, the other under the influence of β-oxybutyric acid. The longer, or, in the later contractions, the lower curves, are those of the poisoned muscle. Every fiftieth contraction is recorded.

It is a well-known fact that the injection of these acids into living organisms is followed by the symptoms that follow their spontaneous formation within the body—artificial acid intoxication resembles spontaneous acid intoxication. I have been able to demonstrate on muscle the fatiguing action of one of the pathologic acids, namely, β-oxy-butyric acid, which is common in diabetes mellitus (Fig. 5). A frog's gastrocnemius under the influence of β-oxy-butyric acid reacts not unlike a muscle under the influence of sarcolactic acid or carbon dioxid. There is pronounced fatigue from the beginning, a curve of contraction that is high and long at first and becomes lower and longer as the experiment proceeds, and an early onset of exhaustion. Such a muscle is already in a fatigued condition, even before the series of stimulations has begun. Such a muscle within the body would undoubtedly give rise to fatigue sensations. To what extent within the body the free pathologic acid acts directly on the muscles is a problem like that presented by sarcolactic acid and is yet unsolved. It seems probable that the muscles are one of the places of origin

54. Mosso: Verhand. d. internat. med. Cong. zu Berlin, 1890, vol. ii, pt. 2, p. 13.
55. Geppert and Zuntz: Arch. f. d. ges. Physiol., 1888, vol. xlii, p. 189; 1895, vol. lxii, p. 295.
56. Zuntz: Le bull. med., 1903, vol. xvii, p. 778.
57. Lehmann: Arch. f. d. ges. Phys., 1888, vol. xlii, p. 284.
58. Manca: Arch. Ital. de biol., 1895, vol. xxiii, p. 317.
59. Ceni: Arch. Ital. de biol., 1893, vol. xix, p. 293.
60. Salvioli: Arch. Ital. de biol., 1892, vol. xvii, p. 248.
61. Zenoni: Il Policlinico, Sez. med., 1896, vol. iii, p. 538.

of the pathologic acid, and it is possible that the free acid exerts its depressant action on the cells in which it is formed. It seems to occur in the blood of diabetics, however, not free, except in the most extreme cases, but in combination with certain metals, such as sodium, potassium and ammonium. I have investigated the salts so formed, namely, sodium, potassium and ammonium oxy-butyrate, which, it should be emphasized, are not acid in reaction, and I find their action on muscle to be similar qualitatively to that of the free acid. Quantitatively they differ among themselves, the potassium salt being the most powerful. While, therefore, the free acid may possibly act as a fatigue substance to the cells in which it originates, its salts may act through the blood on distant cells and give rise to general fatigue, physical depression and ready fatigability. My results do not seem to require the acceptance of Minkowski's[62] hypothesis, based partly on his own observations and partly on those of Walter,[63] that the attachment of the sodium of the blood forces the carbon dioxid, continually produced, to remain in the tissues, and that the fatigue is then referable to it, rather than to the pathologic acid or its salts. My present inclination, however, is toward the belief that all these substances are causative. The salts certainly are so, and the beneficial effects which are known to follow the administration of alkalies, such as sodium bicarbonate, seem to demand free acid and perhaps carbon dioxid also as causative agents. However this may be, I wish to emphasize my main contention, namely, that in acid intoxication the tissues of the body are in a state wholly analogous to the state of fatigue, in so far as the latter is due to toxic substances. The facts that the fatigue products are produced in the one case normally and in the other pathologically and that they differ in composition in the two cases are altogether secondary. Their physiologic effects are the same. Heretofore attention has been directed chiefly to the extreme effects of the pathologic acids, as, for example, the production of diabetic coma. We should not, however, forget that long before these extreme effects are manifested the same causes are producing evil, if less obvious, phenomena and rendering the cells less capable of their proper functions.

Not all cases of fatigue accompanying pathologic conditions are, however, due to excessive production of acid. In diabetes itself we have an excellent example of the twofold cause. The body is not only intoxicated by acid, but carbohydrates are wanting, and I can cite no more typical instance of disease in which fatigue may be traced to its two recognized causes. The two causes are also present in fevers and inanition, and doubtless in other pathologic conditions, though here investigation is needed.

Several investigators, especially Abelous and Langlois[64] and Albanese,[65] have studied the relation of the suprarenal bodies to fatigue. They find that both in frogs and in mammals, after removal of these bodies, fatigue occurs very promptly on the performance of muscular work. The extract of the muscles of an animal dying as the result of removal of the bodies possesses a toxicity similar to that of the muscles of a normal animal tetanized to exhaustion. They infer that the muscular weakness following removal of the suprarenals is due to toxic substances of a similar nature to those producing physiologic fatigue, and that the function of the suprarenals is to supply antitoxic substances. In view of our present knowledge of the physiologic action of adrenalin in its various forms, it seems more probable that the weakness is to be explained by the absence of the normal tone-producing internal secretion of the bodies in question, and this is doubtless the true explanation of the muscular asthenia present in persons suffering from Addison's disease. Abelous, Charrin and Langlois[66] have published striking erographic tracings of such cases.

Future research will probably reveal much regarding the relation between perverted metabolism and fatigue in pathologic conditions. In diabetes, for example, the possible fatiguing action of diacetic acid and of acetone ought to be investigated. In poisoning by phosphorus and by arsenic, in anemia and in certain diseases of the liver, sarcolactic acid is eliminated in the urine, and the physiologic action of this substance, already discussed, is probably responsible, in part at least, for the physical weakness accompanying these conditions. Because of the interest connected with the formation of aromatic bodies in the intestines as a result of putrefaction, and the supposed toxic action of some of these bodies on the central nervous system, at the suggestion of Professor Herter I have recently made a preliminary study of the action on muscle of indol, skatol and methyl mercaptan, and find all to possess some degree of fatiguing power.

In view of the fact that fatigue occupies so prominent a place in our daily life in both health and disease, it is strange that outside of the nostrum vendors not more serious endeavors have been made to provide specific antidotes for it. That various chemical substances delay fatigue is well known. I may be permitted here to refer to the study of the action of ethyl alcohol on muscle by Salant and myself[67] several years ago, in which we found that in medium quantity this substance exerts a favorable action, which is characterized by a quickening of the contraction; a quickening of the relaxation; the power of making a larger number of contractions and of performing a larger amount of work in a given time: an increase in the working time, or, in other words, a delay of fatigue; and the power of making a larger number of contractions and of doing a larger amount of work before exhaustion sets in. This action is exerted directly on the muscle protoplasm itself, not on the intramuscular nerve endings. In large quantity alcohol exerts an unfavorable action which is, in general, the reverse of that caused by medium quantities. The favorable action seems to be followed by unfavorable after-effects. Alcohol can not, therefore, be considered as worthy of ranking among the valuable antidotes to fatigue. And the same may be said of other substances of similar physiologic properties. A true antidote must recognize the causes. Both scientific experience and the experience of unscientific mankind seem to have demonstrated the real value of sugar in its various forms as a partial restorer of working power, and the old wives' prescription of cooking soda for one's tired feeling is certainly justified by the administration of sodium bicarbonate in advanced diabetes, if indeed this substance is not of actual benefit in ordinary daily physiologic fatigue. But at best sugar and alkali are only in part efficacious, and mankind at

62. Minkowski: Naunyn's Mitth. aus. d. med. Klinik zu Königsberg, 1888, p. 174.

63. Walter: Arch. f. exp. Path. u. Pharm., 1877, vol. vii, p. 148.

64. Abelous and Langlois: Arch. de physiol., 1892, vol. iv, pp. 269 and 465.

65. Albanese: Arch. Ital. de biol., 1892, vol. xvii, p. 239.

66. Abelous, Charrin and Langlois: Arch. de physiol., 1892, vol. iv, p. 721.

67. Lee and Salant: Amer. Jour. of Phys., 1902, vol. viii, p. 61

present can administer no food or drug that can push the wearied cells up the metabolic grade, either simultaneously with their descent or quickly after the descent has ceased. Only the assimilation and detoxication that normally come with rest—and, best, rest with sleep—are capable of adequate restoration of working power. Fatigue is a phenomenon of metabolism; recovery is a phenomenon of metabolism. To-day's research reveals only how much more complex is the body's metabolism than yesterday we thought it to be, and in the problem of fatigue there is probably much more before us than behind us.

SERO-PROGNOSIS OF TUBERCULOUS PLEURISIES.*

PAUL COURMONT, M.D.
LYONS, FRANCE.
[TRANSLATED BY MAZYCK P. RAVENEL, M.D.,
PHILADELPHIA.]

The general idea of sero-prognosis is personal with me.

In 1897[1] I showed in regard to typhoid fever that the intensity of the agglutinating power of the blood is in inverse proportion to the gravity of the infection and in direct proportion to the resistance of the patient. I established this by 112 observations on typhoid fever with studies of the agglutination curve and by numerous observations on animals. In like manner Griffon[2] has shown that the maximum agglutinating power of the blood in pneumonia is found at the moment of recovery, and that this agglutinant power is wanting in mortal cases. In tuberculosis, which is not a cyclical disease, the facts are less conclusive. However, in conjunction with Arloing[3] I have found, since 1898, that the agglutinant power of the blood is ordinarily greater in cases which are benign, or on the way to recovery, and that it is lacking often in the grave and fatal forms. Many authors (Bendix, Mongour, Descos) have confirmed these findings.

The study of the agglutinating power of the blood serum and of the pleural serosity in tuberculous pleurisies has given some very interesting facts from this point of view, and capable to a certain degree of practical application.

In 1898 and 1900[4] I studied the agglutination of homogeneous cultures of the tubercle bacillus by tuberculous serous effusions and my own conclusions, based on 16 cases of tuberculous pleurisy, were as follows:

1. The non-tuberculous serous fluids do not agglutinate the bacillus of Koch. 2. The greater part of the tuberculous serous fluids agglutinate the bacillus of Koch in the proportion of 1 to 5 up to 1 to 20. 3. A certain number of tuberculous serous fluids cannot give a positive reaction even in the proportion of 1 to 5. In general this is found in grave or fatal cases with lesions especially virulent or occurring in tuberculous people in the last stage. However, in certain benign tuberculous pleurisies the sero-reaction of the pleural effusion may be entirely absent at the beginning, and only become positive at the end of a certain time—in general, about the time of recovery. 4. The agglutinating power of the blood is not always equal to that of the serous fluids. It can be more or less elevated, or exist in the absence of that of the serous fluid, and *vice versa*. 5. In favorable cases the agglutinating power of the serosity, or of the blood, may rise progressively. 6. The study of effusions of the serous membranes brought about experimentally in animals confirms all of these findings. Consequently, in practice, (a) a clearly positive sero-reaction beginning at 1 to 5 with the serous liquid constitutes a sign of great value in favor of the tuberculous nature of the effusion; (b), a negative sero-reaction constitutes only a presumption against the diagnosis of tuberculosis. In such cases it will be necessary to repeat the examination by the sero-reaction; (c) the examination of the agglutinating power of the blood, and of its intensity, will give interesting facts for comparison with those of the pleural reaction.[5]

At this time I also stated:

As we have demonstrated experimentally with Arloing,[6] there is an inverse ratio on the one hand between the gravity of the tuberculous lesion, resulting from the virulence of the bacillus and from the receptivity of the soil, and on the other hand, the intensity of the agglutinating power of the blood. . . . Grave or mortal pleurisies, human or experimental, give only very feeble or oftener a negative reaction. On the contrary the benign or curable pleurisies in man or those produced in an animal by a very much attenuated tuberculous virus give almost always a positive sero-reaction, often elevated in proportion as the disease is less grave. Finally, in an animal already possessing an agglutinating power we have been able by inoculation with a highly virulent tuberculous virus to bring about a pleurisy the effusion from which presented an agglutinating power growing more and more feeble until death.

Since that time I have pursued my researches at the Hotel Dieu at Lyon, and have studied and followed in parallel lines the clinical evolution and the agglutinating power of sera (blood and pleural effusion) in 115 patients suffering with non-tuberculous pleurisy.

I have always made the study of the agglutinating power under the same conditions, following the technic pointed out by Arloing and myself in numerous publications. As far as possible I have multiplied the drawings of blood and of the pleural effusions, following as closely as possible the variations of the agglutination in the course of the disease; i. e., the agglutination curve. From a clinical point of view my patients have been minutely observed and followed during their stay in the hospital, and after going out as long as possible. The nature of the pleurisy was proven not only clinically, but by the inoculation of the pleural effusion into guinea-pigs, and by cytology.

In the future I purpose publishing the complete results of all of these findings. At present I give only that which concerns the relation between the agglutination and the evolution of the disease, between the clinical prognosis and the sero-prognosis. The clinical prognosis can be given only by the evolution of the disease in the hospital. In 1904-5 we made inquiries on our 115 patients after their discharge from the hospital. The record of a large number of these we have thus been able to trace, sometimes with great difficulty, and the results obtained are given in the theses of Grillot[7] and of Pallasse.[8]

Out of the 115 patients 35 died at the hospital, 12 died after their discharge, 42 recovered, and 25 we have

* This article forms a part of the series of studies on the significations of the agglutinating reaction of humors.

1. Courmont, Paul: "Séro-pronostic de la fièvre typhoïde," Thèse Lyon, 1897; Revue de Médecine, 1897 and 1900.

2. Griffon: "L'agglutination du pneumocoque," Thèse de Paris, 1900.

3. Arloing, S., and Courmont, Paul: "Le séro-diagnostic de la tuberculose," Gazette des hopitaux, December, 1900.

4. Courmont, Paul: "Séro-diagnostic des épanchements tuberculeux," Presse Médicale, June 11, 1898, and Congrès de la tuberculose, Paris, 1898.

5. Courmont, Paul: "L'agglutination du bacille de Koch par les épanchements tuberculeux." Archiv. de méd. expér., November, 1900.

6. Arloing, S., and Courmont, P.: "Des causes qui modifient le pouvoir agglutinant dans le sang des sujets expérimentalement tuberculeux." Jour de physiol. et pathol. générale, No. 1, January, 1900.

7. Grillot: "Séro-diagnostic et séro-pronostic dans la pleurésie tuberculeuse." Thèse Lyon, 1904.

8. Pallasse: "Valeur pronostique de la quantité de l'épanchement dans les pleurésies tuberculeuses." Thèse Lyon, 1905.

been unable to trace. As regards these last we have based their prognosis on their condition at the time of their discharge from the hospital. The conclusions at which we have arrived are not based then on superficial and hasty observation. Our results extend over a period of seven years and some of our patients have been followed during this entire time. Certain recoveries did not remain permanent during these years; in other cases a secondary tuberculous infection, more or less early, has come on to modify the impression of some prognostications which were too hasty. From this long and patient study, extending over seven years and taking in 115 cases, and several hundred sero-agglutination tests, certain striking conclusions are derived, confirming and strengthening my views expressed in 1898.

The Relations Between the Evolution of Tuberculous Pleurisies and the Agglutinating Power of the Pleural Effusion.—We will give at the present time only results as a whole—very striking by their clearness. Although in each case we have studied the agglutinating power of the blood at the same time as that of the pleural effusions, and although the comparative study of the two possesses a great interest, we will speak here only of the agglutinating power of the pleural effusion.

I have divided my cases into two series according as the pleural effusion agglutinated the homogeneous cultures, beginning in the proportion of 1 to 5, or did not possess the agglutinating power at least in the proportion of 1 to 5, and I have compared the number of deaths, exacerbations, and of recoveries in the two series.

1. *Pleurisies in which the effusion agglutinates.*

Of these there are 67 cases, in which the agglutinating power varied from 1 to 5 up to 1 to 20 and more. Of these 67 patients 50 recovered or improved very much. Many of the recoveries or improvements have been followed during some years. The remaining 17 died either in the hospital or during the years which followed.

It is interesting to note the proportion of agglutination in those who recovered and in those who died:

Among 67 patients, agglutinating power was demonstrated in 33; 1 to 10, 1 to 20 and above; of these, 28 recovered and 5 died; in 34 there was agglutinating power of 1 to 5 only; of these, 22 recovered and 12 died.

Out of a total of 67 cases with a positive reaction, we have 50 recoveries, that is to say, 75 per cent.; in 33 cases with a strong reaction, 28 recoveries, 79 per cent., and in 34 cases with a feeble agglutination, 22 recoveries, or only 65 per cent.

2. *Pleurisies in which the effusion does not agglutinate.*

It is not necessary to say that we are speaking always of tuberculous pleurisies, and in the absence of the positive sero-reaction the diagnosis was assured, as in the preceding cases, by inoculation, by the clinical history, and often by the cytology. We have 48 of these cases in which the sero-reaction was negative in the proportion 1 to 5, as many times as we examined them, often 4 to 5 times in the same subject during the course of the pleurisy. Out of these 48 cases we have 13 recoveries or permanent ameliorations, 27 per cent; 35 deaths or exacerbations, 73 per cent. Summing up, we have in cases with positive reaction, 75 per cent. recoveries, and 25 per cent. of deaths. In the cases with negative reaction 27 per cent. of recoveries, and 73 per cent. of deaths or exacerbations.

These figures speak for themselves. One can sum them up somewhat schematically in saying that the patient with pleurisy in whom the effusion agglutinates has about three chances out of four for recovery; the patient in whom the effusion is not agglutinant has about three chances out of four of dying. It appears clear then that the agglutination reaction may be the sign of a curative process, of the defense of the organism, or of a lack of virulence of the infection. Two other points support this theory. In the table of agglutinant pleurisies, those which are most strongly agglutinant have the best prognosis (79 per cent. of recoveries); and if one compares the percentages of recoveries in the pleurisies with high agglutination, feeble agglutination, or no agglutination, the result is as follows: In 33 cases of pleurisy in which there was a strong sero-reaction (1 to 10 and above), 75 per cent. terminated in recovery and 21 per cent. terminated fatally.

In 34 cases of pleurisy in which there was a feeble sero-reaction (1 to 5), 65 per cent. terminated in recovery, while 35 per cent. terminated fatally. In cases in which the sero-reaction was absent, recovery took place in only 27 per cent., while 73 per cent. terminated fatally.

We have here a very interesting scale of progression, which leads to the following conclusions: The prognosis of tuberculous pleurisy with effusion is favorable according to the intensity of the agglutinating power of the pleural liquid, and grows worse with the diminution or absence of this reaction.

On the other hand we have found very often that the agglutinating power of the effusion increases very sensibly as recovery progresses, but diminishes in mortal cases toward the approach of the fatal termination.

EXAMPLES.

Case 1.—G., aged 18, benign sero-fibrinous pleurisy, recovery.

Ninth day, lymphocytes in pleura, 67 per cent.; agglutination, 1 to 5.

Fourteenth day, lymphocytes in pleura, 89 per cent.; agglutination, 1 to 10.

Twenty-first day, lymphocytes in pleura, 96 per cent.; agglutination, 1 to 15.

Case 2.—M., aged 28, pregnant, double febrile pleurisy, galloping consumption.

Twentieth day, lymphocytes in pleura, 91 per cent.; agglutination—blood, 1 to 10; pleura, 1 to 5.

Fiftieth day, lymphocytes in pleura, 93 per cent.; agglutination—blood, 1 to 10; pleura, 0.

Eightieth day, lymphocytes in pleura, 71 per cent.; agglutination—blood, 0; pleura, 0.

Ninety-fifth day, lymphocytes in pleura, ?; agglutination—blood, 0; pleura, 0.

CONCLUSIONS.

From the study of 115 cases of tuberculous pleurisy with effusion, followed during seven years, and from the investigation of the mortality of these patients, the following conclusions may be drawn:

1. The mortality is about 25 per cent. in cases the pleural effusion of which has agglutinating power, and 75 per cent., on the contrary, in those in which the fluid has no agglutinating power.

2. Among patients with an agglutinating effusion the number of recoveries is large in proportion as the agglutinating power is high.

3. One can observe the agglutinating power of the effusion increase in proportion as the case progresses to recovery, and, on the contrary, diminish in those patients in whom the termination is near.

4. These facts are a new proof of what we have held concerning typhoid fever, viz., that the agglutinating reaction is a reaction of defense, or at least goes parallel

with the reaction of resistance of the organism. It is in general in inverse proportion to the gravity of the disease and in direct proportion with the intensity of the resistance.

5. The study of agglutination in tuberculous pleurisies leads to important prognostic conclusions.

THE TREATMENT OF TETANUS BY INTRASPINAL INJECTIONS OF MAGNESIUM SULPHATE FOR THE CONTROL OF CONVULSIONS.

REPORT OF TWO CASES, WITH A DISCUSSION OF THE METHOD.

SAMUEL LOGAN, M.D.

Assistant Demonstrator of Operative Surgery, Tulane University; Senior Chief of Clinic to Surgical Department, Tulane University.

NEW ORLEANS.

The extremely unfavorable prognosis which must be given in cases of tetanus and the doubtful value of the antitetanic serum save as a prophylactic remedy are of themselves sufficient justification for the trial of any new plan of treatment of this disease which may hold out even the faintest hope of obtaining better results.

With the object, therefore, of adding in a slight degree to the statistics of a newly-suggested method of treatment, I report two cases of tetanus which have been treated according to the method proposed by Dr. S. J. Meltzer.[1] While neither of the cases resulted in a cure, they are nevertheless reported, partly because of unusual features arising in each and partly because of my belief that the value of any new method of treatment can be obtained only from a study of its failures as well as of its successes. In one of the cases the method accomplished all that Dr. Meltzer claims for it, and the final result was due to other causes. In the other the negative result following the plan of treatment was due to inexperience as to the proper dose to be used rather than to the method of using it.

Dr. Meltzer[1] reports the cure of a case of tetanus at the Roosevelt Hospital by the use of an injection into the spinal canal of a 25 per cent. solution of magnesium sulphate in the proportion of 1 c.c. for every 25 pounds of body weight, for the control of the muscular spasms, after 115 c.c. of antitetanic serum had failed to produce any effect on the progress of the disease. The case is to be reported in detail by Dr. Blake, in whose service it occurred, but as yet I have not been able to get any exact information about it. On the theory that the violent muscular exertions during the convulsions cause a gradual wearing out of the patient's resisting powers, it seems reasonable to suppose that anything which tends to lessen the convulsions and to preserve the patient's strength will increase his chances of recovery. This theory forms the basis for the liberal use of such remedies as chloral and the bromids, and their general employment in these cases may be taken as an index of a belief that a cure of the convulsions will be followed by a cure of the disease. That this is not necessarily bound to follow is shown in one of the cases to be reported, in which the convulsions were completely controlled, but with no apparent effect on the further course of the disease.

A few days after the appearance of the article by Meltzer, a case of tetanus was admitted to the surgical service of Prof. Rudolph Matas at the Charity Hospital and was assigned to my ward. In the hope of duplicating the good result obtained by Dr. Blake, Professor Matas decided to try the use of the magnesium sulphate solution, and it is through his courtesy that I have been given the privilege of reporting the experiment. The history of the case is given in detail because of the several important facts which are brought out by a study of the clinical record of the course of the disease.

CASE 1.—E. Z., Mexican, aged 11, was admitted to hospital Jan. 9, 1906, at 9 p. m., and died Jan. 13, 1906, at 3:50 a. m. Time in hospital, three days and six hours. His previous and family history was not obtainable.

Present Illness.—On Jan. 1, 1906, while celebrating the arrival of the New Year, the patient accidentally shot himself in the palm of the right hand with an old toy pistol loaded with a blank cartridge. He was treated at the time by his family physician, the treatment being limited to the simple cleansing of the wound and the application of dry dressings. The physician refused to give antitetanic serum as a prophylactic, because he said he did not believe in it and never used it. The wound was cleansed and dressed every other day until January 9, when, the first symptoms of tetanus appearing, the family became alarmed and brought the boy to the hospital for treatment. This was on the ninth day after the injury.

Treatment.—The patient was admitted to the accident amphitheater at 7 p. m., and was found to be suffering with stiffness of the muscles of the neck and some muscular twitchings. A diagnosis of probable tetanus was made by the house surgeon, and under anesthesia the palmar wound was freely opened, cleansed and dressed. The boy was given 50 c.c. of antitetanic serum introduced into the spinal canal in the lumbar region before being admitted to Ward 1 of the surgical service, under the supervision of Professor Matas.

Course of Disease.—On admission to the ward, no distinct convulsions could be noted, but the patient complained of great stiffness of the neck and jaws and marked muscular twitchings were noticed all over the body. He was immediately put on the bromid and chloral treatment, gr. 30 of the former and gr. 15 of the latter being ordered every four hours. Stimulating nourishment was given freely during the night, which passed uneventfully, the patient resting well, with no convulsions, but some difficulty in swallowing when fed. Maximum pulse, 112 (at 4 a. m.); maximum temperature, 99.8 (at 1 a. m.).

January 10: During the day bromids and chloral were continued. Temperature ranged from 98.6 at 8 a. m. to 99 at 6 p. m.; the pulse ranged from 116 at 11 a. m. to 136 at 4 p. m.; respirations ranged from 28 at 8 a. m. to 36 at 2 p. m. The patient was quiet and dozing during the morning, but was very restless during the afternoon. Muscular twitchings were marked and increasing. He complained of severe pain in the chest and abdomen, the muscular walls of the latter being rigidly contracted. No distinct convulsions could be made out as yet. He could still open his mouth sufficiently to be fed, but had great difficulty in swallowing food.

During the night bromid and chloral were administered. Temperature fluctuated between 99 at 9 p. m. and 100, in the axilla, at 5 a. m.; pulse varied between 120 at 2 a. m. and 140 at 5 a. m.; respirations ranged between 24 at 9 p. m. and 36 at midnight. The patient was fairly quiet during the night, save for great muscular twitchings and severe abdominal pains at 9:30 p. m. There were no convulsions, but there was great difficulty in swallowing.

January 11: This was the eleventh day since the injury. Bromid and chloral were discontinued after one dose at 9:45 a. m. Up to that time the patient had been given gr. 450 of bromids and gr. 170 of chloral in thirty-six hours, with no apparent effect on the muscular twitchings.

At 9 a. m., thirty-eight hours after the appearance of the first symptoms of tetanus, the patient was given by mouth ℥ss of magnesium sulphate in an effort to clean out the bowels. The

1. Meltzer, S. J.: "Inhibitory and Anesthetic Properties of Magnesium Salts," Med. Rec., Dec. 16, 1905.

giving of this dose brought on the first noticeable convulsion, which was slight in character, and lasted only about ten seconds. After this, however, handling of the patient caused several slight convulsions. None of these lasted long, but each was distinct and fairly severe, the boy crying loudly from pain, and the head being drawn back in opisthotonos during them. This condition seemed to be getting rapidly worse.

At 10:30 a. m., on examination by Professor Matas, the patient was found in a marked tetanic state, with convulsions occurring every time he was handled or disturbed. These convulsions lasted only a few seconds, and the jaws during the intervals were only partially locked. The abdominal muscles were rigidly contracted at all times and very painful on palpation. After a thorough review of the case, and in view of the gloomy prognosis from the rapid setting in of the change for the worse, Professor Matas decided to try Dr. Meltzer's plan of injection of a solution of magnesium sulphate into the spinal canal in an effort to control the muscular spasms.

Injection of Magnesium Sulphate.—In order to avoid the causation of further convulsions from the unavoidable handling during moving of the patient, he was anesthetized in bed and then transferred to the operating room. After the most through preparation of the parts, 4 c.c. of a 25 per cent. solution of magnesium sulphate, previously sterilized by filtering and boiling, were introduced into the spinal canal by lumbar puncture. The estimated weight of the boy was 80 pounds, making the amount of solution 1 c.c. for every 20 pounds of weight, instead of for every 25 pounds, as suggested by Meltzer to be used for producing anesthesia. Dr. Matas experienced some slight difficulty in making the injection because the patient's muscles were not completely relaxed even under full anesthesia. A few drops of cerebrospinal fluid were allowed to escape, and the injection was made very slowly, ten minutes being taken to introduce it. It was hoped by this means to avoid trouble with the respiration, and as a further precaution against this the Fell-O'Dwyer apparatus was kept at hand in case it might be necessary to resort to artificial respiration.

While the patient was still under the anesthetic, the wound in the palm of the hand was examined, and several pieces of wadding were found, which were removed and sent to the pathologic department for examination. (The report from the department later showed an absence of tetanus bacilli in these.) In addition, 50 c.c. of antitetanic serum was given, 10 c.c. being injected into each sciatic nerve, 10 c.c. into each brachial plexus and 10 c.c. into the tissues around the wound. A fact noted at the time of injection was that even under complete anesthesia the abdominal muscles were never relaxed, the abdomen being rigid and board-like on palpation. The boy was returned to the ward after having been in the operating room forty minutes in all. His temperature at that time was 101 in the rectum; pulse, 120; respirations, 30.

Result.—At 12:15 p. m., forty minutes after the injection was made, all the muscles of the body were completely relaxed; the abdomen, heretofore the most persistently rigid part, was soft, and not in the least tender to the touch. The jaws were relaxed, and the mouth could be opened readily. Recovery from the anesthetic was complete and satisfactory save for a slight nausea. The patient was perfectly conscious, and said that he felt well, except for a sore feeling in the stomach, which was probably the after-results of the tonic spasms of the abdominal muscles.

At 4:15 p. m., four hours and forty minutes after the injection, the patient began to experience difficulty with respiration. A profuse bronchorrhea developed rapidly and the breathing grew rapid and shallow. The interne immediately administered gr. 1/150 of atropin sulphate by hypodermic, which, after a little while, seemed slowly to relieve the trouble, the bronchorrhea clearing up gradually, and the respiration getting slower and deeper.

At 4:30 p. m. I examined the boy. The respirations were still shallow, with a good deal of bronchorrhea and some cyanosis. The pulse was 140, weak and thready. Temperature, 102. All the muscles of the body were in a state of complete relaxation; handling of the patient and pinching of the skin of the legs and abdomen failed to produce the slightest muscular twitching. The abdomen was soft, and could be palpated without causing anything more than a feeling of soreness, which the patient referred to the pit of the stomach. The boy was fully conscious, could speak perfectly, could open his mouth wide and had no difficulty in swallowing water. He continued quiet during the afternoon, with no change save a slight improvement in the respirations; pulse ranged around 145.

During the night the patient was quiet and rested easily till midnight. At that time, twelve hours and forty-five minutes after the injection of the magnesium sulphate, the first symptoms of a return of the rigidity were noted in the right arm. The tonic spasms returned rapidly, and at 1:15 a. m. had extended to all the extremities and to the abdominal muscles. The boy screamed several times toward daybreak, but the nurse was unable to note any distinct convulsions. The temperature increased, going up to 101.5. Pulse and respiration about the same.

January 12: At 7 a. m. the temperature was 102; pulse, 144; respiration, 28. There was great difficulty in swallowing, and each effort to do so caused marked muscular twitchings, but no general convulsions could be noted as yet.

At 10 a. m. I examined the patient and the following facts were noted: Temperature, 102; pulse, 150 and thready; respirations, 30. The muscles of head, neck and abdomen were rigidly contracted. The head was bent slightly backward. There were no general convulsions, but there was distinct muscular twitching on handling. The patient responded to questions, but did not seem in full control of mental faculties. He complained constantly of pain, with groans and loud cries at intervals when the twitchings seemed greatest.

Second Injection.—As the first injection of the magnesium sulphate had relieved the patient's sufferings, and had afforded an interval of freedom from the muscular spasms with a certain amount of improvement, it was decided to repeat the injection in the hope that equally as good an effect might be obtained a second time. Accordingly, with the same precautions to avoid setting up convulsions during the transfer to the operating room, the boy was anesthetized in bed, and when fully under the anesthetic was removed to the operating room. Under strict aseptic precautions a second injection of a sterile 25 per cent. solution of magnesium sulphate (50 minims this time) was given into the lumbar spinal canal, the injection being made very slowly. Owing to the opisthotonos, which persisted under anesthesia, some difficulty was experienced in getting the needle into the canal; three trials had to be made before the cerebrospinal fluid was encountered. Four or five drops of this were allowed to escape in order to notice if any change had taken place, but it was found clear and normal in appearance.

Owing to the evident failure of the antitetanic serum to influence the course of the disease, no more of it was given. The rigid contraction of the abdominal walls under full anesthesia was noticed again this time. The patient was returned to the ward, having been in the amphitheatre forty minutes.

Result.—At 11:35 a. m., thirty-five minutes after the injection, all the muscles of the body were again completely relaxed, and the patient was resting easily, having recovered well from the anesthetic. The pulse was still high (158) and weak in character, and for this feature of the case digitalin, gr. 1/100, was ordered every three hours.

At 1:15 p. m., two hours and fifteen minutes after the injection, an attempt was made to nourish the boy by giving him a nutrient enema (℥2). While this was being given he was seized with a severe convulsion, lasting about fifteen seconds; during this attack the arms and legs became perfectly rigid, the jaws were tightly locked and the pulse was almost imperceptible. The convulsion passed away immediately on ceasing the enema, leaving the patient completely relaxed, save for the rigidity of the jaws, which lasted for about an hour.

At 2 p. m., three hours after the injection, trouble with the respiration set in, similar in character to that following after the first injection, and consisting of a profuse bronchorrhea with rapid and shallow breathing and some cyanosis. Atropin, gr. 1 150, was given, and the dose repeated in thirty minutes, which, with the application of external heat, relieved this con-

dition somewhat, but the patient was extremely weak. When I saw him at 3 p. m. the respirations were a trifle stronger and slower, and the muscular relaxation was complete. The pulse at this time was 168 and very weak. Nourishment by hypodermic, brandy m. xxx every hour, was added to the treatment.

A résumé of the clinical record for this day shows the following steady change for the worse in the boy's general condition, despite the fact that he had but one convulsion during the day:

Temperature ranged from 100.8 in the morning to 103 at 5 p. m.; the pulse ranged from 144 in the morning to 180 at 5 p. m.; respirations ranged from the same time from 26 in the morning to 36. The patient was unconscious from 3:50 p. m. After the convulsion following giving of enema there was complete muscular relaxation.

During the night the pulse steadily increased in frequency and weakened in force. Stimulation with brandy, m. xxx every hour, digitalin, gr. 1/100, every four hours, and atropin, gr. 1/150, every two hours, was of no avail, The pulse became weaker and weaker, reaching 192 at 10 p. m. The temperature gradually rose from 104 at 7 p. m. to 106 at 10 p. m. Respirations increased from 40 at 7 p. m. to 55 at 10 p. m.

The patient died at 3:50 a. m., January 13, forty hours and fifty minutes after the first injection of magnesium sulphate, without any convulsive attacks or muscular twitchings since the one caused by the giving of the nutrient enema fourteen hours previously. It was noted that the patient's heart failed before the respirations were affected, the pulse becoming imperceptible ten minutes before the last respiration was taken. Temperature postmortem was 108.2 by rectum. The body was claimed and no postmortem was allowed.

The second case occurred in the private practice of Professor Matas, who suggested the use of magnesium sulphate by Dr. Urban Maes, chief of clinic to the surgical department of Tulane University. The doctor has very kindly allowed me to report the facts, a courtesy which is greatly appreciated.

CASE 2.—Miss W., aged 24, gave negative personal and family history as regards present trouble.

Present Illness.—On Feb. 2, 1906, the patient was vaccinated under the strictest aseptic precautions by a dentist, and the wound sealed aseptically with sterile gauze held in place by adhesive strips. No trouble was experienced by the patient until February 19, seventeen days after the vaccination, when she noticed an inability to open the mouth freely. The dressing on the arm, which had not been touched so far, was immediately removed and the wound cleansed, a wet bichlorid dressing being applied. The vaccination was found to have taken well. An injection of 100 c.c. of antitetanic serum was given subcutaneously as soon as it could be obtained, but notwithstanding this the symptoms rapidly increased in severity.

Consultation.—When Dr. Maes saw the case in consultation, the following points were noticed: Temperature, 101; pulse, 120; respirations, irregular and about 30. The patient was suffering from marked convulsions, each one lasting from five to eight minutes, with from twelve to twenty minutes between each attack. The jaws were rigidly locked during the entire time. The general condition of the patient was fair.

Treatment.—In view of the fulminating character of the attack, and with a hope of obtaining some relief from the violent and frequent convulsions, it was determined to introduce the magnesium solution into the spinal canal. Accordingly, thirty hours after the first symptoms were noted, the patient was anesthetized locally, and 4 c.c. of a sterile 25 per cent. solution of magnesium sulphate was injected into the lumbar spinal canal, every precaution being taken to avoid infection. At the same time, wide excision of the wound was done under local anesthesia, and the wound saturated with powdered antitetanic serum. The patient's weight being estimated at 100 pounds, the amount of solution approximated 1 c.c. for every 25 pounds of weight. Slight difficulty was met in entering the spinal canal, and about ten minims of cerebrospinal fluid were allowed to escape.

Result.—On the next observation of the patient by Dr. Maes, seventeen hours after the injection, the following facts were noted: Temperature, 101; pulse, 160 and thready; respirations, spasmodic and irregular. Condition of muscles, tense, including the recti and digital muscles, the latter causing the characteristic *main en griffe*. The jaws were rigidly contracted. There was general cyanosis and the patient was comatose, with tetanic seizures, which were practically continuous, and involving the intercostal muscles and the muscles of the neck and diaphragm. No relief of convulsions had been noted to follow the injection.

Second Injection.—The condition of the patient being desperate and the family being anxious for the use of any means which might afford relief, a second attempt was made to control the convulsions, although Dr. Maes did not anticipate much good from the injection. With the patient in an almost moribund condition, a second injection of 4 c.c. of a 25 per cent. solution of magnesium sulphate was made seventeen and a half hours after the first. It proved of little value, and the patient shortly after succumbed to the disease, dying from respiratory failure, fifty hours after the appearance of the initial symptoms. The apex beat of the heart could be felt for three or four minutes after the last seizure involving the respiratory muscles. Cyanosis became marked, and the end came with eyes fixed and patient resting on head and heels in extreme opisthotonos.

Remarks.—At no time could it be noticed that any good had resulted from the use of the magnesium solution. Possibly the lengthening of the periods between each attack, which followed the first injection, might be attributed to this; the convulsions never ceased for a moment, however, and were equally as severe immediately after both injections as before.

COMMENTS.

So far as the use of the magnesium sulphate in these two cases is concerned, one showed a positive result in the control of the convulsions, while the other showed no change. This last failure, Dr. Macs and I both feel sure, was because of the use of too small a quantity of the solution in proportion to the severity of the attack, but on account of the limited experience we have had with the method Dr. Macs felt a natural hesitancy in exceeding the limits of dosage recommended by Meltzer. With a stronger solution or with a bigger dosage it is most probable that the spasms would have shown at least some slight abatement, and possibly might have been entirely controlled as in the first case. Further reference to the causes influencing the failure in this instance will be made later.

With the limited amount of data on hand it would be unfair to draw any conclusions in regard to the value of this line of treatment, but to our mind the simplicity of application is an appealing argument to its further trial, and we hope to be able to furnish more data as to its usefulness before long. As regards the two cases reported in this communication, the following points are deemed worthy of further emphasis:

1. Control of Convulsions by the Use of the Magnesium Sulphate Solution.—In Case 1 this was by far the most interesting feature, showing, as it did, the complete cessation of the muscular convulsions following the introduction of the magnesium solution into the spinal canal. At the time of both injections the rigid contraction of the abdominal muscles even under full anesthesia was especially notable, and the complete relaxation of these, as well as all the muscles of the body, forty minutes after the injection, verified to the fullest degree Meltzer's observations of the paralyzing effect of magnesium sulphate on the motor tracts of the spinal cord. The lasting effects of this paralysis were shown conclusively when four hours and a half later all attempts to induce muscular twitchings or convulsions, such as handling of patient, pinching of skin of legs and abdo-

men, failed to produce any result. The patient at that time was in a state of complete relaxation, could open the mouth wide and could swallow, and was conscious and talked freely to the attendants. The duration of the relaxed state for nearly thirteen hours before a return of the rigidity gave an interval of rest which could never have been obtained by any other mode of treatment, and during which the patient distinctly gained ground, only to fall back again on the renewal of the convulsive attacks. Had the second injection been given earlier, at the time of the first return of the rigidity, the interval of rest might have been lengthened indefinitely and a better final result might have been accomplished.

Case 2 was one of the fulminating type of the disease, with a rapid onset of severe symptoms and an immediate succumbing to the effects of the tetanus toxin. The long interval of time elapsing between the primary wound of vaccination and the appearance of the tetanic symptoms in all probability was not the true period of incubation, for, though the patient strenuously denied having touched the wound, it requires no great stretch of imagination to presume that the dressings were partially displaced at some time from a curiosity to see how the vaccination was "taking," and that at this time the tetanus germ gained entrance. In view of the extremely rigid aseptic precautions taken at the time of vaccination, and the long period of incubation before the onset of so severe an attack of tetanus, it is more reasonable to suspect an infection during the time in which the vaccination was taking than to imagine so unusually severe a fulminating case of tetanus following a seventeen-day period of incubation.

The failure of the magnesium sulphate to control the convulsions in this case is explainable in two ways: First, the fulminating type of the disease, with the rapid giving way of the patient's resisting powers, made it a hopeless case from the beginning; consequently the chances of a failure by any plan of treatment were largely increased. Second, the size of the dose of the magnesium was that ordinarily used by Meltzer for inducing spinal anesthesia for operative cases; consequently it was far too small for use in a pathologic condition whose main symptom consists of a hyperexcitation of the motor centers of the cord. We might just as well expect the same dose of chloral given to produce sleep to calm the ravings of delirium tremens as to expect the small amount of magnesium sulphate recommended for anesthetic purposes in a healthy person to have any calming effect on the hyperexcited spinal cord centers of tetanus. I firmly believe that if the quantity of magnesium sulphate given in this instance had been twice as much a marked influence on the convulsions would have been noted. Further experience with the use of the solution will bring a better knowledge of the dosage to be employed according to the severity of the attack. This was partly instanced in the first case, when, in an apparently mild case, a slightly stronger solution (1 c.c. to every 20 pounds) than the one recommended for anesthetic purposes (1 c.c. for every 25 pounds) proved sufficient to produce the desired effect.

2. Respiratory Disturbances Following the Injections.—The development of late respiratory difficulty following both injections of the magnesium in Case 1 was the only annoying feature of the treatment. Professor Matas had hoped that by the slow introduction of the solution into the spinal canal the unpleasant respiratory disturbances mentioned by Meltzer might be overcome. At the time of the injection everything was in readiness for the induction of artificial respiration in case it should be needed, but it was only after the lapse of several hours (4½ after the first injection, 3 after the second) that this trouble put in an appearance. The profuse bronchorrhea and rapid, shallow respiration which characterized it were very alarming, but administration of atropin, gr. 1/150, repeated in thirty minutes, checked it in a short while, only the two doses of atropin being given. The only explanation of the late appearance of the respiratory disturbance which we could suggest was an involvement of the respiratory center from the spreading of the paralyzing effect of the magnesium up to the medulla; this would explain the marked rise in the pulse rate which began about this time and which was due probably to a partial paralysis of the pneumogastrics, with a consequent rapidity and weakness of the heart action. In conjunction with the slow introduction of the solution into the canal, we would suggest propping up the patient in bed the moment muscular relaxation comes on, so as to limit by gravity the action of the drug to the cord proper. This procedure has been used to limit the action of the drug in intraspinal anesthesia with cocain. It is likely that in this way, with a better knowledge of the exactness of the dose required, the respiratory disturbances may be eliminated to a large degree.

In all cases to be treated by this plan it is advisable to have on hand some apparatus for producing artificial respiration, from the time the injection is made until the muscular relaxation is at its height. The injection should be made slowly, at least ten minutes being taken to introduce 4 c.c. of the solution into the canal. On the appearance of muscular relaxation the patient should be immediately propped up in bed to the semirecumbent position and kept in that position for several hours. If bronchorrhea, or rapid, shallow respirations with cyanosis appear, atropin, gr. 1/150, should be given and the dose repeated, if necessary, in from 30 to 40 minutes. If the condition becomes worse, artificial respiration should be used, and, as a last resort, withdrawal of cerebrospinal fluid and its substitution with an equal amount of sterile saline solution will be indicated to dilute the action of the drug. Meltzer has tried this with good results.[2]

That this respiratory disturbance is not permanent in character is shown by the fact that in Case 1, in which the trouble was experienced and relieved, the respiratory center was the last to fail, the heart apparently stopping fully eight minutes before the last gasp was taken. The absence of respiratory disturbances in Case 2 is another proof of the insufficiency of the dose used, as it is hard to imagine the development of signs of paralysis of the respiratory centers without some effect having been produced on the motor tracts of the cord. The respiratory failure at the end, in this instance before the heart stopped, was due to a mechanical interference with the muscles of respiration rather than to a failure of the centers in the medulla. Failure of the respiration during a convulsion is one of the usual causes of death in tetanus, but it has never been considered as being due to a failure of the respiratory center itself.

3. Death of Patient (Case 1) in a State of Complete Relaxation.—This fact, it seems to us, deserves particular emphasis, being, as it is, so out of the ordinary sequel of events in cases of tetanus ending fatally. We are so

2. Haubold and Meltzer: The Journal A. M. A., March 3, 1906.

accustomed to see the patient pass rapidly into a series of tonic convulsions, which increases in severity and frequency as the end comes, with death during an unusually severe one, that we are apt to attach a greater importance than they deserve to the muscular spasms as causes of a fatal result. It should always be borne in mind that the convulsions are but expressions of the action of the toxins which have been absorbed by the system, and that the result depends entirely on the quantity of these which have gained entrance to the body, provided, of course, that the patient does not die from mechanical interference with respiration by the convulsions. Case 1 bears out this observation of the majority of authorities on this point, for here we had an attack in which the convulsions were distinctly limited in number, mild and short in character, with two long intervals of complete muscular relaxation, and yet the pulse and temperature kept going up slowly and steadily, showing increasing effects of the toxins on the nervous system. Were it not for the lessened chances of respiratory failure during the convulsions, it would be a question whether any lasting good is accomplished in checking them any more than there would be in knocking out the temperature in typhoid in the hope of thereby curing the disease. It seems, therefore, that the value of this or of any other plan of treatment for tetanus which aims at a control of the muscular spasms is only palliative in nature, and that our efforts should rather be directed to the finding of some means of neutralizing the toxins of the disease once it has developed. When that has been accomplished the muscular convulsions will disappear of themselves. For the present, however, the use of the magnesium sulphate to control the spasms, and thereby to prevent death from respiratory disturbances, should be given further trial, on account of its ease of application and its comparative harmlessness when judiciously and cautiously used.

DIAGNOSTIC VALUE OF THE LEUCOCYTE FORMULA IN PERTUSSIS.*

FRANK SPOONER CHURCHILL, M.D.

Assistant Professor of Pediatrics, Rush Medical College (In affiliation with University of Chicago).

CHICAGO.

IMPORTANCE OF BLOOD EXAMINATION.

Whooping-cough is a far more serious disease than is generally supposed, and its diagnosis in the early stage is a matter of great importance, as it is at this time that the infection is most frequently spread. Any measure, therefore, which may help to its early recognition is worthy of careful study and investigation.

The examination of the blood in this disease, as in many other infections, has unexpectedly shown a condition which, in a certain number of cases, is abnormal and perhaps of diagnostic value. This condition consists of an increase, both relative and absolute, in the number of the lymphocytes—a lymphocytosis. Several series of cases have been reported showing this increase in these cells, but the number on record is still comparatively small. Therefore I have made some investigation on this subject with the object of determining how frequently this condition is found, how early in the course of the disease it occurs and hence of how much value blood examination may be in early diagnosis.

* Read at the Annual Meeting of The Mississippi Valley Medical Association, Indianapolis, Oct., 1904.

REVIEW OF LITERATURE.

The first investigation of this question was by Frohlich[1] in 1897. He studied the blood in 55 cases, total counts being made in all; differential in 15. He found a general leucocytosis in all but 2 cases, and a lymphocytosis in 8 of the 15 examined. He came to the conclusion that this increase in the lymphocytosis was of diagnostic value in atypical cases, but that its value in ordinary cases was lessened by its appearance. As 13 of his patients were examined during or after the third week, however, and only 2 in the first week, his opinion as to its significance in the early stages seems hardly justified.

Meunier[2] made total counts in 30 cases and differential in 10 of these. He found that a lymphocytosis occurred early in all cases and considered it of great diagnostic value and of practical importance in preventing the spread of the disease, e. g., in schools.

De Amici and Pacchioni[3] studied carefully 18 cases, 8 examinations being made in the catarrhal stage, 13 in the paroxysmal and 7 in the period of decline. A lymphocytosis was found in 15 of their 18 cases. They consider it of practical diagnostic value.

Stengel and White[4] reported 3 cases, all of which showed a lymphocytosis.

Wanstall[5] examined 19 children, all suspected of being in the catarrhal stage of whooping-cough. Later 15 of these proved to be pertussis. In 11 cases there was a lymphocytosis. He concludes that there are good grounds for the statement that an increased percentage of lymphocytes is of diagnostic value, occurring, as it does, before the onset of characteristic symptoms.

Muggia and Bertolotti[6] reported 35 cases in which they found a predominance of large mononuclear elements.

Isolated cases have been reported furthermore by Cabot,[7] Steven,[8] and others, which in general coincide with the above observations.

I now add to these reports 36 cases, 23 from my clinic at Rush Medical College and from private practice, and 13 from Dr. W. L. Baum's service at Cook County Hospital. The details of these cases briefly are as follows: The patients range in age from 6 months to 17 years. The total leucocyte count has been made in 29 cases and a general leucocytosis found in all but one. The counts range from 10,000 to 112,000. Differential counts have been made in all cases, 30 showing a lymphocytosis; 15 out of 16 patients examined in the catarrhal stage had a lymphocytosis. The percentages ranged from 34.3, in a 5 year old child, to 93 in a 4 year old. The latter was the one with a total of 112,000, was a severe case, and came to the clinic at the height of the disease. A count made 16 days later showed a total of 32,600 with 61 per cent. of lymphocytes, and great improvement in all the symptoms.

We have now for study 100 cases of whooping-cough in which differential counts of the blood have been made. There are also available total leucocyte counts from more than a hundred. I have grouped the reports on these

1. Fröhlich: Jahr. f. Kindhlk., 1897, vol. xlv, p. 59.
2. Meunier: Compt. Soc. de Biologie, 1898, vol. l, p. 103.
3. De Amici and Pacchioni: Clin. med. Ital., 1899, vol. xxxiv, 52; also, Abs. Archiv. f. Kindhlk., 1902, xxxiv, 105.
4. Stengel and White: Univ. Penn. Med. Bull., 1902, vol. xiv, p. 318.
5. Wanstall: American Medicine, 1903, vol. v, p. 62.
6. Muggia and Bertolotti: Riv. di Clin. Ped., February, 1903; also, Abs. Med. Record, 1905, vol. lxvii, p. 552.
7. Cabot: "Clinical Examination of the Blood."
8. Steven: Lancet, 1902, vol. ii, p. 791.

cases according to age, averaged the total leucocyte count, the percentage of lymphocytes and polymorphonuclears and constructed curves on these averages. I have averaged the percentage of these two types of cells also according to the time of examination, catarrhal stage and paroxysmal stage, and plotted their curves. For purposes of comparison I have introduced into the charts normal curves based on estimates for different ages given by Karniski[9] and by Carstagen.[10] The importance of taking into consideration the age of the child in making differential counts has not been sufficiently emphasized by the authors quoted. The necessity for so doing is evident from a glance at the normal curves,

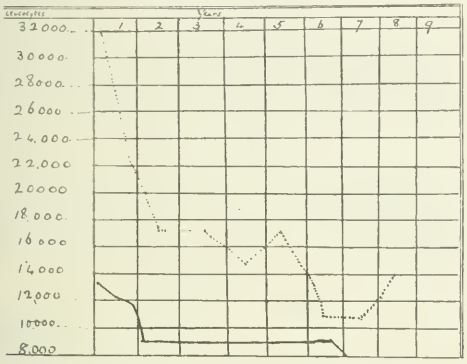


Chart 1.—Total leucocytes: —— normal; .... catarrhal stage.

which show the range of lymphocytes to be from 55 per cent. during the first year to 30 per cent. in the ninth year, and the neutrophiles for the same periods to range from 33 per cent. to 56 per cent. Thus a lymphocyte count of 50 per cent. at 6 years would be of considerable significance; at 1 year it would be of no significance. This variation in the leucocyte formula must be borne in mind in all blood work among children, especially in the present study.

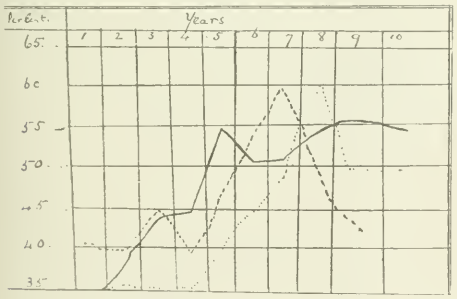


Chart 2.—Polymorphonuclear curve: —— normal; - - - - - paroxysmal stage; .... catarrhal stage.

Inspection of the total leucocyte chart (Chart 1) shows a general leucocytosis at all stages, most marked during infancy and early childhood. The comparatively high count during the first year is due to the occurrence of one count of 89,000.

The polymorphonuclear curve (Chart 2) during the catarrhal stage as a rule is relatively below the normal;

9. Karnizki: Archiv. f. Kind., 1903, vol. xxxvi, p. 42.
10. Carstangen: Jahrb. f Kindhlk., 1900, vol. lii, p. 215.

the total count, however, in some years is so high, e.g., in the second year, that absolutely there is an increase over the number of the cells normal to the age. During the paroxysmal stage the curve is above the normal except during the fourth, fifth and eighth years. Concerning this increase during the paroxysmal stage I will speak later.

The chief interest centers in the lymphocyte curve (Chart 3). It follows in a fairly close parallel the downward trend of the normal curve but always above it, the increase being greatest during the first 4 or 5 years. Furthermore the increase is greater during the catarrhal stage than during the paroxysmal stage. At first sight this seems somewhat unnatural; if the pertussis infection cause a lymphocytosis, one would expect this lymphocytosis to increase with the severity of the disease, whereas it apparently diminishes. I believe that among the cases examined during the paroxysmal stage are some with complications, e. g., bronchitis, perhaps lobular pneumonia, and that these complications caused an increase in the polymorphonuclears and a corresponding decrease in the lymphocytes at this period of the disease. The increase in the polymorphonuclears has already been mentioned. So far as possible, I have studied by themselves the cases with complications, but

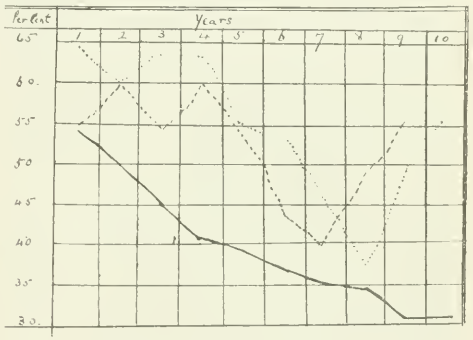


Chart 3.—Lymphocyte curve: —— normal; - - - - - paroxysmal stage; .... catarrhal stage.

the details are not always given with clearness and some complicated cases may have been included in the hundred cases regarded as uncomplicated. Whatever the cause, there appears to be a diminution in the lymphocytes and an increase in the polymorphonuclears during the paroxysmal stage.

While the average of the lymphocytes is thus above normal in each year, there are individual cases of course which show no increase. In actual figures, however, 87 of the 100 cases (87 per cent.) show a lymphocytosis at some time during the course of the disease. Analyzed as to time of appearance, we find that of 42 cases examined during the catarrhal stage 39, or 93 per cent., show the increase. As it is particularly in this stage that we wish accurate information it is gratifying to find such a large proportion of cases showing this characteristic condition of the blood at this time. How early the infection may cause this change is evident from the following: Eight cases examined in the first week all showed a lymphocytosis; one infant, aged 20 months, had a lymphocytosis of 65 per cent. after 5 days of cough; one child, aged 2 years, had a lymphocytosis of 60.3 per cent. after 3 days of cough. The last case was one of a family of 3, and the other 2 children already

had whooping-cough; hence the early date of the blood examination.

In view of these observations made by so many different workers, there can be no doubt of the frequent occurrence of a lymphocytosis in the early stages of whooping-cough. The infection apparently has no effect on the eosinophiles.

It remains to be asked whether or not we find this blood change in other conditions likely to be confused with pertussis. It must be remembered that in the blood as well as in the nervous system and indeed in all parts of the unstable infant organism slight causes produce more marked and irregular results than they do in the more stable adult organism. Thus the blood and especially the leucocyte formula is easily upset in early life. It shows a marked tendency to revert to the fetal type, especially in any prolonged wasting disease, e. g., hereditary syphilis. In such conditions, we frequently find an increase of lymphocytes above the standard normal to the age. In general glandular enlargement, e. g., I have repeatedly found a lymphocytosis. Stengel and White have found the condition in occasional cases of pneumonia, also in typhoid, though in the latter at certain periods of the disease a lymphocytosis is the rule, as has already been shown.[11] The same authors also found a predominance of lymphocytes over neutrophiles in occasional cases of varicella, of enteritis, in rickets, eczema, focal epilepsy, convulsions, spastic cerebral palsy and pleural effusion.

None of these conditions, however, are difficult to distinguish from whooping-cough. Furthermore, the increase in lymphocytes is only occasional. Lymphocytic leukemia alone has a constant and high percentage of lymphocytes, and this disease can be easily differentiated.

It is in children with a hard violent cough due to bronchitis, pharyngitis, laryngitis, especially of influenzal origin, that we are most often suspicious of whooping-cough. And it is in these very conditions that a blood examination is of value, for while we often find a leucocytosis, there is no lymphocytosis, as has been shown by the observations of various authors. Stengel and White[4] report in 6 cases of bronchitis with a hard cough the following averages: Total leucocytes, 12,911; lymphocytes, 29.9 per cent.; polymorphonuclears, 68 per cent.

Wanstall's 4 cases, which failed to develop into whooping-cough, had the following averages: Lymphocytes, 33 per cent.; large mononuclears, 7.8 per cent; polymorphonuclears, 56.5 per cent.; eosinophiles, 1.9 per cent.; mast cells, 0.3 per cent.

Meunier[2] found no such change in the blood in bronchitis or tracheitis.

The following cases in my practice are of interest in this connection:

Case 1.—A 5-year-old boy had been coughing hard for five days, after having been exposed to pertussis. His parents, making preparations for a European trip, were naturally anxious to know the nature of the cough. Physical examination showed considerable bronchitis. The blood was as follows: On April 5 the lymphocytes numbered 26 per cent. and the polymorphonuclears 73 per cent. On April 12 the lymphocytes were 31 per cent. and the polymorphonuclears 66 per cent. On April 19 the lymphocytes were 42 per cent. and the polymorphonuclears 55 per cent. The comparatively high polymorphonuclear count at the first examination with an active bronchitis will be noted, also the gradual resumption of the proportions normal to the age with the disappearance of the bronchitis. The child never developed pertussis.

Case 2.—Another case was that of a mother whose child was ill with whooping cough. She developed a severe paroxysmal cough without apparent cause. Her blood at the end of a week was as follows:

Total leucocytes	10,500
Lymphocytes	34.6 per cent.
Polymorphonuclears	63 per cent.
Eosinophiles	2.5 per cent.

Her cough subsided in about a week.

Case 3.—A child, aged 6, whose brother had pertussis began to cough slightly; after about a week her blood was as follows:

Lymphocytes	39 per cent.
Polymorphonuclears	55 per cent.
Eosinophiles	3 per cent.

She never developed pertussis.

Evidently the blood in those conditions most likely to be confused with whooping-cough, does not show a lymphocytosis. In the absence of the phenomenon in those conditions, and its almost constant presence in pertussis itself, the opinion seems warranted that its presence is a factor of great diagnostic value.

COMPLICATIONS.

The effect of complications such as pneumonia on the blood picture, has not been studied in sufficient detail to warrant conclusions. Fröhlich[1] is of the opinion that complications have no effect. DeAmici and Pacchioni[3] found pneumonia in 4 of their cases, the counts being as follows:

Age in years.	Percentage of Lymphocytes.	Percentage of Polymorph.	Stage of Disease.
2	42	56	Catarrhal
2	68	32	Paroxysmal
1	56	43	Catarrhal
	19	80	Stage of decline

The most significant case is the last with a reversal of the leucocyte formula in the stage of decline resulting in high neutrophile count.

My own cases with complications are only 4 in number, as follows:

Age.	Percentage of Lymphocytes.	Percentage of Polymorph.	Stage of disease.	Complication.
6 mos.	30	69	Late.	Varicella, pustules
8 mos.	38.5	62	"	Bronchopneumonia
3 yrs.	33	62.2	"	Gonococcus vaginitis
17 yrs.	33	66	"	Lobar pneumonia

The predominance of polymorphonuclears in all cases will be noted. Cabot[7] and Steven,[8] on the other hand, both report cases of undoubted pertussis with bronchopneumonia which show a high lymphocyte count. Evidently the effect of complications on the leucocyte formula must be left for future investigations.

It will be observed that in this study I have used the term lymphocyte and have not attempted to differentiate between large and small cells of this type. There can be no doubt that a difference between these does exist; but, as there has been no uniformity of classification among the authors quoted and as the personal equation enters so largely into what constitutes large and small, it has seemed to me simpler to group the two varieties under one head, combining the total percentages in those cases which authors have differentiated into large and small. *Apropos* of this general subject Cabot[7] discussing the terms "lymphocytes proper" (large or small) and the other "large mononuclears cells" says: "As no clinical importance has ever been attached to the so-called large mononuclear cells, and as they make up in the great majority of cases but a few per cent. of all the leucocytes, it seems to me best at the present time to include them for practical purposes within the lymphocyte group." So far as the cases in my own clinic and my private practice are concerned there was in all cases a marked predominance of undoubtedly small cells.

11. Churchill: Boston Med. and Surg. Jour., 1903, vol. cxlvii, p. 692.

TECHNIC.

The usual Thoma-Zeiss instrument has been used in my work in making total counts. In staining, Ehrlich's, Jenner's or Wright's stain has been used. I have been particularly fortunate with Wright's stain. No heating is required, the process takes but little time, is very simple, and can be done by one's office assistant. When the leucocytosis is very marked no total count is necessary for one who has had considerable experience in blood work, as he can tell from the dried specimens that a leucocytosis is present. This is of great advantage in working among children where it is often extremely difficult to fill the white counter exactly, as must be done if the count is to be of any value.

I do not wish to appear to advocate careless or inaccurate work in examining the blood of children. It is only when the leucocytosis is extreme that it is safe to dispense with the total count, and then only by one who has had much experience. The undergraduate and the graduate in medicine during the first years of actual practice must use his counter. By constant study of his dried specimens, however, he will gradually learn to measure approximately the degree of leucocytosis and furthermore will learn much more of the blood as a whole than he will from mere total counts either of erythrocytes or leucocytes.

CONCLUSIONS.

1. A general leucocytosis is present in almost all cases of whooping-cough.

2. A lymphocytosis, i. e., an increase in the number of lymphocytes is found in about 85 per cent. of cases at some time during the course of the disease.

3. A lymphocytosis is found even more constantly during the early or catarrhal stage, over 90 per cent. showing the phenomenon at this time.

4. A lymphocytosis is found usually in those conditions difficult to distinguish from whooping-cough.

5. Therefore, the presence of a lymphocytosis in a child with a hard persistent cough is a factor of great diagnostic value. It is also of prophylactic importance inasmuch as it can be utilized to prevent the spread of the disease by leading to the prompt isolation of the patient.

6. The child's age must be taken into account in estimating the importance of the lymphocyte percentage.

I wish to express to Dr. W. L. Baum my thanks for his courtesy in placing at my disposal the work done in his wards, and to my assistant, Dr. Alex. C. Soper, Jr., for much valuable help in the blood examinations.

HOW TO SUTURE THE WOUND IN EARLY OR INTERVAL OPERATIONS FOR APPENDICITIS, SO AS TO SHORTEN THE INDOOR CONFINEMENT TO ONE WEEK.

CLINICAL EXPERIENCE IN PROOF.*

J. E. SUMMERS, Jr., M.D.
OMAHA, NEB.

Besides the all-important question as to the dangers of an operation, the next in importance with the patient and friends is the necessary time of confinement in bed and of interference with business and every-day occupations. It is surprising how many people refuse absolutely, or put off from time to time, an advisable operation; although they know from common knowledge that the danger is exceedingly slight, yet they "can not afford the time." Having in many instances known of persons whose procrastination in this direction has cost them their lives, great jeopardy or much unnecessary suffering, I have been following the several recognized surgical procedures in the diseases of the appendix in order to choose for my own guidance the safest and shortest cut toward recovery and a return to customary duties.

Most of the professional grief I have suffered was during the growing period of knowledge by the medical profession and the laity in regard to the time for operation in acute appendicitis. The family physician either did not appreciate operative interference, except as a "last resort," or else did not recognize the meaning of certain ominous symptoms, even of the first few hours, until perhaps during the fatal lull an exploration demonstrated the true condition. The people, of course, had to be educated. The facts about appendicitis remind me forcibly of the treatment of laryngeal diphtheria in the preintubation-antitoxin days. I have tracheotomized more than sixty cases of this kind as a "last resort," this being called for by the physician and family, and the mortality was frightful. When I could get the chance to do an early tracheotomy, a fair percentage of the children recovered. So it has been with appendicitis. To-day with early operation in acute cases and timely operation in chronic and interval cases the disease is being robbed of its terrors; in fact, is rather joked about. Added to what has been referred to regarding a judicious time, an improved technic has done most to save life and shorten convalescence.

THE AUTHOR'S TECHNIC.

I will briefly describe what has been to me a most satisfactory technic in operating within the early hours of mild attacks of acute appendicitis, and in all cases between acute attacks, i. e., during quiescent periods, as well as in people, subjects of those indefinite, not always well-defined symptoms, sometimes simulating stomach trouble, indigestion and colic. It would be a waste of time to attempt a description of all of the different technics advocated for the operative treatment of the class of cases under consideration, as everybody is more or less familiar with them.

The Incision.—In the first place it should be distinctly understood that the abdominal wound must never be closed without providing for dependent drainage in any form of appendicitis, unless the operator knows that the inflammatory process has been confined within the appendix. I have been experimenting somewhat so as to determine for my own action what incision will best accomplish the desired end, i. e., removal of the appendix, and how to close this incision so as to admit of the earliest getting up and return to every-day habits. The incisions employed have been that through splitting the right rectus abdominalis muscle; the vertical incision behind the rectus advocated by Kammerer and others, and the McBurney incision, sometimes modified when more room was required, as recommended by Weir and Harrington.

Because this latter incision gives the nearest approach to the appendix and affords sufficient room for the intra-abdominal technic in about all cases which should be closed without drainage, and because this incision can be closed so that hernia is absolutely not to be expected, and the patients are up and out and in many cases at

* Read before the Sioux Valley Medical Association, Sioux City, Iowa, Jan. 19, 1906.

work after seven days, I now employ it and give it preference.

Suturing Material.—In order to simplify matters to this extent it is essential to use proper suturing material and so to introduce the sutures that at the end of the time specified your patient will surely be free from all complications. For this operation catgut is the only suturing material used. We are all prone to change our suturing materials too often, using perhaps within one year catgut prepared after several methods. When a catgut is found which, when prepared, is sterile, strong and easy to handle, the first essentials are at hand. When a wound requires anything greater than very slight tension in its closure, catgut is not the material for its closure. Some wounds, of course, require longer time than others in their repair, because of the different natures of the tissues brought into contact. An example of this is when in operations for the radical cure of inguinal hernia the internal oblique muscle is brought into close contact with Poupart's ligament, or again when heavy flaps are approximated and need strong support until Nature's repair has taken the weight off the supports. Catgut when used under such circumstances must be slower of absorption and, therefore, of large size or a chromatized material is employed. I use a cumolized gut and in the closure of a McBurney incision use two sizes, Nos. 1 and 2; No. 1 in children and in all reasonably thin adults; No. 2 in the heavier walled individuals.

Method of Suturing.—The wound is sutured from peritoneum to skin, inclusive, by a one-string continuous stitch. Commencing at the inner angle, the peritoneum is closed by a simple continuous or button-hole stitch. When the outer angle is reached, the needle (a full curved, round one, spear pointed) is passed from below upward through the transversalis and internal oblique muscles, the needle emerging one inch outside of and above the outer angle of the separation in these muscles. This manipulation pulls the closed and puckered wound in the peritoneum above and somewhat outside of the line of the cleft in the muscles. These muscles are now closed from without inward by a few deep (including all muscle) continuous stitches. Unless the suture brings the wound in the muscles nicely together, it is always better to approximate it more accurately by bringing the gut back to the outer angle as a superficial continuous stitch passed sufficiently deep to accomplish the object.

If the deep continuous stitch through the muscles has sufficed, the needle is passed from the inner angle of this closure superficially through the internal oblique muscle downward and brought out at the lower angle of the wound in the fascia of the external oblique muscle. This fascia is then closed either by a simple continuous stitch from below upward, which I prefer, or else the fascia may be made to overlap and in this way give firmer support. I think this overlapping of the fascia is unnecessary, but I sometimes employ it as a variation. If the superficial stitches in the internal oblique have been added to the deep stitches, the needle is passed superficially through the internal oblique muscle from the outer angle of the muscle wound to the upper angle of the wound in the external oblique, and this latter is closed from above down by the same methods as just given. I close the skin with either a compound button-hole stitch or else by a subcuticular stitch. For the former the needle is passed from within so as to come out opposite the angle of the wound and about ¼ to 1/3 in. away, and from this point the continuous suture which definitely closes the wound begins. For the subcuticular stitch the needle is brought out in the angle of the wound and the start made at this place; the final knot is tied within the opposite angle. The whole procedure from the commencement of the operation to the closure of the wound takes from eight to twenty minutes, according to the difficulties found within the abdomen and the thickness of the abdominal wall.

No. 1 plain catgut, Van Horn cumolized, can be brushed off the skin in five days; No. 2 in six or seven days. For years I had been sending my uncomplicated appendicitis cases home in ten to twelve days after operation, and have yet to see or hear of a hernia resulting. The active demand for beds emboldened me to look for a shorter confinement of my patients. After fixing on the technic briefly detailed as the most appropriate for the purpose, I have selected 61 cases as suitable, and except 5 who were detained several days because of complications independent of the operation, as bronchitis, diarrhea, etc., all have been discharged on the sixth or seventh days following operation, many being at home, perhaps fifty to one hundred and fifty or more miles away, one week from the day they left home. In cases of several farmers, I have known of their being at work on the farm on the seventh day.

RESULTS OF EXPERIENCE.

Put a well person in bed and keep him there and insist on his lying very quiet; keep this up for seven or eight days, and then tell him to get up, and see how he will wobble. My practice is to allow all of my simple appendicitis cases to suit their own comfort and desires as to the position in bed after the bowels have been made to move, i. e., forty-eight hours following the operation. There is no reason why these people may not leave the hospital on the fifth, sixth or seventh days, and it is my practice to send all such uncomplicated cases out of the hospitals on the seventh day.

I would not hesitate to allow a patient with an ordinary case of appendicitis operated on as described to travel to his home three days after operation were there any very important reason for such a course. The worst to be feared might be a little parting of the skin edges, and this can not happen if the wound is made secure from the bottom to top surface. And why not? The people for whom I would recommend the employment of the technic described are "walking cases." Many are not at all ill, but are suffering from somewhat debilitating or uncomfortable symptoms of a more or less chronic type or of a recurrent, sharper nature. If the symptoms of inflammation in the appendix are acute they must not be severe or of more than a few hours' duration if the McBurney incision is to be employed. If, after making this incision, evidences of infection outside of the appendix are found, the real and only safe work must be done through a vertical incision near the median line. Whenever the incision advocated is proper, the usual fair physical condition of the patient and the short anesthesia required make the affair, from a surgical standpoint, of little moment. The intra-abdominal repair is safe in forty-eight hours. I have done the McBurney incision in hundreds of patients, a few of these being pus cases, but it is a dangerous incision for this latter class even in the hands of the most experienced.

It would not be proper not to admonish against any one making light of a surgical operation. The safeties we are able to surround our patients with to-day are

rery different from those of years ago, and seemingly vonderful things are done, yet in spite of all our modern cience and art we still have the same old man to deal vith, and he may have idiosyncrasies and defects not easily, if at all, discoverable until the unexpected hapens.

No one who has not suffered from having one or more f what Sir James Paget called the "calamities of surery" occur in his professional experience can fully ppreciate the dangers he is apt to encounter. As a varning I would emphasize that many, if not all, of hese calamities follow sins of omission or commission n the part of the professional attendant.

TRANSMISSION OF BUBONIC PLAGUE BY SHIP RATS.

AUGUST STRAUCH.
CHICAGO.

I made a voyage from Austria to Brazil in 1901 on he steamer *Gundulic* under the worst conditions maginable. On the first night after leaving the Austrian harbor of Trieste the sight of numerous rats astonished me. A few days later we arrived at Alexandria, Egypt, which then was plague ridden. While there we were in quarantine, that is, without any direct communiation with the land in order to avoid troublesome measures in other ports. We took no merchandise, except ome provisions which were hauled on board with ropes n baskets and dirty sacks from barges.

After a stay of several days we left for Tangier Morocco), St. Vincent (Cape Verde Islands) and Pernambuco (Brazil). When we approached the warmer limate I noticed that the noise made every night by the ats grew less and finally ceased. After we left Pernamuco for Rio de Janeiro, our cook and the steward beame ill with foudroyant symptoms of fever, adynamia, eadache and vertigo, a syndrome which did not permit f a definite diagnosis. The next morning both patients resented very painful swellings of the right crural ymph glands.

In the cook the swelling increased very rapidly and pread to the iliac glands, which in four days were of he size of two fists. The surrounding tissues and the kin were hard, infiltrated and reddened, similar to rysipelas, so that the whole looked like an appendicitis umor ready for perforation. After six days the patient ied and was buried at sea. At a postmortem incision f the swelling a hemorrhagic gelatinous infiltration nd edema of the panniculus adiposus, the perglandular issues, with partly necrotic glands were found, but here was no suppuration within the reach of the section.

In the steward it was interesting to find the port of ntrance of the pest bacilli in the form of a small hemorhagic spot much like a flea bite on the second toe of the ight foot, which changed under my eyes in a few hours o a blood blister of the size of a lentil. Pest bacilli ould be found in its contents. The bubo was only of oderate size and contained numerous plague bacilli lmost in pure culture. This patient recovered.

From the occurrence of the primary bubo, as well as rom the plurality of the cases, I was able to recognize he character of the disease, especially as I had had an pportunity of studying it in the plague hospitals of Bombay in 1900 and 1901. I made further inquiry mong the crew, in order to determine the source of this utbreak which occurred fully one month after our leaving a pest-ridden harbor. This revealed the fact that as early as six or nine days, or may be longer, before the outbreak of the disease the sailors had noticed dead rats or sick rats in groups.

In spite of the numerous rodents on vessels, dead rats are rarely found, and then only in the remotest hiding places and always singly, never in groups, because the live ones eat them immediately. In our case evidently too many had died to be eaten by the surviving rats.

I learned that the cook repeatedly removed corpses of rats with his fingers and, holding them by the end of the tail, showed them in sport to the other men. About three days before he fell sick he had with his bare feet killed two rats that had been dying with convulsions.

My researches, therefore, fully explained the cessation of the nocturnal noises. Every day during our voyage from Pernambuco to Rio de Janeiro new dead rats in groups or singly were found and thrown overboard by means of long fire tongs or wooden sticks. Prophylactic measures were instituted. The places where dead rats were found were carefully disinfected. The patients were isolated. The daily routine work in the hull of the steamer was stopped altogether or reduced to the indispensable minimum necessary to manage the ship. Nobody was allowed to sleep in the magazines of the hull because of the many rats. As a result of these precautions no new case of plague occurred, not even at the period of greatest danger of infection, when the epizootic among the rats reached its highest point.

The most efficient and prompt measures were taken after our arrival in quarantine at Rio de Janeiro; the crew was immunized with Yersin's antiplague serum; the rats were exterminated by sulphuric vapors; the whole boat was repeatedly disinfected, almost with the accuracy employed in an operating room. Nevertheless, during the first days of our stay in that harbor, we continued to find rats which had died from plague and not from the effects of the sulphuric vapors.

It became evident that it would be difficult to eradicate all the rodents while the cargo was still on board.

After a while the crew became indifferent to the rules of personal prophylaxis and two more cases appeared twelve and thirteen days after the immunization with antiplague serum.

Among the cargo a number of more or less mummified rats were found again, and the fact that in both men the primary bubo developed in the axilla showed that they had become infected while handling the goods, which evidently were soiled with excretions of the sick rodents. The men did not wear gloves to protect themselves against infection, as they had been instructed to do.

The older patient had a number of lesions in his right palm, presumably the port of entrance of the plague bacilli; in the next five days a bubo of the size of almost a hen's egg developed in his right axilla. The fever, however, was not high, and after the second day of his illness he felt comparatively well. A microscopic specimen of the juice of the affected glands showed a few typical plague bacilli.

The second patient was under my observation only 48 hours. He had an extremely painful, somewhat swollen lymph gland in the right axilla many hours before the onset of fever or other general symptoms. A plague carbuncle developed very rapidly with a large, flat, partly hemorrhagic multilocular blister. Plague bacilli which showed numerous forms of degeneration were

found in the juice of tissue taken from the hard, infiltrated base of the carbuncle. Cultures as well as inoculations were positive.

The patients were taken to the plague hospital of Rio de Janeiro, where both recovered.

I am convinced that the peculiarly mild course which the disease took in the last two cases, notwithstanding the fact that cases are more fatal in which the buboes are located in the axilla near the center of circulation, must be ascribed to the use of the preventive serum.

There can be no doubt that the plague virus was carried to our steamer in Alexandria, although no direct communication with the land took place. The entrance of an infected harbor rat into the steamer, thereby transporting the virus to the numerous ship rats, I consider very improbable. I believe the provisions hauled to the ship in dirty sacks and baskets were the sole cause of the outbreak.

In case of plague the rats on board ship are a menace not only to the ship, but also to the ports at which it touches, because the pest-infected rodents soil the whole ship and the merchandise with their excretions, and in this way they are likely to transmit the bacilli to the rats of the harbor, for the harbor rats sniff at and gnaw the goods, especially eatable ones, and may eat the dead, plague-infected rats of the steamer.

HISTORICAL REVIEW.

That epidemics of pest are very often preceded by an enormous death rate among rats and mice laymen seem to have known for ages.

In Hindustan and Uganda and in other endemic plague foci, when rats come out of their hiding places and die in large numbers, a panic is created and the people leave their homes forthwith.

Rats may often have been the cause of single cases as well as of epidemics of plague, the origin of which could be explained in no other way. This applies particularly to cases occurring in harbors and especially in docks where the propagation by means of men or their baggage was excluded, but where navigation in some way played an important part in transmitting the disease. This method of transmission of plague may have been operative in many cases of outbreak of the plague on vessels long after leaving an infected port. Owing to the small power of resistance of the plague bacillus to dryness and heat, the direct importation of the pest through primarily infected merchandise is at present considered improbable, especially after a long voyage in tropical and subtropical latitudes. In such cases, therefore, the transportation of the bacilli must be assigned to an agent which can increase and preserve the virulence of the virus.

Pest affecting a limited number of rats having free communication among themselves would destroy them all in a short time on account of the great susceptibility of these animals to plague infection. On board ship, however, where the animals can not come in contact with each other so easily, especially when they are partitioned off in different separated parts of the hold, an epizootic may progress more slowly and last for weeks, finally transmitting the disease even after a long interval from one remote port to another. Since the discovery of the plague bacillus real proof of this fact has been established. For instance, the German government sent a commission to investigate the epidemic of plague which seized about 90 persons in Oporto in 1899. It was found that an epidemic of pest had killed many rats in the docks and their surroundings before the outbreak among the population occurred. The rats were either directly infected from the rats of a steamer or through merchandise which had become soiled with the excrement of plague-infected ship rats. A similar experience was reported by Kitasato in Kobe, Japan, in 1899, another in Sydney in 1900. Under favorable conditions the disease may remain confined to the rats. A number of dead rats, for instance, were found when the steamer *Rembrandt* returning from Smyrna in January, 1901, discharged its cargo in Bristol. The cadavers contained virulent plague bacilli; yet the disease was not communicated to men.

The steamer *Pergamon* returned to Hamburg January, 1901, from a cruise in the Mediterranean, and dead rats in groups of five or six were found between bales of merchandise. The number of rat corpses aroused suspicion. The bacteriologic examination which was ordered by the board of health showed that the rats died from bubonic plague. The merchandise was partly burned, the rest carefully disinfected, as was also the entire steamer; the rats were all exterminated, and in this way an infection of the rats in the dockyards and harbor and possibly among the inhabitants was prevented. No case of plague among the crew had occurred.

From such experiences it is evident that for international trade international quarantine rules ought to be made, demanding as one of their principal points systematic extermination of the rats on board with sulphur dioxid, carbon dioxid, carbon monoxid, traps, poison or a sufficiently virulent culture of Danysz's bacillus, while the ship lies empty at its terminus. The same should also be attempted with dock and harbor rats.

The Australian and Turkish governments have already included similar requirements in their quarantine regulations. Infected merchandise must be burned or very carefully disinfected; valuable goods which will not stand disinfection must be kept in an isolated place inaccessible to rats until the virus has entirely lost its activity.

1201 Irving Park Boulevard.

THE TREATMENT OF ARTHRITIS DEFORMANS WITH THE ROENTGEN RAYS.

A PRELIMINARY REPORT.*

J. M. ANDERS, M.D., JUDSON DALAND, M.D.
AND G. F. PFAHLER, M.D.
PHILADELPHIA.

We submit this preliminary report on the treatment of arthritis deformans with the Roentgen rays, and hope at a later date to make a more complete report on these and similar cases and then to be able to draw more definite conclusions.

CASE 1.—Mr. T. J., aged 47, a miner, was admitted to the wards of the Medico-Chirurgical Hospital under the care of Dr. Anders Oct. 26, 1905. The man's father died of miner's asthma, otherwise the family history is negative. His previous medical and social history have no bearing on the disease.

Present Illness.—This dates from July, 1902, when his feet, especially the joints of the toes, became swollen, tender and painful. This kept him from work one year; he then improved and was able to work four months. Since that time, which was fifteen months before admission to the hospital, he has

* Read before the Philadelphia County Medical Society, March 14, 1906.

not worked on account of the stiffness, swelling, tenderness and pain in his joints. Four months before admission his left wrist became swollen, tender and painful. Soon after this the left elbow and shoulder became similarly affected, and the joint movements became more and more restricted with the advancement of the disease. At the time of admission he could not, by his own power, raise his left arm from the side. It could, however, by passive motion, be raised half way to the level of the shoulder.

Physical Examination.—This showed the left shoulder to be larger than the right, and tender and painful when passive motion was attempted. The pain seemed to be confined to the joint. No crepitation could be elicited. The left elbow was tender, and somewhat stiff or partially ankylosed, but not swollen. The left wrist joint was tender, stiff, painful and swollen, and the periarticular tissues were infiltrated. The fingers of the left hand showed a tendency to bend backward and outward. The joints of the right upper extremity were normal. The feet were deformed, the toes were bent strongly outward, and the ankles were swollen and tender. The phalangeal and metatarso-phalangeal joints showed great restriction of movements. The knees showed a little joint rigidity, otherwise nothing abnormal.

The general examination showed some emaciation, an emphysematous chest, and more or less general atheroma of the arteries, otherwise there was nothing abnormal.

Radiographic Examination.—This was made Oct. 31, 1905. It showed particularly decalcification of the bones of the wrist joint, with erosion of some of the joint surfaces, and an exudate into the joint spaces. The elbow showed a similar decalcification, with some exudate into the joint space, and a roughening of the tip of the olecranon. The shoulder showed a similar condition.

Treatment.—In order to rule out any constitutional effect only the joints of the wrist, elbow and shoulder of the left side were selected for treatment. The arm was bent in such a way that all of these joints were brought into the field of exposure at one time. The man was treated three times a week, with a medium tube, at a distance of fifteen inches, with about one milliampere of current going through the tube. Each treatment lasted about fifteen minutes. Treatment was begun Nov. 14, 1905. After the first treatment he had less pain. After the third treatment there was distinctly less stiffness. The diminution in pain and stiffness continued progressively until at the end of about one month, and after sixteen treatments, the joints of the left upper extremity were practically well. While at first the patient could not raise his arm from his side he then could touch the ear on the opposite side of the head. He could raise his left arm to within two inches as high as the right, and he could reach around his back nearly as far with his left hand as with his right. The wrist improvements were normal.

Second Radiographic Examination.—This was made Dec. 11, 1905, less than one month after beginning *x*-ray treatment, and showed a decided approach to the normal.

Third Radiographic Examination.—This was made Feb. 27, 1906, nine weeks after discontinuing the treatment and showed only very slight difference in the joints of the two sides.

Internal Medication.—With the *x*-ray treatment sodium iodid was given internally, and massage and passive motion were given locally. While at the end of about a month the joints of the upper extremity had practically recovered, the joints of the lower extremities, which had not been treated with the *x*-ray, showed no change, which seems to indicate that it was neither the constitutional treatment nor the massage and passive motions in themselves that produced the results.

Treatment of Lower Extremities.—Since December 19 the joints of the lower extremities have been treated. There has been the same diminution in the amount of pain and stiffness, but the improvement has not been so well demonstrated as in the upper extremity, probably because of the marked deformity of the feet. At the end of a month, however, the man was able to sew up the cuts he had made in his shoes to make room for his feet nearly a year previously.

CASE 2.—Mr. O. G., aged 53, was admitted to the wards of the Medico-Chirurgical Hospital under the care of Dr. Daland. The family history is of no importance. Since 1890 he has had painful joint affections, short in duration, and with only one joint affected at a time, several months elapsing between attacks.

Present Illness.—This began in August, 1903, with pain, swelling and stiffness in the left ankle and instep. After four months the pain and swelling began to subside, but the soreness and stiffness remained. In June, the right knee, and in September, 1904, the left knee became similarly affected. The left knee continued to grow larger and more painful until admission to the hospital.

Physical Examination (Notes by Dr. Robertson).—This showed briefly a man older in appearance than his years; tendency to sweating; the right pupil a little larger than the left; the gums and teeth in bad condition; some wasting of the shoulder girdle and upper arm muscles. Both wrists, ankles and both knees more or less swollen and ankylosed. There was considerable synovitis of the left knee joint. The chest and lungs were emphysematous, and the heart showed a weak myocardium.

Radiographic Examination.—This was made Jan. 2, 1906, of both wrists, both knees, both ankles and showed in general the changes more or less characteristic of arthritis deformans, viz.: decalcification of the extremities of the bones, an exudate into the joint, erosions, or bony outgrowths of the bones, and actual deformities. In addition, this case showed marked atheroma of the arteries about the ankles.

The left knee, which gave the patient most concern, and which alone was treated, showed in particular distinct enlargement, an exudate into the periarticular tissues, an elevation of the patella by the fluid which was seen to fill the entire synovial sac. The patella showed a distinct exudate, which appeared to be beneath the periosteum on its anterior surface, and a more or less irregular exudate on its upper and posterior surface. The joint surfaces of both the femur and the tibia were eroded.

Treatment and Result.—The left joint alone was chosen for treatment because this was the one that most annoyed the patient. At the time of beginning treatment the knee was in a semiflexed position and could neither be extended nor flexed, and was very tender and painful.

The technic of the treatment was similar to that described in connection with the first case. After ten days and four treatments the pain had nearly subsided and the man could move the joint much more freely. After five weeks and fifteen treatments he was able to walk out of the hospital (at first he was bedfast). He has been able to go back and forth for treatment. There was an interval of three weeks in the treatment on account of a misunderstanding. During this time his pains slightly increased. In this case, as in the first one, massage and passive motion were given in conjunction with the *x*-ray treatment. A radiographic examination at this time showed a diminution in the periarticular exudate, and only about one-third of the exudate in the synovial sac.

We were led to investigate this treatment by the very excellent report made by Moser[1] on the treatment of gout and rheumatism with the Roentgen rays. His first case was reported in 1904.[2] This case began as an acute attack of gout, affecting the great toe. At the time of beginning treatment, however, seven years later, the patient presented the characteristics of general arthritis deformans. The disease had for a long time been at a standstill. A radiographic examination of one of the knees seemed to excite an acute attack, which subsided very promptly. This led Moser to repeat the exposures. At first each exposure was followed by acute pains; later the pains subsided; and then the joints became more mobile.

Moser's last report is based on the treatment of six cases of gout and six cases of rheumatism. In all good

1. Forts. auf dem Geb. der Röntgenstrahlen, vol. ix, No. 1, Aug 29, 1905.
2. Centbl. f. Chir., 1904, No. 23, p. 712.

results were obtained. Some of the cases of gout were treated during an acute attack with most prompt relief. In the cases of chronic rheumatism the pain, tenderness, swelling and stiffness either disappeared or were much diminished. As early as 1897 Sokolow[3] treated acute and chronic rheumatism in children's joints with the rays with marked improvement.

In 1900 Albers-Schonberg[4] observed marked improvement in cases of gout that had been exposed to the rays.

We believe that this method of treatment is a valuable adjunct in the treatment of these chronic joint affections, but that it is advisable to use massage and passive motion in conjunction with the Roentgen rays. We believe that the rays stimulate and increase the metabolism within the joint, and that this should be taken advantage of, and the massage and passive motion added to assist in the removal of the exudate.

THE COUNTRY DOCTOR.

JOHN G. WILSON, M.D.
MONTROSE, PA.

A country doctor ought to know what any trained physician ought to know. In order to make a success of his profession he must have a most thorough preliminary education, must avail himself of the advantages of his medical course to the utmost and be determined to improve himself at every opportunity.

His training when he enters on his life's work has simply laid open to his vision a glimpse of its possibilities. His future depends largely on his capacity for work. His savings for years must be reinvested in office equipment. He must embrace the opportunities freely given by the masters of the profession at their clinics to see their work and to learn to a certainty that their success has been by intense application for years along definite lines. Specialism is only a division of labor as practiced by all people as they have advanced through the various stages of development.

The discovery of ether by Morton in 1846 and the theory taught by Pasteur that micro-organisms caused fermentation, amplified by Lister in the treatment of wounds, greatly broadened the practice of medicine, and especially advanced and separated to some extent the practice of surgery from that of medicine.

The acceptance and perfection of antisepsis was of slow growth and gained almost no foothold in this country until Lister's visit to Philadelphia in 1876. Strange as it seems to us who never practiced any other method, the older members of the profession were loath to accept its truths and surgery was taken up by a few men and practiced as a specialty.

About this time Norris and Strawbridge returned from Germany, bringing with them the advances made in the treatment of diseases of the eye, and especially they had gained an inkling of the methods of refraction which were developed, and the oculist soon appeared. It is a fact that nearly all of the headaches just above and back of the eyes are caused by defective vision, and that large numbers of school children go to their physicians and are given headache remedies without end. This is to no purpose, and they finally have to give up school on account of becoming nervous wrecks, unless by chance they happen into some jewelry store and are given some kind of lenses to wear which may relieve the trouble to some extent.

The country physician, therefore, should take up refraction work. The great mass of working people simply can not pay the fee demanded by the oculists and are forced to put up with the indifferent work of the so-called opticians. Two or three hundred dollars will buy the necessary equipment and a month's work in some eye infirmary will give one a start, and one can do as well at once as any optician will ever be able to do.

A general knowledge of the diseases of the eye will be a help to one in many instances. After four or five years study and practice one will become very proficient and will be enabled to make many people more useful and add greatly to their happiness. Physicians as a class must give more attention to diseases of the eye, as a physician loses standing in a community if he fails to distinguish between a case of iritis and toothache, and a patient is apt to tell his neighbors if some country doctor treats a swollen and inflamed eye for weeks and then calls in a specialist who discovers a wheat-beard imbedded in the cornea.

Before the days of antiseptics, McDowell and The Atlees had boldly invaded the abdominal cavity and Marion Sims had given to the world the speculum. Soon after the advent of antisepsis the surgeon found that women could be mutilated almost with impunity and the era of the gynecologist began, but fortunately for suffering womankind it has passed away.

The great work of Howard Kelly in making plain to the profession at large the technic of plastic work, the advances made by McBurney in the operative treatment of appendicitis, the pathway blazed by the Mayo brothers in surgery of the gall bladder, have made it possible for any intelligent man to do good work and save his patients unnecessary suffering and, frequently, an untimely death.

The well-trained physician needs to recognize that the great question before the people now is this: Can my physician take care of me if I am sick and can he tell me how to keep well, or at least guard me from unnecessary sickness?

A physician that can make a diagnosis of appendicitis with certainty ought to be capable of operating and will give his patient a better chance of recovering than he would have if he waits a few hours longer to be sure of his diagnosis before putting the family to a useless expense of sending to the city for a great man and then waiting twenty-four hours more until he arrives, and perhaps by that time he finds the patient suffering with a general peritonitis.

At any rate a man that can not operate is not a safe person to leave a patient with after he has been operated on. If the case does not do well the great surgeon is far away and can not be had when again needed. If the patient wakes up in the night with every symptom of obstruction of the bowel something must be done and done at once, and it now requires more skill to give the patient the best chance than it did to do the primary operation, and if the country physician lacks experience or is deficient in equipment and does not dare to make the attempt to remove the obstruction, the patient will die.

The public at large would laugh at the physician that sent for the city man to reduce every dislocation or treat every case of fracture that came to him. Think of the worry, the anxiety that a bad fracture of the wrist or of the elbow entails.

Since few cases of fracture should be treated without careful *x*-ray examination, and in most instances must be reduced under an anesthetic, and not

3. Vratsch., 1897, No. 46
4. Munch. med. Wochft., 1900, No. 9, p. 284.

infrequently cut down on and wired, doing an ordinary abdominal section is child's play in comparison, and why should the country doctor be expected to do the one and not the other? If he without question accepts the case of the fracture, which entails, if done in the best manner possible, an expensive outfit, which every surgeon of wide experience dreads, which brings but little credit and almost no pecuniary reward, why not spend the time and learn to do the easy things that need to be done and at the same time bring their rewards with them?

A general practitioner, if he is as capable as he should be, can do almost the same work that any surgeon dare attempt, and his success will be as great and in most instances should be better, for he can give his personal attention to the case.

In too many instances the surgeon must give the after care of the patient almost wholly to some nurse or interne who has had but little opportunity and training. I do not believe, however, that the great operations should be attempted except in an emergency by any but men of the widest experience, as they will be able to do the work in a few minutes less time and by so doing save life. The exercise of their riper judgment would, in not a few instances, save organs that would be sacrificed by the less experienced.

The ordinary practitioner must become more competent or cease to exist. It is proper to be conservative, but that should not serve as a cloak to ignorance. We must be able to do the business that comes to our door, or in many instances it will not be done and the patients will suffer in consequence.

The "patent medicine" evil is no greater humbug than the fake attempted by many so-called specialists who write long articles in the journals on their special subjects, telling how very difficult it is to do their little special line of work—that it requires great skill to make a diagnosis—that a faulty diagnosis leads to faulty treatment and leaves you more in the dark than ever how to proceed; but somehow the impression is left in your mind that you had better send the patient to them, they alone know how to make a chemical analysis of the gastric contents. Don't do it. Just send for the carpenter who owes you for treating his daughter through a long sickness with typhoid and have him throw out a bay window on the side of the office. Equip a laboratory, buy some books and stop loafing. The $300 with which you thought of buying worthless mining stock will equip it nicely, and you will have the means at hand to tell whether your next patient has pernicious anemia or chlorosis, typhoid or malaria, and without these means you can not be absolutely certain. More is now required of the general practitioner than ever before and more is given. Each year people demand more accurate diagnosis and better treatment, and the question is, and it is a live one, where and how are they going to get it? Is the general practitioner going to become equal to the demand, or is the practice to be parceled out to a hundred specialists?

No one physician can do the best possible work in all lines of modern medical practice, but he may do better work in every field and the best work in almost every instance. Constant work in any specialty gives greater expertness along certain lines, and better results ought to be achieved by specialists in some cases.

As we find things to-day the great mass of work done by the specialists is work that should be done at home by the family physician and at far less expense and inconvenience to the patient. We need fewer so-called specialists but more thoroughly trained physicians. They must spend more money for equipment, be capable of making the most thorough examinations, and be prepared to carry out the various methods of treatment necessary to effect a cure.

All honor to the specialist, but hail to that type of practitioner that Carleton had in mind when he wrote these lines:

In the night-time or the day-time he would rally brave and well,
Though the summer lark was fifing or the frozen lances fell;
Knowing if he won the battle they would praise their Maker's name,
Knowing if he lost the battle, then the doctor was to blame.
'Twas the brave old virtuous doctor,
'Twas the good old faulty doctor,
'Twas the faithful country doctor—
Fighting stoutly all the same.

THE NASAL ACCESSORY SINUSES.*

EMIL MAYER, M.D.

Adjunct Attending Laryngologist to Mount Sinai Hospital; Chief of Clinic, Ear and Throat Department of the Mt. Sinai Hospital Dispensary.

NEW YORK.

While affections of the pneumatic sinuses of the skull have been recognized many years, it is only within the last 15 or 20 years that a fuller knowledge of their occurrence and their attendant treatment has become generally known, so that in mentioning the most important recent advances in rhinology the general consensus of opinion will be that diseases of the accessory sinuses, their diagnosis and treatment are the ones to be so considered.

Since those interested in special fields of rhinology have studied the question from every viewpoint, and voluminous essays have been presented which the general practician hardly finds time to read, a brief résumé of the advances made in this line may not be amiss.

The accessory sinuses of the nose, four in number, are the frontal, ethmoidal, sphenoidal and maxillary. These vary in size in different individuals, and anomalous conditions arise where there may be but a rudimentary sinus or even complete absence thereof. Some of these cavities are large single spaces, some have bony septa dividing them, while the ethmoidal sinus is always divided by partitions. All are lined with folds of mucous membrane which are so thin and so closely adherent to the periosteum that the bone is seen shining through. The mucous surface is coated with ciliated epithelium, the membrane is much thinner than that of the nose and there are few mucous glands. The functions of these cavities may be said to be those of resonating chambers for the voice.

The cavities all have natural openings into the nose, and, while these are so situated in some instances as to drain the cavity effectively into the nose, which is notably the case in the sphenoid and frontal sinuses and partially so in the ethmoid, the opening for the maxillary sinus is almost at its very top and hence drainage here can not be accomplished in the natural manner of a drain; that is, from its most dependent point. Some years ago when the treatment of chronic conditions of the maxillary sinuses was under discussion and it was claimed that washing out this cavity was all sufficient for its cure, I protested as to the possibility of an effective drain of a cavity whose opening was in the top. My views were stoutly contested, but since then those who objected make free openings in the dependent part to

* Read before the Metropolitan Medical Society, New York City, March 27, 1906.

cure their patients, and to-day we hear no more of those objections. The openings will be demonstrated in the description of the various sinuses.

ANATOMIC STRUCTURE OF THE SINUSES.

Taking the largest of the sinuses first, the maxillary, we find it somewhat pyramidal in shape, with its base formed by the floor of the orbit and apex over the roots of the molars. Its lateral wall is at the nasal chamber; its posterior wall is formed by the body of the superior maxilla. The anterior wall, over the canine fossa, is thinnest. The natural opening is near the roof of the cavity and opens into the middle meatus of the nose by the ostium maxillare at the posterior extremity of the hiatus semilunaris. Occasionally accessory openings are found also in the middle meatus. The maxillary sinus exists at birth and forms at about the seventh fetal month. It is well to have this in mind, as we shall revert to this later.

The frontal sinus lies between the two lamellæ into which the frontal bone separates in the region of the superciliary ridge. Its anterior wall is thickest and it is separated from the sinus on the opposite side by a bony septum which may be in the median line, but this is unusual. We frequently find the sinuses of one side encroaching far over on the opposite side, so that one sinus is much larger than the other. The cavity extends upward in the forehead often to a considerable distance, sometimes 1½ inches. Passing downward between the ethmoidal cells the sinus becomes narrow and at its most dependent part, in the middle meatus of the nose, opens into the hiatus semilunaris. The frontal sinus is seldom found before the seventh or eighth year of life.

The ethmoidal cells are in two groups, anterior and posterior, the former opening into the middle meatus, the latter into the superior meatus. They begin to develop about the fourth year of life.

The sphenoidal sinus lies in the body of the sphenoid bone, its anterior wall in part being the ethmoid bone. The orifice of the cavity is in the anterior wall and communicates with the superior meatus of the nose. The two sinuses are separated usually by a septum, but they have been known to communicate. The sphenoidal sinus appears about the seventh year of life.

ETIOLOGY OF SINUS AFFECTIONS.

The most frequent affections of these cavities are either acute or chronic inflammation. While frequently secondary to some nasal affection, they do occur primarily.

Among etiologic factors may be mentioned: Influenza, diphtheria, scarlatina, smallpox, measles, erysipelas and occasionally glanders and gonorrhea. Much has been written as to the etiologic relationship of ozena to accessory sinus disease, and the weight of opinion is that there is such relationship. Among the direct causes of purulent infection in the accessory sinuses may be mentioned galvano-cautery applications, probes and canulas and the misuse of the nasal douche. The practice of dentists of covering teeth with crowns of metal is one of the most frequent causes of sinus affection.

Most of the attacks of chronic suppuration occur as a result of an acute attack. The bacteria found are those that occur in inflammatory products and the pyogenic staphylococci and streptococci, the bacilli of Friedlander and of diphtheria.

The morbid anatomy of these affections is that of a chronic inflammation. There is a round-celled and serous infiltration, polypoid and cystic degeneration, periostitis, rarifying osteitis and caries. Caries may occur in the maxillary antrum. In the ethmoid it occurs frequently, as do also polypus formation and granulating osteitis. The secondary changes occur on the posterior wall in the frontal sinus. While polypi rarely occur in the sphenoid, erosions and necrosis of the anterior wall may occur.

Acute inflammation of these cavities is associated with inflammation of the nasal mucosa, and there may be an acute exacerbation associated with a chronic affection. Together with the symptoms referable to the acute rhinitis, there may be excessive temperature, but the chief complaint is that of pain. This is apt to be of a very severe character, in the brow if the frontal, about the eyes if ethmoidal, in the face if maxillary and in the back of the head if sphenoidal.

The mucous membrane is intensely congested, the middle turbinate swollen and pressing on the septum or there may be a single drop of pus at the site of the natural opening if the affection is anterior. If posterior, there is a congestion of the fornix and anterior sphenoidal wall and mucopus will be observed. Transillumination is so illusory that, while it establishes the presence of pus when a distinct dark spot is found, a negative find is by no means proof positive of its absence. The treatment is rest in bed, moist heat over the seat of pain, passing steam into the nose, washing out the accessory sinus where practicable with a warm antiseptic saline solution, after instilling a 1:5000 solution of adrenalin to which a small amount of salt has been added. It may become necessary to operate for this condition. This will be mentioned later.

Chronic suppuration of the accessory sinuses has perhaps, after all, the most interest to us, for the reason of its greater frequency, the difficulties in the matter of diagnosis, prognosis and the decision for operation and the skill and study required for its cure. The latent form of purulent condition has been fully studied but twenty years, though in 1875 Spencer Watson described it. Many of the members of the American Laryngological Association will recall the early papers by Bryan of Washington on chronic sinus affection and the silence that betokened an unfamiliarity with the subject that followed the reading thereof. To indicate how recent our knowledge is, I believe I was the first to operate on the frontal sinus at the New York Eye and Ear Infirmary, about 10 years ago. As to frequency, it may be said that the maxillary sinus is most frequently affected and the sphenoid least so.

DIAGNOSIS.

The one chief symptom is the presence of pus in one of the accessory sinuses, as indicated by its presence in the nose. More remote conditions exist that eventuate in the discovery of an empyema. Thus the pharynx, larynx, eyes and ears may be affected beside the nose. There may be pulmonary or gastric disturbance, or there may be the loss of general health, of weight and general malaise.

The symptoms most frequently elicited are pain, either a dull pain or severe lancinating one, nasal obstruction, one-sided usually, and a discharge of a purulent character on one side. Given a patient with these symptoms, locating the pain in the region of one or both of the sinuses and that pain constant in character, with the obstruction and discharge mentioned, the diagnosis of probable empyema of one or more sinuses may be readily made without rhinoscopic examination. If transillumination be practiced in a carefully darkened room and the dark spots be found in addition to the

linical evidence given, the diagnosis becomes still more ikely. If subsequent examination reveals pus or masses f polypi in the nose, the confirmation of the diagnosis s at hand.

In the more remote conditions associated with or aused by empyema, the diagnosis must often be made y exclusion, unless, indeed, we may be able to aid our iagnostic skill by examination of the blood. Sinus hrombosis has been so diagnosed, why not empyema ere? In children the diagnosis of empyema of the naxillary sinus, the only one actually present, is not ifficult in the pronounced cases. In severe forms of asal diphtheria the bacilli have been found post-ıortem. Pearce found them in 36 out of 39 cases. In ıost cases it clears up without any ill effects; in some a hronic empyema results. I have recorded my opinion n the question of empyema of the antrum of Highmore ı young infants and have taken the stand that it is not uberculosis nor caries, but as distinct an affection as it s later in life.

When chronic suppuration occurs the symptoms are he same in all recorded cases, of which there are about dozen, I having had one such. There is a fistula under he eye usually discharging pus, ectropion, one-sided urulent discharge from the nose with foul odor and roded bone.

The use of the *x*-ray is becoming more and more unerstood both for diagnostic purposes and also for the etermination of the exact size and position of the avities.

TREATMENT.

The diagnosis established, the important question of reatment arises, and here we may well pause, for, while hat is the natural sequence of all diagnoses, the many uestions that arise must be most seriously considered nd weighed. Is it a case for operation or local treatıent, and, if the former, how extensive shall it be?

A recent writer, lauding the galvano-cautery, considrs needle puncture to be all that may be required. He ays: "The needle puncture is not suggestive for clinial display, and hence, as the cosmetic condition is econdary, the external operation is quite naturally reorted to in the clinics and elsewhere as the quickest nd most spectacular means for immediate results." 'he same writer concludes that the negro must be of a ower race than the white man, for the reason that the ormer is said to have no accessory sinuses. Hence we ill not take him seriously.

In acute conditions of the maxillary antrum if the stium can be found, washing with tepid antiseptic olutions will be of much benefit and may effect a cure.)therwise a puncture with curved trocar beneath the nferior turbinate into the cavity, together with drainng and washing, may be required. In acute ethmoidal r sphenoidal disease the removal of the anterior end of he middle turbinate will permit free drainage. In cute frontal sinus affections it may become necessary o open the sinus from above, connecting with the nose hrough the infundibulum by a drainage tube.

In chronic maxillary antrum disease we may open he antrum through the canine fossa, then pack and inert a rubber tube which may be left as a constant drain. Ve may enter the antrum through a tooth cavity, or we ıay break down the nasal wall after opening the canine ossa. This is known as the Caldwell-Luc operation. 'he opening of the canine fossa must often be permaıent, and the annoyance of a constant taste of pus in he mouth and its commingling with the food is very great; but this may be obviated by making the nasal entrance into the antrum so large that the pus empties into the nose and has even better chance of complete cessation.

About one-half of the inferior turbinate is removed and then, by means of specially devised instruments, the antrum is broken into and the whole wall to the floor of the maxilla is removed. The canine fossa wound is curetted, the edges freshened and allowed to heal. In two severe cases in which I performed this operation the results were very satisfactory. The wound in the canine fossa closed permanently.

Ethmoidal disease is treated by the removal of the anterior half of the middle turbinate, the cells are curetted, and the septa broken down between them.

The sphenoid may be reached by the curette after the middle turbinate has been removed.

For the frontal sinus we have the Ogston-Luc method, which consists of opening the sinus from above and breaking through the infundibulum.

By the Kuhnt method the entire bony wall is cut away and the external parts therein are packed.

Killian's operation consists of making an incision below the eyebrow to the end of the nasal bone, separation of the periosteum, breaking down into the sinus from below and then from above, retaining a bridge of bone between for subsequent cosmetic effect. Entrance into the ethmoid cells through the wound becomes easy and also into the sphenoid.

Coakley operates from above downward and treats the wound by the open method, as in mastoid operations, with excellent results.

The radical operation as performed by Jansen does all this as to the frontal and ethmoidal. He next enters the maxillary antrum through the canine fossa, through the dependent and posterior ethmoids and into the sphenoid. Finally the nasal wall is broken into and the nasal mucosa used to line the cavity. This is sometimes done on both sides of the face. I have never attempted this radical procedure.

The prognosis as to complete recovery in all sinus cases must be very cautiously stated. We may succeed in eliminating the pain and even the discharge of pus, and in their place some new development arises, such as a neuritis over the incision resulting from injury to the exposed nerve at time of operation. At best it will take weeks and months before the last vestige of pus is seen.

Many of the maxillary antrum operations are done in physicians' offices and in public clinics, as are also the middle turbinate operations. As a matter of extra precaution, in a case of ethmoiditis and maxillary antrum disease and in which sphenoidal disease was suspected, I placed the patient in hospital. Under narcosis the antrum was opened after removal of one-half of the inferior turbinate and the middle turbinate was partially removed. The patient rallied well after the operation, but on the fourth day thereafter she developed coma and died, the cause of death being meningitis from a cavernous sinus thrombosis. This case illustrates the danger of considering such operations simple ones and the need of careful procedure, surrounding the patient with every precaution.

The method of removal of the middle turbinate in part, called uncapping, has for its object a free vent of the openings of the various sinuses which lie here.

Much is said of probing the sinuses through the nose. It is frequently impossible. For a successful performance it requires a non-resisting patient, thorough local anesthesia and a large roomy organ.

Some of the operations are followed by disagreeable cosmetic effects, and these are to be avoided if at all possible.

While the chronic cases take much time for their eventual recovery, requiring an infinity of patience on the part of both the physician and the sufferer, the ultimate end is often gained, a complete restoration to health.

OTHER AFFECTIONS OF THE ACCESSORY SINUSES.

While the acute and chronic affections of the accessory sinuses are by far the most frequent conditions here met with, we may have morbid growths, benign or malignant, foreign bodies, mucocele, caries of the bone, injuries, etc.

The morbid growths remain quiescent until forced into the nose, when either by hemorrhage or obstruction our attention is called to them. Malignant growths hereabouts form a chapter of fatalities sad to contemplate. Radical removal is rarely possible, and the recurrence which inevitably happens means most distressing fatality. Operation does give relief for the time and hence is not to be discouraged. The foreign bodies are mainly unerupted or ingrowing teeth.

Mucocele may exist, especially in the maxillary antrum. This may produce a rarefaction of bone so that the nasal wall, the facial wall and the floor over the superior maxilla may disappear, and only the mucous membrane may cover it. I have recently had such a case.

In the ordinary nasal polypi, pressure may interfere with the ethmoid cells and they may become absorbed into one large cavity. The bone-destroying power of this condition is remarkable. In a case recorded by me the vomer and superior maxilla were entirely absorbed from pressure of these mucous polypi.

Caries of the bone, especially of the facial surface of the superior maxilla, may occur usually from violence, and may simulate antral disease.

As illustrating the difficulties in the way of differentiating sinus disease from neuralgia, hysteria and the like, I relate the following:

In consultation with a prominent neurologist, I saw a young married woman from one of our southwestern states who gave the following history:

About two years previous to my seeing her she had pains in her face over the left antrum. These pains were very severe and practically constant. At night they were not severe enough to cause sleeplessness, but in the day they were always present, of a gnawing character, severe during mastication, and preventing her from attending any social duties by reason of their severity. Neuralgia was diagnosed and appropriate remedies were administered with no effect. A visit to a western city for the purpose of consulting a specialist resulted in the expression of an opinion that she had nothing the matter with her, that she should go home and behave herself. Her physical condition became so bad that she prevailed on her relatives to send her to New York to consult a neurologist, who, before expressing an opinion, asked me to see the patient.

She came to my office and required support while walking to the examining room. There was exquisite sensitiveness on the left side, dark spot on transillumination, without a sign of pus. I diagnosed some affection of the bone covering the antrum and advised operation. This was granted and after an incision from the center of the upper jaw to the maxillary ridge and removal of the periosteum, caries of the external portion of the maxillary antrum was found and the whole of this portion was then removed and the wound packed.

She was placed in a sanitarium on the fifth day, made an uninterrupted recovery after a rest cure of five weeks, and gained much in weight. She returned to her home in good spirits. Two years subsequently she remained well.

I feel confident that an early diagnosis and prompt operation would have saved the patient much suffering, to say nothing of the strained relations existing among the members of her family, who at one time believed her to be a malingerer and treated her accordingly.

25 East Seventy-seventh Street.

TROPICAL NEURASTHENIA.*

W. W. KING, M.D.

Passed Assistant Surgeon, Public Health and Marine Hospital Service.

WASHINGTON, D. C.

Tropical is used here in the sense of locality more than to characterize any special type of neurasthenia. My object primarily is to call attention to its frequency in warm countries, at the same time touching somewhat on the disease as I have observed it.

Writers on tropical diseases make little or no mention of it. Dana, in his work on "Nervous Diseases," states that it is not infrequent in tropical regions and that it is found in the West Indies. My experience extends over six years' residence in Porto Rico, but information derived from various sources has caused me to regard this condition as one quite general to the tropics, differing in degree through peculiar local influences. From what I have been told by medical men who have resided in the Philippine Islands I judge that it is even more prevalent and more severe there than in the West Indies.

The native of the tropics is not exempt, and in Porto Rico, where the percentage of neuroties is high and functional nervous disorders very common, it is not infrequently encountered associated with hysteria—hystero-neurasthenia. It is far more common, however, to find neurasthenics in the tropics among those who go there from colder countries, hence it becomes a very interesting question to American physicians, in view of the close relations recently established between the United States and Porto Rico, Cuba, the Philippines, etc. My remarks refer particularly to Americans living in the tropics, but the same considerations will undoubtedly be found true of other nationalities under like circumstances.

Comparatively few individuals entirely escape if they live in the tropics for any length of time. In many persons the manifestations are slight and are taken as a matter of course, due to climate. They do not consider themselves really ill, but commonly explain: "The climate is getting onto my nerves." Acute cases are not unusual. Grave ones are more rare, but do occur, and insanity has been known to follow. Some time ago considerable comment was made in both professional and lay press about the unusual number of American soldiers who became insane while serving in the Philippines. Making due allowance for malingerers who wished to be invalided home, it seems safe to assume that many of these men were victims of grave neurasthenia.

In proportion to the number of American women to men in Porto Rico, I have observed a relative greater frequency among the former. Several explanations may be offered. American women almost invariably menstruate more abundantly than in the States. The flow is prolonged and often so excessive as to require urgent treatment. The interval between periods is usually shortened during the first year or so of residence there. We can readily understand that to women accustomed

* Read by title at the annual meeting of the American Society of Tropical Medicine, Philadelphia, March 24, 1906.

) a regular monthly routine such conditions may be all ufficient to precipitate nervous exhaustion.

Housekeeping where customs and language are trange and where servants are inefficient and uncleanly as its thousand and one little difficulties and worries hat need to be seen to be appreciated, but which in the ggregate are often sufficient to cause housekeeping to e abandoned, the housewife sent to the States to re-uperate, and on return to live at a hotel or boarding ouse.

Another thing: life in most tropical countries is adically different from that in temperate climes. The ack of accustomed society, pleasures and diversions is nore keenly felt by women than men, who have more pportunity to make up the deficiency.

Without excluding the usual causes of neurasthenia, here are some which, in my opinion, deserve special ention when considering this as a tropical disease.

Climate is the favorite scapegoat and receives the ajor portion of the blame. I believe that its influence overestimated, though it undoubtedly causes a gen-ral atony of all the tissues of the body. Functional ctivity is decidedly lessened. The energetic American oes the pace according to his previous habit, and while is physical and mental capacities may be able to stand in the States, it is entirely too strenuous for his new nvironments. He either drops more or less into the ace of the country or breaks down. What may be nor-al work in one place is overwork in another. Add to is the mental exasperation and irritation which he eels at the slow, easy-going methods of those with whom e comes in contact.

The officials charged with the construction of the anama Canal have been suddenly confronted with the roblem of providing amusement for their employés. hey have come to realize that the need is imperative nd vital, and are now spending thousands of dollars to eet it. "All work and no play makes Jack a dull boy."

To our notion, the amusements of tropical peoples re limited and often of a character which does not ap-eal to us. Customs which are not understood and the ability to speak the language make it very difficult to ke an active part in whatever opportunities there may e for diversion. Theaters are few and seldom first-ass, except in large cities, and here again we meet e impediment of unfamiliar speech. The benefits of ublic parks and outdoor sports are rarely attainable. equaintances are limited to a small circle, the members which only too often tire of each other's society. In arch of something to relieve the monotony of life un-er such conditions, there is great liability of drifting to alcoholic or sexual excesses, thus further assisting ervous exhaustion.

As to diet, people from the north fare rather badly. he same articles of food (except in a limited number private houses) appear from day to day with almost ockwork regularity, while the methods of preparation o not result in dishes which appeal to the American alate. The sameness of it all becomes unbearable at mes, and a change is sought again and again. The gestive functions, especially that of the liver, become mpaired.

Moderate exercise is essential to health in the tropics. t, unfortunately, one's inclination is decidely averse it. Almost unconsciously everything is done with a inimum of physical exertion. On the other hand, too uch or too violent exercise may be more harmful than one at all.

The degree of neurasthenia is slight or moderate, exceptionally, severe. The patient first notices that he is less energetic. He feels fresh in the morning, but soon tires and at night feels worn out, apparently without sufficient cause. He becomes ill-natured, peevish and irritable, taking offense at small things which under ordinary circumstances would not be noticed. Mole-hills become mountains; proper attention can not be given to business; urgent matters are put off from morning till afternoon and from afternoon till next day. It becomes almost impossible to concentrate the thoughts on details or to plan for the future. Memory and the ability to reason may be at fault.

There is a decided tendency toward hypochondriasis, morbid introspection which distorts unimportant pains and ill feelings into supposed initial symptoms of some dreaded disease. The fear of impending disaster or death may render the patient's life miserable, even when he knows that there is no reason for such fear.

The appetite may fail and digestive disorders may arise or grow worse if already present. Loss of weight may result. During a moderate attack I lost about fifty pounds in three months. Sleep is troubled and unrefreshing. Dull, annoying headache is of almost daily occurrence, and, as a rule, is occipital, sometimes frontal if there are visual defects.

True anemia is not a prominent feature, although there is a very deceptive anemic appearance encountered, especially among women who are neurasthenic. I have repeatedly been asked to examine the blood of pale subjects without ever finding any marked reduction of the hemoglobin, unless due to some cause more than the nervous affection. Vasomotor disturbances most probably give rise to this pseudo-anemia.

Neurasthenia in the tropics presents the same great variety of symptoms as elsewhere, and I have only mentioned those which have struck me as specially marked. In slight cases improvement occurs readily or the patient recovers completely when the cause can be removed or its influence counteracted by change of scene or occupation. Proper and regular exercise, particularly if amusement can be combined with it, proves very beneficial, but it is easily overdone.

The symptoms may disappear gradually and the patient recover spontaneously as he becomes more accustomed to his new life and environment; we may say acclimated. The time necessary for this depends on the adaptability of the individual. It may be months or years. Some persons could never do so.

I have had little success with medicinal treatment, unless combined with hygienic measures. Prominent symptoms may require special medication, but the specific medication by drugs designed to act directly on the nervous system will too often prove disappointing.

ETIOLOGY OF DEMENTIA PRÆCOX.

WILLIAM A. WHITE, M.D.
Superintendent Government Hospital for the Insane.
WASHINGTON, D. C.

A number of articles on this subject have appeared lately in the medical press, setting forth the general proposition that dementia præcox is a disease due to autointoxication. The arguments of the writers have been backed up by the results of chemical analyses, which, in many instances, have been gone into in great detail and very exhaustively.

It seems to me that the chemists have gone to great lengths to find a cause which is right at hand and, further, that they have been singularly short-sighted

in their reasoning. Their results have been obtained from the examination of cases acknowledged to be dementia præcox, and because they have found changes in the blood and secretions from which they can argue the development in the body of autotoxins they have presumed these autotoxins to be the cause of the disease. If these chemical changes had been found before the development of the clinical picture, then there might be some good reason for considering the changes found as causes, but, being only found after the disease is established, it is incumbent on those who claim these to be causes to show why they may not be effects.

We find dementia præcox developing typically at the period of puberty and adolescence in persons preferably of marked hereditary taint and under all conditions of environment. It always has been regarded, and I see no reason why we should change our minds now, as a psychosis of the developmental period dependent on defective cerebral and corresponding mental evolution. It is certainly on its face, and is generally acknowledged to be, a mental disease, and the burden of proof, it would seem, should be on those who claim it to be a disease of tissue metabolism.

Now it seems to me that just what would most naturally be expected is true; that is, that these changes which are found in the secretions are the results of disturbed tissue metabolism due to the disease and not indicative of the presence of toxins which are to be regarded as causative factors.

The failure to consider this very manifest explanation of the conditions found is due perhaps to the lack of a profound appreciation of the intimate relations between the nervous system and the other organs of the body and the very common occurrence of bodily disorders associated with the psychoses and, very probably, due to the same underlying conditions—disease or disorder of the nervous system.

This is a subject which has been much written about even from early times, but perhaps because the physical changes are not relatively gross as in pneumonia, nephritis, valvular heart disease, it never seems to have been taken seriously, but to have been considered by many as largely academical. It seems to have been hard to conceive of any necessary bond between the physical organization and the mind. Recently, however, this connection is being more emphasized and we find Mercier,[1] in his latest work, speaking of insanity as a disorder "not of this or that organ, or tissue, or part of the body, as are the diseases which come under the purview of the general physician or surgeon, but of the whole individual who is the subject of the disorder."

The body is made up of a great number of organs, each one of which has a definite function: The kidneys to secrete urine, the lungs to carry on respiration, the heart to force blood through the vessels, the stomach and intestines to digest and to absorb nutrient. Definite as is the function of each one of these organs, its action must be timed in response to certain conditions and in relation to the other organs of the body, or it does not serve its purpose in the individual economy. The stomach must secrete its juices when food is introduced, the bladder must contract when there is urine to be expelled, the active brain must be supplied with an increased amount of blood, the kidneys and the skin must act harmoniously together to excrete certain substances, the respirations must increase on physical exertion, and so on indefinitely. Now it is the duty of the nervous system to see that the functions of the several organs are rightly timed and properly adjusted in relation to one another. This is the function of the lower nerve centers.

The highest nerve centers of the cerebral cortex that constitute the physical substratum of mind have quite a different function. Their duty is to initiate, to regulate, and to control the separate actions of the individual so as best to serve his interests in his relations with his environment, in other words to bring about an adjustment of the individual to his environment.

Referring to these, we may say, contrasted functions of the nerve centers, Mercier[1] sums up by saying (p. 83): "From the foregoing general account it appears that what is primarily disordered in insanity is believed to be the working of the highest regions of the brain; that the primary function of these regions is to determine and to actuate conduct; that a subsidiary function is to harmonize and to govern in a general way the bodily function of nutrition, or repair and waste of the tissues; and that the operations of mind are associated with the working of these regiona in such a way that, when the mind is disordered, the bodily functions also are deranged."

Tomlinson[2] takes the same position in a recent paper, which he writes to defend the thesis that: "There can not be special change in an organ without general disease in the rest of the organism, and in the study and treatment of the special condition, the general involvement and its extent are most important."

This paper of Tomlinson's was based on 2,366 cases admitted to the St. Peter State Hospital in Minnesota from Jan. 1, 1894, to Jan. 1, 1904. An analysis of the cases shows "practically all these patients were suffering from some kind of physical disease, most commonly malnutrition, perversions in the digestive processes and interference with the process of elimination."

These physical disturbances were manifested by disturbances of reflexes, tremors, impaired nutrition, constipation, renal inadequacy, changes in the urinary secretion and in many other ways. In the main, these physical disorders that were found associated with the mental diseases would be described as minor departures from the normal and many of them would undoubtedly have escaped discovery but for the systematic application of laboratory methods of clinical examination.

Now while physical disease, an attack of one of the acute infectious fevers for example, may be the determining cause of a psychosis, the character of physical disorder here referred to is such, at least in degree, as every one suffers from many times in the course of a lifetime. It could hardly be supposed, therefore, that physical disorders of such magnitude would produce insanity in ordinarily stable persons, although it may perhaps be conceivable that in very unstable individuals, the strongly predisposed, they might. Even granting this, the real cause after all would lie in the nervous system that was so unstable as to be disordered by so slight a cause, and the burden of proof, it seems to me, rests with those who claim the contrary.

What then is the explanation of these physical disturbances? They are the manifestations in the realm of the physical of the same disease which in the realm of the psychical is manifested as insanity and this disease is a disease of the nervous system.

Referring to the functions of the nervous system be-

1 "Criminal Responsibility," p. 79.

2. "The General Conditions Associated with Insanity," The Journal A. M. A., March 17, 1906.

ore described, viz., the adjustment of the individual to is environment by the higher centers and the harmonzing of the functions of the several organs by the lower enters, it can be seen that any disease of the nervous ystem which produce insanity must be very apt to prouce physical disorder and the nature and extent of that hysical disorder will depend on the depth of the disease n the hierarchy of the nervous centers.

Do the facts of clinical psychiatry support this view? think they do. Take for instance the classical type of aranoia, a disease which manifests itself at the height f the individual's mental development, at the crest of ie wave of cerebral and psychic evolution. The symptms of this psychosis are symptoms of disorder of the ighest of the functions of mind, the latest to be acuired and are in the main confined to the intellectual rocesses. False beliefs and defects of judgment are rominently in evidence while psycho-sensory disorders iay be few or even absent altogether. As we might exect, the symptoms of physical disorders in the paranoic re practically nil. He does not at any time give the apearance of being a sick man, but, on the contrary, often anifests unusual energy and activity in exploiting his hemes or in protecting himself from his persecutors.

How different a picture do we see in dementia præcox. n this disease, there is a profound defect of nervous ornization, the development does not proceed beyond the eriod of puberty. At this early age the mental life of ie individual has come to an end. In a disease due to ich a far-reaching defect of nervous organization could e reasonably expect the functions which regulate the rmonious relations of the several organs to escape? As matter of fact, the physical disorders in this psychosis e marked and wide-spread. We find all sorts of motor iomalies-reflex, automatic, and voluntary—disorders of cretion and tissue metabolism and certain chemical anges indicating the formation of toxins and thus utointoxication.

And so it is with the other psychoses. Those in which e disease is deep-seated, dependent on destructive lesns of the nervous system, manifest the more marked idences of physical disorder. In paresis, the physical mptoms may be by far the most prominent of the early anifestations. In senile and arteriosclerotic demen a due to destructive cerebral lesions and occurring on e down-hill side of life the physical signs are well deloped. Even in manic-depressive insanity, which derves perhaps as much as any of the well-defined psyoses to be classed as functional, we find physical disrbances varying all the way from the most mild to the ost severe type, but keeping pace throughout in their gree of severity with the severity of the mental symptms. In the highest degree of manic excitement there developed a picture closely resembling that of a toxic lirium.

This seems to be the general conclusion at which Tomson has arrived from his studies. Commenting on e results, he says:[2] "In this connection it should also recognized that as it is the principal function of the neral nervous system to direct the activities of the rest the organism, a failure in dirigent function would, necessity, interfere with normal activity of the vegtive organs, thus reducing their capacity for work, vering the general vitality and further decreasing the pacity of the general organism for adaptation to exnal relations, by involving the retention, not only of e waste products of its activity, but also the generon of toxic substances from the food materials taken o the digestive tract."

Insanity is a disorder of the mind due to disease of the brain and it is this underlying disease of the brain that is the essential thing manifesting itself on the psychical side as insanity and on the physical side as physical disorder. The physical disorders then are but expressions of the same disease that psychically we know as insanity and therefore, can not in any sense be set down as causes for the mental disturbances but only as correlative phenomena. Insanity is but a group of symptoms, as are the various physical disturbances found in the insane.

The physical disturbances of dementia præcox have come into prominence because they are so numerous and so pronounced. They form such an important part of the clinical picture of this disease, however, because the nervous disease is so deep-seated and far-reaching in its effects. Because of their objective character, and, too, because of our limited knowledge of the psychical, they are often of great importance in estimating the gravity of the disease and its prognosis.

MERCURIAL NEPHRITIS WITH UREMIA.

REPORT OF A FATAL CASE.

ROBERT N. WILLSON, M.D.
PHILADELPHIA.

So many cases of mercurial nephritis have been recorded in medical literature that mercury should be recognized as an agent possessing a peculiarly irritative and destructive action on the renal tissues. Certain individuals appear to be far less sensitive to its influence than others, and a few tolerate enormous quantities without apparent harm. In other instances, and in children especially, the smallest fraction of a grain of any of the mecurial salts will act so maliciously and so rapidly as to astound the physician in charge, and even to carry off the patient before his eyes. Such an instance is reported by Buchner.[1] A teacher rubbed into each of the scalps of between 80 and 90 boys about a teaspoonful of mercurial ointment for pediculosis. All the boys showed symptoms of poisoning and one died. Sackner also reports[1] a case of an adult into whose hands five grams of mercurial ointment were rubbed at one treatment for rhagades. A severe dysentery followed and the case proved fatal.

As already stated, this is only one of a long series of similar cases. With their increase in frequency it has become customary to dwell on the prominent symptoms (subjective) and to overlook the more subtile, though even more dangerous, influence of mercury on the kidneys. For this reason alone, it would appear useful to cite a case which came to my attention in the wards of the Philadelphia Hospital. My belief that its report might prove salutary crystallized into determination that no time should be lost when I read in the therapeutic column of THE JOURNAL,[2] A. M. A., the following quotation from a communication published over the name of the author physician:

I am of the opinion that heretofore many if not all physicians have overlooked the all-important bearing of "portal circulation" in inflammation of the lungs. In active practice for the last forty years, the last ten of which I have been in the habit of using boldly, and most successfully, calomel in heroic doses, adult dose gr. x every four to six hours, day and night p. r. n. The microbic bed of morbidity and mortality is freed from its pulmonic environment, and as seven-tenths

1. Quoted by Sackner, Berlin. klin. Wochft., 1892, p. 619.
2. July 2, 1904

of the disease is eliminated in from twenty-four to forty-eight hours, the remaining three-tenths is treated better by careful nursing than by overzealous doctoring. I write, he concludes, from experience.

I believe that the term overzealous is very apt in such a connection. When applied to what seems to me an over free use of a dangerous drug, it might even be bettered by the term overcareless. I feel that not only is there in this method the likelihood that the microbic bed will be freed from its pulmonic environment, but that the sick bed, whether microbic or otherwise, will be freed by death from its occupant. The following case history will further illustrate my position:

Patient.—J. W., colored, a laborer, aged 25, was admitted to the Philadelphia Hospital Oct. 16, 1903.

Course of Disease.—He ran the course of a severe and extensive pericarditis, during the course of which the urine showed a trace of albumin, but at no time casts or other renal sediment.

On October 30 he was convalescent, in the absorptive stage of pericarditis.

On November 1 there was stomatitis, and two teeth were removed by the dentist. The following day the jaws were clenched, the patient could not enunciate, the breath was fetid. There was no stiffness of the cervical muscles, no fever, no suggestion of tetanus; pulse, 72; respirations, 26.

On November 4 the stomatitis was extreme, the jaws were fixed, the patient unconscious, the breath foul and characteristically fetid; there was slight opisthotonos, and contractures of the arms and forearms. The man could be roused, but at once relapsed into stupor. There was slight pretibial edema, and slight pitting on pressure over the chest wall. The second aortic cardiac sound was loud and metallic, and the patient was in collapse. The lungs appeared clear. Death occurred on this day from uremia.

Autopsy.—Nov. 7, 1903. The autopsy was interesting, especially in regard to the heart and kidneys. The heart was enormous, the left ventricular wall measuring one inch in its greatest diameter, the muscle appearing to be studded at all points with yellow fat. There were also fibrous scars in the external wall. The coronary arteries were not markedly sclerosed. The aortic, tricuspid and mitral valves were insufficient, the former two admitting easily four fingers and the latter three. No vegetations were present. The pericardial sac was attached anteriorly to the sternum by soft lymphoid adhesions, over an area of nearly a square inch, directly behind the midsternum. The sac contained not more than one ounce of pure serous fluid. There were fine adhesions between the layers of the pericardium.

The kidneys were small, almost infantile, and very pale and anemic; the left was smaller by one-third than the right. No urine was found in the bladder. The capsule was adherent in the case of both kidneys, and there was a decided diminution of the cortical substances. Everywhere there was noted a widespread yellow fatty degeneration and infiltration. The brain showed nothing to account for the nervous symptoms other than a slight thickening of the pia, and a small quantity of semiturbid fluid at its base.

Microscopic examination showed an extensive myocarditis, as well as a high grade of chronic diffuse nephritis, with a subacute (or fresh) condition superimposed in the form of a hemorrhagic inflammation.

Apart from an unexpected disaster in the convalescence of a simple, though severe, pericarditis, the case was interesting as a study in physical diagnosis. The enormous area of cardiac dullness, supposedly corresponding to the effusion, the unusual size of the heart as discovered at the autopsy, the widespread transmission of the pericardial friction sounds, and, finally, the perfect presentation of the three stages of inflammation, effusion, absorption and recovery, all rendered the case interesting from the clinical aspect.

Suddenly the convalescence was interrupted by a severe stomatitis, to relieve which the consulting dentist extracted the two supposedly offending teeth. This procedure was followed by further inflammatory swelling and by closure of the jaws. It was then learned for the first time that the patient had received 84 successive grains of calomel within fourteen days as the result of a misinterpretation of an order for a single dose.

Unfortunately, there had been no critical study either of the urine or of the blood, as judging from the routine urinalysis the kidneys had apparently been doing their full duty. The first examination had detected only a trace of albumin and no renal sediment. The autopsy findings, therefore, assume an additional importance.

Two important lessons were learned from this undoubtedly avoidable waste of life: First, that the routine administration of mercurial laxatives and purges prior to the receipt of a careful urinalysis may occasionally result in fatality, even though the mildest mercurial salt be employed. Second, that an existing nephritis should contraindicate any but the most careful use of the drug, not excepting those cases in which it is possible to trace the renal disability to a syphilitic infection. There are instances on record of individuals who have survived enormous, almost incredible doses of calomel. Usually the medicine has been administered in a single dose, though by no means always. Pereira[3] mentions a case under the care of Hellweg, in which "a few grains" proved fatal and another treated by Vagnitius in which 15 grains caused death.

The record of a boy aged 14 is reported in the *London Medical Gazette*,[4] in which death was brought about with six grains of calomel. There was severe ulceration of the mouth, enormous swelling of the face, fetor of the breath, and death; but no ptyalism. Sixty years later Halle[5] quotes a case reported by Riegel of the prolonged administration of calomel resulting in death; and another reported by Adam, in which severe hemorrhagic inflammation of the intestines with thrombosis of the vessels and edematous infiltration of the tissues followed the use of 15 grains of calomel during the course of three days. He also refers to a case of Pel in which the patient died soon after the use of calomel, and in which considerable quantities of mercury were recovered from the kidneys. Mitchell[6] quotes two cases from Hoffman occurring in boys of 12 and 15 years. One died on the sixth day, and the other a still shorter period. Mitchell refers to an old and very plausible theory, that calomel acts differently at different times, and as he puts it, "in different epidemics." Referring to its use in cholera, he says: "In 1818 from fifteen to twenty grains of calomel operated like a charm." He then cites his later case in which were given nine drams of calomel, with oil, salts, and jalap, "without either emetic, cathartic, or sialogogue effect."

The generous doses of calomel formerly used in our western states are classic the world over. They almost rival an instance, cited also by Mitchell, in which a man, known to him, had in his possession "the last of twelve powders ordered for a cholera patient in 1833, which (powder) contained one ounce of calomel. Eleven of the same size were administered, and the patient died before the twelfth could be given." Many writers refer to the administration of 840 grains in eight days[7] as the

3. "Materia Medica," 1843, p. 613.
4. Vol. xviii, p. 484.
5. Therapeutic Monthly, June, 1902, p. 218.
6. New Orleans Med. Jour., 1844-5, p. 28-35.
7. Amer. Jour. Med. Sc., vol. xxvii.

largest dose followed by recovery, but the preceding seems to surpass even its generosity. With equal frequency small doses have been responsible for fatalities such as that reported in this paper. One was that of a child, aged 11,[8] who died in 24 hours, from eight grains of calomel. Violent salivation followed with ulcerative inflammation of the mouth, face and neck, extensive destruction of the cheeks, disgusting fetor of the breath, and death on the eighth day.

With regard to the influence of mercurial salts on the kidneys of syphilitic subjects, a word of caution may also be in order. The general tendency at the present time is toward the belief that a nephritis occurring in a syphilitic, not definitely known to have had renal disability before the specific infection, should be looked on as a syphilitic process in the kidney, and treated with mercury. This belief, I suspect, is not always founded on fact, and treatment based on the theory may defeat the aim of the physician, creating a more serious condition than that already present. I have had recently under my care two young men, both suffering from secondary syphilis. In both instances, repeated urinalyses have been made since the first administration of mercury, and in both the urinary picture remains normal until a certain dosage has been sustained for a brief time.

In the first case one-half grain of the protoiodid three times a day is tolerated and usually controls a severe and otherwise persistent specific sore throat, the urine remaining normal. As soon, however, as one additional one-sixth grain is added to the daily dosage, albumin and hyalin casts appear in the urine; and on increasing the dose the patient complains of fulness under the eyes, headache, and backache, all of which disappear in a few days on discontinuing the use of the drug. This experiment has been tried for the third time during an exacerbation, when it was desirable to push the drug to its physiologic limit. There is always the same result. On each occasion, the urinary findings have eventually become normal, but each time after a long interval. The problem in this case is the decision as to the greater danger of the disease or the remedy.

The second case is very similar in its subjective symptoms, and in the early appearance of showers of hyalin casts on exceeding a certain small dosage of mercury. Up to the present, however, no albumin has been detected and even the casts disappear when the protoiodid is limited to half a grain three times a day.

It need hardly be stated that many syphilographers maintain a far higher dosage over months running, and seldom, if ever, require an examination of the renal secretion. There is still another side to the picture. Not long since I gave to a baby, syphilitic from birth, calomel in doses of one-sixth of a grain for weeks at a time, with rapidly favorable results, and with not a sign to indicate deleterious action on the kidneys. Heller claims that the form of the drug and the method of administration have much to do with the favorable or unfavorable action on the kidneys. With the bichlorid of mercury injected hypodermically he has never been able to observe a nephritis, though when using the salicylate of mercury and other insoluble salts he repeatedly produced serious forms of renal disease. He refers to numerous cases of albuminuria, following inunctions with mercurial ointment. As with most observers, his patients with nephritis recovered when the drug was discontinued. Virchow[9] cites the case of a patient aged 31, with syphilis, in whom a fatal ending followed a course of inunctions with mercurial ointment, extending over 14 days. Altogether a total of 50 grams was employed, 5 grams being used on each occasion.

Attention has been called to the danger involved in the indiscriminate use of mercury, even in syphilis, by no means with a view to discouraging its use, but its abuse. I consider it an abuse of the drug to employ it prior to a report on the urinary findings; or in the light of such instances of misfortune as have been cited, to employ it in any case in which the integrity of the kidneys is questioned.

It is also certain that in the light of these facts frequent examinations of both patient and urine form a *sine qua non* of conscientious and safe mercurial treatment of any disease. The most vigorous patient may display a violent susceptibility to minute doses of the mildest salt, while a weakling may tolerate large quantities over a long period.

8. Dublin Hosp. Reports, vol. iv, p. 299.
9. Berlin. klin. Wochft., 1887, p. 252.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XXI.

DRUGS ACTING ON THE SKIN AND MUCOUS MEMBRANE, MAINLY WITH REFERENCE TO EXTERNAL USE.

There are so many substances which have been used as irritants under varying conditions that we can not attempt to do more than mention the more useful of the agents frequently employed for this purpose, together with some of the conditions in which clinical experience has shown them to be most beneficial.

While the employment of counter-irritants is almost wholly empirical, the regions of the skin which Brunton has indicated for their use when it is desired to influence the internal organs correspond well with those which Head has shown to exhibit tenderness of the skin in connection with diseases of the same organs.

Brunton directs the irritant to be placed over the larynx, ovaries or sciatic nerve for affections of those parts, over the ensiform cartilage for gastric disturbance, above and below the knee in rheumatism, over the ball of the great toe (dorsal surface) in gout, behind the ear in facial neuralgia, at the base of the brain and back of the neck for cerebral affections, and along the dorsal region of the back to affect the uterus.

The mildest of irritants is water or saline solution used as a bath. The shock of the cold water applied to the skin and the slight irritation of the subsequent friction, preferably with a coarse towel, are followed by a reaction attended with a considerable and lasting stimulation. Very cold water may produce too great a shock in persons who are not robust, and the result will be depression, but there can be little doubt that baths are extremely beneficial when the temperature is so regulated that a healthy glow and a feeling of well-being succeed. It seems that the question of the usefulness or the harm of cold baths, about which there has been so much contention, resolves itself into a question of individual experience. If a feeling of exhilaration and no subsequent depression follows the bath it is not harmful; if no such exhilaration occurs, but a distinct depression is observed, there can be little doubt that the bath is doing harm. In such cases a slight increase in the temperature of the water, with a shorter time and more rubbing, may secure the benefits sought. The same person may require different conditions of temperature at different times, corresponding to variations in the general health.

A mixture of salts is sometimes added to the bath to increase the slight irritant action.

Even milder than the friction, which forms so essential a part of the bath, is the irritant action of the astringents, which

have been discussed in Chapters XII and XIII, but these are followed by lessened irritation, hence they are not considered among the irritants.

Rubefacients.

Rubefaction is the result of a slight irritation of the skin. There is a slight increase in the exudate from the capillaries, and if the irritation be not long continued this exudate is reabsorbed and the part speedily returns to the normal condition.

While all irritants, mild and caustic, cause rubefaction, we shall first consider only those which are used for that stage alone, and take up the vesicants pustulants and caustics later.

ALCOHOL.

Alcohol alone, diluted with water or in the form of hamamelis water, alcoholic tinctures, spirits or liniments, is used more frequently, perhaps, than any other mild irritant, with the possible exception of the bath.

Applications containing alcohol are useful in painful swellings, bruises and a great variety of minor complaints commonly treated in the household without calling on the physician.

While it is probably quite unnecessary, at this late date, to call particular attention to the fact that there is a distinct and a very great difference between the official or ethyl alcohol and the various forms of wood or methyl alcohol, nevertheless the insidiously poisonous properties of the latter substance do not appear to be so well appreciated by the general public. The number and the variety of cases of blindness and of death that have been reported by Buller and Wood[1] amply demonstrate that even the external use of any form of wood alcohol is not entirely free from danger and that its use in any form of medicinal preparation should not be countenanced or tolerated.

Among the numerous preparations of the United States Pharmacopeia that have been and are being used as topical applications, largely because of the rubefacient properties of the alcohol that they contain, we may enumerate:

AQUA HAMAMELIDIS.—U. S.—This preparation, more popularly known as extract of witchhazel, or distilled extract of witchhazel, is now, for the first time, included in the Pharmacopeia. While the preparation itself has been known for many years, and has been used extensively as a household remedy, it has never met with much favor on the part of the medical profession. The official preparation is directed to contain 15 per cent. of alcohol and should be free from methyl alcohol or any of its derivatives.

TINCTURA ARNICÆ.—U. S.—Tincture of arnica represents 20 parts of the dried and powdered flower heads of *Arnica montana* in diluted alcohol. This preparation was at one time very popular with medical practitioners as a topical application in so-called "sprains" and in bruises, but is now seldom employed. The same is true of:

TINCTURA CALENDULÆ.—U. S.—This preparation represents 20 per cent. of the dried and powdered florets of *Calendula officinalis*, the well-known marigold of our gardens.

Probably the most objectionable feature in connection with the use of any of the official tinctures as topical applications is their tendency to stain. This objection is largely overcome by the use of the simple diluted alcohol, one of the numerous unofficial toilet waters or colognes, or by the use of one or the other of the official spirits.

In addition to SPIRITUS FRUMENTI.—U. S. Whisky, and SPIRITUS VINI GALLICI.—U. S.—Brandy, the most frequently used of the class of preparations is:

SPIRITUS CAMPHORÆ.—U. S.—This is an alcoholic solution containing 10 per cent of camphor.

SPIRITUS GAULTHERIÆ.—U. S.—This contains 5 per cent. of oil of gaultheria in alcohol.

The most widely used, as well as the most popular, of the mildly rubefacient preparations of the Pharmacopeia is:

LINIMENTUM SAPONIS.—U. S.—Soap liniment is variously known as liquid opodeldoc camphorated soap liniment and camphorated tincture of soap. It contains 6 parts of soap, 4.5 parts of camphor, 1 part of oil of rosemary and 72 parts of alcohol with sufficient water to make 100 parts. This preparation has long been popular as a topical application and is not infrequently used as a vehicle for other more active rubefacients, sedatives and anodynes.

A somewhat typical compound liniment is the

LINIMENTUM CHLOROFORMI.—U. S.—This is a simple mixture of 30 parts of chloroform with 70 parts of soap liniment, and constitutes a very good illustration of the possible uses of soap liniment as a solvent or vehicle.

CHLOROFORM.

Chloroform is one of the more active rubefacients and the action quickly passes this stage if its use be continued. Chloroform readily dissolves fat, and, being very volatile, it penetrates quickly and causes considerable redness and pain. A few drops of chloroform placed on a little absorbent cotton and applied over a painful joint, such as a bunion, in such a way that evaporation of the chloroform is prevented, causes a good deal of pain and often affords speedy relief. It should not be applied in this way for longer than ten or fifteen minutes. Chloroform may be used as a counter-irritant by putting a few drops on cotton in a wide-mouthed bottle; the mouth of the bottle is then applied to the area to be treated, for a few minutes at a time.

Chloroform liniment, noted above, is much less painful, or not at all so in most cases, and is much slower in producing its effects. Chloroform liniment is usually directed to be applied to the affected part by being thoroughly rubbed in, thus securing the additional rubefacient action of friction. It may, however, be more economically applied, and it is frequently quite as effective, if directed to be put on cotton, applied to the affected surface and then covered with several layers of cloth or otherwise prevented from evaporating too rapidly.

Volatile Oils.

All the volatile oils are irritant, their action ranging from that of the mild sandalwood or copaiba oil to the extremely irritant volatile oil of mustard or even the caustic action of oil of cloves. The use of the milder members of this series for their effects on the urinary tract has been mentioned in connection with diuretics. Some of the volatile oils, such as pennyroyal and savin oils, which are somewhat more irritant, have been employed to produce abortion by the reason of irritation of the intestine and the consequent participation in the effects by the uterus.

Official Preparations.

Of the official substances that are more or less closely connected with the turpentine group and are frequently used externally, we have:

OLEUM ROSMARINI.—U. S.—This is a volatile oil distilled from the fresh flowering tops of *Rosmarinus officinalis* and is one of the ingredients in the well-known soap liniment.

OLEUM SABINÆ.—U. S.—Oil of savin has been quite extensively used as a local irritant. It must be used with caution in order to guard against the tendency to act as a vesicant.

OLEUM TEREBINTHINÆ.—U. S.—Oil of turpentine is the volatile oil distilled from turpentine. Even as an external application it is not infrequently used in the form of

OLEUM TEREBINTHINÆ RECTIFICATUM.—U. S.—This is identical with oil of turpentine in chemical properties, but it has a more agreeable odor.

TEREBINTHINA.—U. S.—This is officially described as the concrete oleoresin of *Pinus palustris* and of other species of *Pinus*.

RESINA.—U. S.—Rosin, resin or colophony is the residue left after distilling off the volatile oil from turpentine. The last two articles, rosin and turpentine, are interesting only as constituents of several official preparations, of which the best known are:

CERATUM RESINÆ.—U. S.—This is a cerate containing 35 parts of rosin, 15 parts of yellow wax and 50 parts of lard.

CERATUM RESINÆ COMPOSITUM.—U. S.—This is a revival of the one-time official Desbler's salve. It contains rosin, yellow wax, prepared suet, turpentine and linseed oil.

LINIMENTUM TEREBINTHINÆ.—U. S.—This is a solution of 65 parts of resin cerate in 35 parts of oil of turpentine. It has

1. THE JOURNAL A. M. A., Oct. 1, 8, 15, 22 and 29, 1904.

been recommended to be used in place of the oil of turpentine as a local application when the action of the latter might be considered as too actively irritating.

Oil of turpentine may be applied either in the form of the official liniment, diluted with a fatty oil, or it may be used in substance as a stupe; the latter is made by saturating a cloth with hot water, wringing it out and then dropping on it a little warm oil of turpentine, or dipping the moist cloth into the oil of turpentine and again wringing it out and applying while still warm.

Local applications of this kind will be found useful in bronchitis. Great care must be taken in warming oil of turpentine, as its vapor is inflammable. It should be warmed by placing the bottle containing it, uncorked, in a vessel of hot water away from fire.

Plasters of Burgundy pitch, Burgundy pitch with cantharides and of resin were formerly official. In practice these old-time resin plasters have long since been replaced by the more modern rubber-base plasters. The more representative of the rubefacient plasters now in use is the

Emplastrum Capsici.—U. S.—This is directed to be made by applying a thin coating of oleoresin of capsicum to adhesive plaster.

CAPSICUM.

Capsicum.—U. S.—The dried ripe fruit of *Capsicum fastigiatum* constitutes one of the most popular of the rubefacients used at the present time. Of the available official preparations we have:

Fluidextractum Capsici.—U. S.—This is made with strong alcohol.

Tinctura Capsici.—U. S.—This is made with a mixture of 95 parts of alcohol with 5 parts of water, and represents 10 per cent. of the crude drug.

Either of these preparations may be used diluted with alcohol or with soap liniment as a local rubefacient or irritant.

Oleoresinæ Capsici.—U. S.—This is made by extracting capsicum with acetone and may be used in the shape of plaster, as noted above, or in the form of the now popular mixture with petrolatum.

A typical prescription for a rubefacient of the latter type would be as follows:

R. Oleoresini capsici.....gr. xv 1|
Petrolati.....ʒ iii 100|
M. Fiat unguentum. Sig. Use locally.

MENTHOL.

Menthol.—U. S.—This is a secondary alcohol obtained from the oil of *Mentha piperita* or other mint oils. This substance is very largely used in the form of pencils or cones, sometimes in alcoholic solution, rubbed on the skin in neuralgia. It causes a burning and then a sensation of coolness.

Camphorated Chloral.—N. F.—This preparation, quite popular in some parts of the United States as a local application, consists of equal parts of hydrated chloral and camphor. It is a thick, oily-looking liquid, which is extremely irritating. It may be diluted with the fatty oils, alcohol or soap liniment.

MUSTARD.

Mustard is official as:

Sinapis Alba.—U. S.—White mustard is the seed of *Sinapis alba*.

Sinapis Nigra.—U. S.—Black mustard is the seed of *Brassica nigra*.

Oleum Sinapis Volatile.—U. S.—This is a volatile oil obtained from black mustard (freed from its fatty oil) by maceration with water and subsequent distillation.

Charta Sinapis.—U. S.—Mustard paper is directed to be made by coating rather thick, well sized paper with a mixture of rubber cement and powdered black mustard which has been deprived of its fatty oil.

Mustard foot baths, containing one or two ounces of powdered or ground mustard, preferably the black, thoroughly mixed with a gallon of warm water, are extremely useful for the relief of mild congestions of the head and of the gastro-intestinal tract.

Prompt relief is often obtained in this way from headache and from pain in the stomach. In many cases, even mild attacks of indigestion show decided improvement almost immediately; the action is further accelerated if a hot-water bag is placed over the region of the stomach at the same time.

The feet should be placed in the bath while the legs and feet are briskly rubbed with the mustard water for ten minutes or until the skin is red and some irritation is felt. The extremities are then rubbed dry with a coarse towel and wrapped in flannel or a blanket. When a slight degree of counter-irritation is desired for some time, a mustard poultice is employed. This is made by mixing one part of the ground black mustard with about five parts of flour (or ten parts of flour in the case of children), and mixing with enough water to form a mass. This is then spread on cheesecloth and applied at once.

Mustard poultices have been largely replaced by the much more convenient mustard papers, which are dipped in tepid water and applied at once. They are prone to become worthless in damp climates, since the absorption of moisture causes the slow development of the volatile oil, which then evaporates as fast as it is formed. With proper precaution, however, they may be preserved for a considerable length of time, and they will usually be found to afford the most convenient means of applying counter-irritation.

Heat.

The uses of heat have been touched on elsewhere. They are so numerous and so well known that they scarcely require further mention at this time. We may be permitted to call attention, however, to some of the various forms of cataplasms or poultices that are frequently used for their rubefacient or irritant properties.

Among the official substances that are frequently used for the preparation of poultices we have:

Linum.—U. S.—Linseed or flaxseed is the ripe seed of *Linum usitatissimum*.

Ulmus.—U. S.—Elm or slippery elm is the dried bark of *Ulmus fulva*, deprived of its periderm.

Carbo Ligni.—U. S.—This is charcoal prepared from soft wood and powdered.

Poultices are ordinarily prepared by mixing the requisite amount of ground flaxseed, ground elm bark or other substance with enough boiling water to make a rather stiff mass, inclosing this in a piece of gauze or muslin and applying to the surface.

The rubefacient properties of a poultice may be increased by the addition of ground mustard, tincture of capsicum or of oil of turpentine. For removing fetor or to act as disinfectants, poultices may have added to them powdered charcoal, chlorinated lime or the official solution of chlorinated soda.

The present eighth edition of the United States Pharmacopeia has included one poultice, as:

Cataplasma Kaolina.—U. S.—This consists of kaolin, glycerin and boric acid, with thymol, methyl salicylate and oil of peppermint as admixture to give it a pleasing odor. This preparation, like other poultices, is most efficacious when applied hot, but, as its action depends to a very great extent on the rubefacient properties of undiluted glycerin, due precaution should be taken to prevent the absorption of water or of watery vapor during the course of preparation or when heating it preparatory to applying.

Practically the same preparation is being offered to the medical profession at the present time under a variety of trade names, and while the combination undoubtedly has uses, many if not all of the positive claims that are made in connection with it are, to say the least, somewhat exaggerated, and the preparation should not be expected to accomplish more than might reasonably be expected from an equivalent application of heat and mild rubefacients.

One other point in connection with this particular preparation that has been the cause of some controversy in the advertising pages of medical journals is the question of priority. This question may safely be ignored, as the mixture, apart from the flavoring ingredients, can not be said to be new. Glycerin magmas have been known and used for upward of half a century, and a formula for practically an identical preparation may be found in the *Pharmaceutical Journal*, London, for March, 1858.

Heinrich Stern has very recently called attention to the revival of the use of formic acid for increasing the sexual desire, much as cantharides is used. Formic acid has long been known and used in domestic practice as a rubefacient. In Germany it has found considerable favor in regular medicine and is official in the German Pharmacopeia as a 24 per cent. solution and also as a spirit of formic acid, the latter containing 4 per cent. of the official solution of formic acid in a mixture of alcohol and water.

IODIN.

The official preparations of iodin that are used as rubefacients are:

LIQUOR IODI COMPOSITUS.—U. S.—This is better known as Lugol's solution; it contains 5 per cent. of iodin and 10 per cent. of potassium iodid in water.

TINCTURA IODI.—U. S.—This is an alcoholic solution and contains 7 per cent. of iodin and 5 per cent. of potassium iodid.

UNGUENTUM IODI.—U. S.—This contains 4 per cent. of iodin and 4 per cent. of potassium iodid in a mixture of glycerin and benzoinated lard.

Iodin in the form of the tincture or of the solution is very commonly applied to the skin as a counter-irritant. Repeated applications produce a caustic effect, but the action is very easily controlled. One great disadvantage possessed by the official preparations of iodin is the dark staining of the skin. Numerous efforts have been made to obviate this by using so-called colorless tinctures of iodin, which are merely solutions of iodids. It is much better to apply the iodin until sufficient irritation is caused and then remove the stain by washing with dilute solution of ammonia water or with a solution of sodium thiosulphate.

A more modern preparation of iodin that promises to replace the official preparations as an external application is a solution of iodin in saponated petrolatum, a formula for which will be found in the edition of the National Formulary now in press.

Saponated petrolatum may be made by simply mixing:

Liquid petrolatum	℥ii	60
Oleic acid	℥i	30
Spirit of ammonia	℥ss	15

In the order enumerated, the only necessary precaution being to use preparations that correspond to the requirements of the United States Pharmacopeia.

This simple saponated petrolatum will readily dissolve iodin up to 10 per cent. of its weight. A 5 or 6 per cent. solution of iodin, however, will be found to be most useful and not too irritating.

Probably the greatest advantage possessed by a preparation of this kind is due to the fact that it causes little or no stain and may be readily washed off with soap and warm water.

Saponated petrolatum may also be used for applying a number of other rubefacients, such as camphor, menthol, chloroform, methyl salicylate and turpentine.

Clinical Notes

UNUSUAL EFFECT OF HOMATROPIN.

REPORT OF TWO CASES.

JOSEPH W. SHERER, M.D.
KANSAS CITY, MO.

The following report of an extraordinary effect of a much used drug is instructive and of interest as illustrating the idiosyncrasy of individuals in their relation to medicines. In these cases the apparent physiologic action of homatropin hydrobromid was irregular to an extraordinary degree. The two observations here chronicled are the only instances which have come under my notice of excessive persistence of the effect.

I am unable to estimate a percentage of frequency for the occurrence of this accident, but suppose it to be rare, for these two cases are the only instances which have occurred in using homatropin several thousand times. The experience of others in this particular should be of interest to all. It is of moment to every practitioner, for the reason that it is especially in the more urgent cases of persons whose time is of great value that homatropin is employed.

I have just had it forcibly impressed on me how painfully embarrassing it may be to promise an active business man removal from his important affairs for one or two days only, and then find two weeks necessary for the eyes to regain accommodation and light tolerance. For this reason the experience of others is desirable.

CASE 1.—May, 1897. Female, aged 25, housewife, mother of a family, asthenopic symptoms pronounced. A 3 per cent. solution of homatropin was used. An application was made at bedtime, on rising and at intervals of ten minutes for an hour and a half before measuring the refraction. The patient came to the office immediately after breakfast. The eyes were in no way unusual. The refraction was plus and compound and the error was of an ordinary amount only. The mydriasis and cycloplegia persisted for eight days and the patient manifested great anxiety and impatience. I could not rid myself of the impression that the perturbation and alarm were partly assumed, but as the cause was real there was absolutely no way but to counsel patience and to emphasize the certainty of recovery with the lapse of time.

CASE 2.—January, 1906. Male, aged 41, business man, very busy, neurasthenic, the lifelong subject of periodic violent attacks of migraine. Homatropin solution was used half as strong and less frequently than in the foregoing case on account of age. The same vial was used on the preceding day on a newspaper man, aged 43, with recovery in eighteen hours, and subsequently on two other patients, one of whom reported complete recovery in twenty-four hours and the other in thirty hours. The pharmacist was positive as to the accuracy of the compounding of the prescription. The effect persisted with complete cycloplegia for fifteen days. This was a source of great annoyance to the patient, who bore it, however, with much resignation and fortitude, the more patiently as he keenly felt the need of relief from his malady. The recovery was complete eventually.

In neither of these cases was there any complication such as, for example, the onset of glaucoma. In the latter case there was more danger on account of the age. Had so unfortunate a thing occurred, eserin would probably have controlled it.

VICARIOUS MENSTRUATION DURING PREGNANCY.

N. P. McGAY, M.D.
SHILOH, OHIO.

Patient.—M. D., aged 25, married about five years.

History.—The patient had a miscarriage about three years ago, probably self induced. The uterus had to be "scraped out" about three weeks later. She has always been healthy and has had no disorders of menstruation up to this time. The flow occurred every thirty days, until May 30, 1905, since which time it has been decidedly irregular. On June 29 and 30, she had severe attacks of nose bleed, but no signs of menstrual flow. July 30 and 31, the same thing occurred. On August 19 she became alarmed at the non-appearance of menstruation and consulted me. I made a diagnosis of probable pregnancy from the symptoms then discernible. On August 30 and 31, she had a return of the menstrual flow but no nose bleed. In September and October, however, she again had severe attacks of epistaxis. On November 23, I made a thorough examination and confirmed my previous diagnosis. Epistaxis again occurred on December 1. On December 10, she took a trip of about ten miles in the country over rough roads, and an hour or two after her return labor pains set in. On the morning of December 12, she gave birth to a four-pound girl which lived twenty-three hours. The patient was up in the usual ten days, but she has had neither menstrual flow nor nose bleed since

A SIMPLE METHOD OF FINDING AN EASILY ACCESSIBLE PORTION OF THE LATERAL SINUS.*

* Read before the Wayne County (Detroit) Medical Society, May 7, 1906.

EMIL AMBERG, M.D.
DETROIT, MICH.

Four right and four left temporal bones picked out at random, show that an easily accessible portion of the lateral sinus can be found when we open that part of the mastoid process which is located (Fig. 1) in the direction of the line

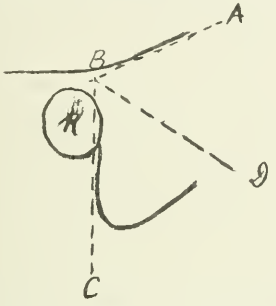


Fig. 1.—M., Meatus externus. A. B., Linea temporalis. B. C., Anterior mastoid line. B. D., Bisecting line of angle A. B. C. and directing line for lateral sinus.

which divides into two halves the angle formed by the linea temporalis and the anterior border of the mastoid process (an angle of about 115 degrees). This topographic consideration is important from a clinical point of view.

CERTAIN MOTILE ORGANISMS IN THE BLOOD PLASMA IN DENGUE.

CONRAD REICHE.
Sergeant, Hospital Corps, U. S. Army.
CEBU, P. I.

While in charge of the laboratory of the military hospital in Cebu, P. I. (Captain Kulp) it was my duty to examine the blood of all malarial and dengue patients. An epidemic of the latter disease occurred during December, 1905, and lasted about six weeks. No malarial parasites were found, but I observed in nearly every case very active, small (about 2 micron), round translucent bodies, with clearly defined edges, very motile, and easily visible with a 1/6 objective, but better with 1/12 oil immersion lens. They were seldom or never found in the erythrocytes, but often on them, as well as free in the plasma. They appeared about the second day of the fever, and could never be found after the temperature became permanently normal or after the administration of quinin. They sometimes remained active for as long a period as an hour and three-quarters. Unfortunately, the epidemic ceased suddenly and the contemplated staining and mosquito experiments had to be abandoned.

New Instruments

SET OF THREE NEW INSTRUMENTS FOR THE TREATMENT OF CHRONIC ENDOTRACHELITIS.

DANIEL H. CRAIG, M.D.
BOSTON.

The length of the three instruments is equal, and is 22 cm. This length was chosen as the shortest which would enable the gynecologist to satisfactorily accomplish the treatment without allowing his hands to come in contact with the patient. This seemed to me important because this method being designed for use at the office or out-patient clinic the thorough sterilization of the hands consumed too much time. With this length of instrument ordinary manual skill and dexterity render such sterilization entirely unnecessary.

The cervical forceps (Fig. 1) was designed to grasp the anterior aspect of the portio vaginalis as near as possible to, but not into, the external os. The tissues are here very often so soft as to tear when so grasped by the ordinary tenaculum or tenaculum forceps under the strain to which this grasp is to be subjected. The ordinary grasp with one blade within and the other without the cervical canal will later be seen to be obviously impossible in the use of either the dilator or the curette. The two pairs of opposed teeth give a grip which has never lacerated. The curve on the flat facilitates the combined use of the forceps and dilator with one hand.

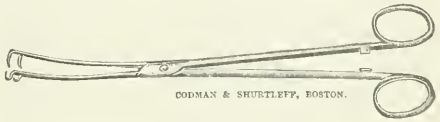


Figure 1.

The external os dilator was suggested by the conical calibrator used in dilating the external urinary meatus preparatory to cystoscopic work. Each of its dimensions is definite and has its *raison d'être*. It is of rigid steel throughout. The diameter of its tip is 2 mm., which is as small as it could be made without actually giving it an angular point (Fig. 2). The length of the cone from tip to shoulder is 2 cm. This length was chosen because being 0.5 cm. less than the ordinary depth of the cervical canal it would even permit of some eversion, due to laceration, without the tip of the cone impinging on or going through the contracted internal os. A cervix in which there is more than 0.5 cm. foreshortening, owing to laceration and eversion, is so patulous as not to require the use of any dilator. The narrow parallel surface just below the shoulder facilitates the retention of the dilator within the ex-

Figure 2.

ternal os long enough to produce sufficient relaxation without maintaining so forcible a degree of pressure as to be constantly disagreeable to the patient. The shoulder is, of course, self-explanatory. The flattened base of the handle facilitates the maintenance of a steady unirritating pressure. The perimeters of the shoulders are made hexagonal to prevent rolling and so coming in contact with unsterilized material.

The only features about the curette which need attention are the shape and width of its cutting blade. It is sharp, the edge being obtained by beveling from above downward and inward, making the blade cut as the curette is withdrawn. The blade and its fenestrum are triangular, presenting a base of 6 mm. and relatively sharp angles. The base is just twice

Figure 3.

the diameter of the normal internal os as stated by Deaver (Fig. 3). This excess width serves to render it impossible to introduce the curette past the internal os, unless it be dilated, which in itself constitutes a contraindication to the use of this curette, without the employment of sufficient force to lacerate the tissues. The sharp angles serve on the rotation of the curette, to remove the pathologic tissues too near to the internal os to be readily reached in the ordinary traction of the curette, and are especially useful in those cases in which a sharp angle exists just below the internal os due to pressure atrophy with excavation or internal laceration of the cervix. Three furrows on the appropriate surface of the hexagonal handle indicate the direction of the cutting blade. The curette is of rigid steel throughout, no necessity for flexibility having been encountered.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[For other information see second page following reading matter.]

SATURDAY, MAY 19, 1906.

THE IDENTIFICATION OF SPECIES IN BACTERIOLOGY.

In the early days of bacteriology it seemed to some workers a relatively simple matter to distinguish between different species of bacteria and either to assign to every organism its place in an established group or else to install it as a "new species." It soon became apparent, however, that the ordinary cultural characters afforded an insecure basis for such differentiation, since micro-organisms closely related in some of their growth phenomena showed in others wide divergence, and since also one and the same bacterium varied greatly in its manner of growth and in its chemical products under different conditions and at different times. Morphologic differences were, if anything, less to be relied on than physiologic. The biologic relationship of different micro-organisms consequently became, and to some extent still remains, a subject for speculation rather than for exact verification.

The discovery of the agglutinative reaction, now so widely used in the Gruber-Widal test for typhoid fever, was looked on at first as bringing order into the chaos of bacterial types and groups, and was thought to supply a criterion of specificity to which no exception could be taken. Further investigation has shown, however, the limitation of the agglutinative reaction as a decisive standard of species differentiation. Park,[1] in an able address, has recently pointed out some of the manifold sources of error that tend to vitiate the value of the reaction as ordinarily employed, and that prevent its acceptance as a never-failing diagnostic aid. Even among typhoid bacilli, the group in which the reaction has been most widely and successfully used, inagglutinable races are sometimes encountered, so that if a bacterium isolated from water fails to agglutinate with a true typhoid serum, it can not on that account alone be contumeliously rejected as a non-typhoid organism. Among the related group of colon bacilli, as is well known, agglutination by specific sera affords no assistance whatever in identifying bacteria of similar origin and identical cultural characters. In general, the groups of common saprophytic bacteria do not lend themselves to differentiation and classification on the basis of the agglutinative test.[2]

While agglutination has, therefore, for some time, been losing ground as an absolute and final method for identifying bacterial species, another phenomenon, arising out of the injection of animals with bacterial cultures, has been considered of great importance. This is the so-called Pfeiffer's phenomenon, which is dependent on the development of a specific bactericidal substance in the body of an immunized animal. Many observers have laid great stress on the specificity of this germicidal reaction, which has been maintained to furnish proof of bacterial identity even when everything else, including the agglutinative test, failed to declare itself positively. Especially interesting, consequently, is the recent discovery by Besserer and Jaffé[3] of strains of typhoid bacilli which react atypically to the bactericidal sera. The genuine nature of these atypical typhoid organisms is shown by a variety of characters, among others by the fact that animals immunized against true typhoid bacilli were also immune to the strains in question. Susceptibility to a specific bactericidal serum must, therefore, go the way of the other absolute criteria of differentiation; absence of this susceptibility in the case of a typhoid-like bacillus is no proof that the organism is not, after all, a true but atypical strain of this species. As in the case of the agglutinative reaction, failure to respond to the test is not decisive.

LATENT TUBERCULOSIS IN CHILDHOOD.

Tuberculosis in childhood, especially latent tuberculosis, is a field comparatively neglected in the modern warfare against this disease. We have grown accustomed to concentrating our efforts on the adult consumptive and on general methods of prophylaxis and have not entered with any degree of fullness into the question of preventive measures for predisposed children. That latent tuberculosis is common in childhood must be admitted, even by those who are not willing to go so far as Behring does in this direction. Two interesting articles recently published from Heubner's clinic[4] show that the blood of many non-tuberculous children agglutinates tubercle bacilli. Whether or not this test is to be regarded as positive proof of tuberculous foci in the body is still a question, but it was significant in these experiments that blood from the umbilical cord never agglutinated tubercle bacilli and the percentage of agglutinations was lowest in children with no suspicion of tuberculosis, higher in children with chronic inflammation of mucous membranes, hypertrophied tonsils, adenoids, etc., and still higher in children evidently scrofulous. Salge found that in 12.5 per cent. of babies under a year old, apparently non-tuberculous, the blood agglutinated tubercle bacilli, and Schkarin found the same to be true of 21.1 per cent. of non-tuberculous children.

The death rate from tuberculosis in this country is not nearly so high as in Germany, and it is probable that if such examinations were made of American chil-

1. Jour. Infec. Dis., Sup. No. 2, 1906.
2. M. L. Lincoln: Jour. Infec. Dis., 1904, I, p. 268; and M. Heffernan: Science, Feb. 9, 1906.
3. Deutsch. med. Wochft., Dec. 21, 1905.
4. Jahr. f. Kinderheilkunde, Jan. 2, 1906.

dren the proportion of positive cases would not be nearly so great. If, however, it were only half as great, the number of children with latent tuberculosis would be large enough to cause grave concern. It seems that the percentage is higher in school life than in early childhood, just as it is higher in childhood than in infancy. Roeder, of Berlin, reported to the Naturforscher Versammlung, in 1905, the results gained by systematic examination of school children in that city. Evidence of latent tuberculosis was found in a surprisingly large number of children, and the number increased with each year of school life.

Unfortunately, we have no statistics in this country as to the frequency of tuberculosis in school children. W. K. Chalmers has given us those for Glasgow, and by classifying the children according to the economic standing of their parents he is able to show, as one would expect, that the number of tuberculous children increases with the increase of poverty. Only 3.4 per cent. of the school children whose families occupy three rooms had tuberculous lesions, as against 5.9 per cent. of those occupying two rooms and 8.3 per cent. of those whose families were crowded into one room.

It is this last class, the children of the very poor, especially the poor in large cities, for whom a systematic campaign of prevention should be planned. A child with latent tuberculosis in a poor family has little chance of overcoming the infection. His days are spent in a crowded, unhealthful home and in a school room from which he usually graduates directly into the factory. Tenement house inspection and control of conditions in factories are legitimate functions of the municipality and their importance in the warfare against tuberculosis has been pointed out again and again; but the control of conditions in school houses is still more indisputably the duty of the municipality, for while the city does not compel a child to live in a certain house or to work in a certain factory it does usually compel him to spend the greater part of his day inside a certain school room. The child has a right to demand that, while he is there, his health should be safeguarded. Yet what is really the case? What do we do for the health of the child in school, especially of the child with a predisposition to tuberculosis? Apparently we are not so advanced in school hygiene as are our European contemporaries, for the death rate among school children in the United States is higher than in Europe.[2] Take the matter of ventilation: The great majority of school rooms, especially those frequented by unwashed children in old clothes, become close and foul long before the end of the half day's session, and it is a question whether the modern room, equipped with a complicated ventilation system which rarely works, is not worse in this respect than the old-fashioned school which depends on windows for fresh air.

In the matter of cleanliness we are still more remiss. Dry sweeping, or, at the best, sweeping with wet sawdust, is the rule in most school houses. In Boston a few years ago it was found that 41 per cent. of the schools had never had their floors washed. Chicago does better than that, for her school floors are washed five times a year, but imagine any office building with so low a standard of cleanliness as that. Dust from the streets tracked in by hundreds of feet rises from the floor to mix with the still more irritating dust from the blackboard, and in this atmosphere, often unrelieved by a single breath of fresh air, the child must spend the best hours of the day. Surely it is a wasteful and foolish policy which neglects the sanitary conditions of the school house, compels the child with latent tuberculosis to spend a large part of his day in surroundings favorable to the development of the disease, and assumes responsibility only after he has succumbed to it and become a charge on the community.

The child has a right to demand a sanitary school room: that is obvious. That he has a right to demand wholesome feeding during his school life would not be so readily admitted, yet it may prove to be an economy on the part of the city to undertake the feeding of its ill-nourished school children rather than to be obliged to assume the whole care of them in later years. This is the way the matter is regarded in many European countries. England, facing the enormous problem of her half-starved, degenerating, city slum population, has at last begun to experiment with free school dinners, provided by private charity, and it is probable that legislative provision for public relief of this sort will be enacted during the coming session. On the continent of Europe the system of free or very cheap meals for school children has been instituted in France, Germany, Belgium, Italy, Norway and Switzerland. The system is different in the different countries, but in all there is a unanimity as to the disastrous results of underfeeding in school children, the large number of underfed children in the poor quarters of most cities and the enormous improvement which follows the institution of these school dinners.

European city fathers take longer views than we do here and are serenely undisturbed by the cry of "socialistic." They have studied the economic significance of tuberculosis and have decided that, simply from the financial point of view, prevention is better than cure. And prevention of tuberculosis must be begun during the early years of life.

THE POISONS PRODUCED IN SUPERFICIAL BURNS.

In a certain proportion of cases of extensive but superficial burns, death follows after an interval of from six hours to a few days, apparently because of a profound intoxication. As evidence of intoxication, we have not only clinical manifestations, such as delirium, hemoglobinuria and albuminuria, vomiting, bloody diarrhea, etc., but, more convincingly, the anatomic findings at

2. G. K. Dickenson: "Sanitary Inspection of Schools and School Children," 1906.

autopsy, which are strikingly similar to those resulting from acute intoxication with bacterial products. Thus Bardeen found quite consistently cloudy swelling and focal and parenchymatous degeneration in the liver and kidneys; softening and enlargement of the spleen, with focal degeneration in the Malpighian bodies; and particularly degenerative changes in the lymph glands and intestinal follicles resembling those observed in diphtheria, which McCrae considers due to proliferation and phagocytosis by the endothelial cells of the lymphatic structures. Marked changes are usually present in the blood, consisting of fragmentation and distortion of the red corpuscles, hemoglobinemia, loss of water with a relative increase in the number of corpuscles by from one to four millions per cubic millimeter, an increase in the blood platelets, and a rise in the number of leucocytes to from 30,000 to 50,000. Hemoglobinuria is also frequently present, and almost constantly gastrointestinal irritation occurs with anatomic evidences of acute enteritis, acute gastritis, and occasionally gastric or duodenal ulcers. According to Korolenko, the sympathetic nervous system is seriously involved.

It seems probable, therefore, that poisons are formed as a result of the burn that have the effect of causing hemolysis, and that are also cytotoxic for parenchymatous cells and particularly for nervous tissues. These hypothetical poisons seem to be eliminated by the intestines and kidneys, which are injured by the poisons in their passage through these organs. The attempts to explain all the observed effects of burns as due to thrombosis or to embolism by altered red corpuscles seem to have failed, for the peculiar location of the lesions (e. g., duodenal ulcers, necrosis in the Malpighian bodies of the spleen, etc.) does not agree with this hypothesis, and there are too many evidences of the presence of some decidedly toxic substance in the blood. There can be no question that the poisonous substance or substances are formed in the burned area and not in the internal organs as a result of hyperpyrexia, as has been suggested, as shown by numerous observations. Thus if the burned area is removed immediately (in narcotized experimental animals), death will be prevented, whereas, if the burned tissue be permitted to remain for a few hours, death will occur. The poison appears to be absorbed from the burned area into the blood, for if circulation is shut off from the burned area no intoxication results; this probably explains why deep destructive burns of small areas, which are associated with local thrombosis, are much less serious than a superficial slight scalding over a large area.

Apparently the poison is produced chiefly or solely in the skin, for burning of muscle is not followed by intoxication (Eijkman and v. Hoogenhuyze[1]). Numerous investigators have reported finding poisonous substances in the blood, tissues or urine of burned men and animals, but the reports disagree widely in details. Thus Dietrichs states that the blood of burned animals contains hemolysins and agglutinins, which could not be corroborated by Burkhardt[2] or by Pfeiffer.[3] The latter, however, finds that the urine, serum and organs of burned animals contain substances poisonous for the same and for different species, which is in accord with the results of numerous earlier investigators. The poisons are neurotoxic and necrogenic in their properties, and act without a period of incubation. Apparently, according to Pfeiffer, they are not ptomains, nor yet pyridin derivatives, as many investigators have contended, but resemble more closely the labile poisons of snake venom. The neurotoxic substance is more thermostable than the necrogenic substance, which is very easily destroyed by heat. Pfeiffer believes it probable that the poisons are derived from the splitting of proteids altered in composition by the heat burning. The hemolysis he attributes to direct injury to the blood in its passage through the heated area, and not to the action of poisons; this is very possible, since red corpuscles fragment after being heated to 52°, and may be seriously impaired functionally at 45°. There are many authors, indeed, who consider the blood changes the chief cause of death, but the weight of evidence is in favor of the theory of the development of toxic substances in the burned skin.

In spite of Pfeiffer's researches, however, the nature of these poisons must be considered as completely unknown, for numerous other observers have described "peptotoxins" (Fraenkel and Spiegler); ptomains (Kijanitzin, Ajello and Paraseendolo), and pyridin bases (Fraenkel and Spiegler, Reiss). It remains also to be determined if the poisons are of such a nature that an immune serum can be obtained for them.

1. Virchow's Arch., 1906, vol. clxxxiii, p. 377. The Journal A. M. A., p. 1406.

2. Arch. klin. Chir., 1905, vol. lxxv, p. 845.

3. Virchow's Archiv., 1905, vol. clxxx, p. 307.

4. Jour. Infect. Dis., 1906, supplement No. 2, p. 21.

OCCURRENCE OF MENINGOCOCCI IN THE NASAL CAVITIES.

That so-called epidemic cerebrospinal meningitis is caused by a special micrococcus, the meningococcus (*Diplococcus intracellularis meningitidis*) is now generally accepted as an established fact. The manner in which this form of meningitis is disseminated and the portal of entry of the meningococci are, however, as yet not thoroughly understood. Recent investigations, especially in this country, indicate that probably the nasal cavities are important points not only of entrance, but also of escape of the meningococcus. Until less than a year ago the observations on the occurrence of meningococci in the nasal mucus in meningitis cases were rather unsatisfactory and indefinite. During the last epidemic of meningitis in New York, the opportunity to investigate this point was used to very good advantage by Goodwin and von Sholly,[1] who isolated meningococci from the nasal mucus in 50 per cent. of meningitis cases during the first two weeks of the disease. These

ıvestigators also studied the nasal mucus of 45 healthy ıdividuals living in close contact with meningitis pa-ents, with the valuable result that meningococci were ound in 10 per cent. Of 55 medical students not a ngle one gave organisms that corresponded fully to the ieningococcus. At the same time that the epidemic as running in New York, a few cases of meningitis lso appeared in Chicago, and Davis[2] demonstrated ypical meningococci in the nose and pharynx of one atient. Hence the occurrence of meningococci in the asal mucus in meningitis patients and in those coming close contact with them may be regarded as definitely ettled.

Now there is a more or less direct connection between ie lymph spaces of the nasal mucosa and the cerebral ıembranes through which infection may take place ıd possibly also elimination of the cocci. It is also ossible that the meningococci may enter the general rculation from the nasal lining as well as other parts the respiratory tract and become localized later in the erebrospinal membranes. Elser[3] recovered the meningo-occus in nearly 25 per cent. of the cases examined, and e believes that general blood invasion can be demon-rated in a large proportion under favorable conditions. is consequently possible also that the meningococcus ıay be deposited in the nasal mucosa from the circulat-ıg blood and thus reach the external world and secure ie necessary opportunity to perpetuate itself by enter-ıg a new host.

Be this as it may, the occurrence of meningococci in ie nose of patients with meningitis and their associates ıdicates the necessity of careful isolation of such cases, ot merely during the early weeks of the disease, as sug-ested by Goodwin and von Sholly, but, if possible, ntil such time as there is good reason to believe from egative results of examinations of the nasal mucus ıat the nose is free from meningococci. Furthermore, urses and others who remain in close contact with such ases should not be allowed to go about until it is known ıat they also do not carry meningococci in the nasal ıucus and thus are liable to become the unwitting dis-eminators of a terrible disease. Whenever opportunity fers, the study of the occurrence of meningococci in ie nasal cavities should be continued and extended to ie throat as well.

THE INFLUENCE OF LIGHT IN THE PRODUCTION OF CANCER OF THE SKIN.

It seems to be a well-known fact that the skin in cer-ain individuals is abnormally sensitive to the chemical r actinic rays of light. As pointed out recently by Hyde,[1] this hypersensitiveness may be evidenced in the roduction of either hyperemia, pigmentation, telan-iectasis, atrophy, hyperkeratosis or cancerosis of the skin. At times, though rarely, these different forms of reaction to the same influences may occur in one and the same person and then occasionally in a regular order of succession. This is the case in the rare disease known as xeroderma pigmentosum, a disease of childhood: here hyperemia is followed by pigmentation of the exposed parts of the body and eventually telangiectasis, spots of atrophy and of warty outgrowths (hyperkeratosis) develop and finally typical, usually multiple carcinoma.

In adults analogous processes are relatively more frequent and develop usually after the middle periods of life. Hyde brings forward strong statistical evidence showing that in the colored races pigmentation of the skin appears to provide a relative immunity to cutaneous cancerosis. He furthermore makes the very interesting deduction that colored races seem to suffer less than the whites from cancer of other organs than the skin and suggests that this relative immunity may be the result of the "protection from the actinic rays of light furnished by the pigment of the integument."

The observations and deductions here epitomised emphasize the influence of light on the biologic chemistry of cells, especially the cells in the human skin. They may be cited to illustrate also how abnormal cellular processes, essentially chemical in nature, may lead to the development of carcinoma. They serve, therefore, to direct our attention again to the chemical nature of the problem of the cause of cancer in the recent discussion of which the tendency to disregard the necessity of a parasitic etiologic hypothesis is becoming more and more apparent. This tendency is receiving strong support also from the results of the experimental transplantations of carcinoma to which it is planned to make more extended reference in the future.

PROVISION FOR EPILEPTICS.

Any one who has witnessed the utter disregard for the welfare of epileptics whose disease forces them to become public charges in county alms and poor houses and in institutions for the insane, in which they are an incident and not a factor in the life of the place, must have been forcibly struck with the necessity for a wholly different type of public care for this unhappy class. Students of epilepsy in the United States and abroad place the proportion of epileptics to the population in general at one to five hundred. If this is true, there are not less than 160,000 epileptics in the United States—less than 3,000 of whom are under proper state care at this time, not including those in institutions for the insane. While every state has one or more hospitals or asylums for the enlightened care and treatment of their insane, only five states have made provision for their dependent epileptics—New York, Ohio, Massachusetts, New Jersey and Texas, while we understand that Indiana is about to make such provision. A meeting was held recently in Chicago with the object of stimulating public interest in the establishment of a colony for epileptics in Illinois. It is to be hoped that the movement

2. Ibid., 1905, vol. II, p. 602.
3. Jour. Med Research, 1905, vol. xiv, p. 89.
1. American Journal of Medical Sciences, January, 1906; abstracted in THE JOURNAL, Feb. 17, 1906, p. 541.

may broaden out until the efforts result in the establishment of such an institution not only in Illinois, but in every large state in the Union. It has been satisfactorily demonstrated that the best way to care for epileptics is on a large tract of land and in comparatively small and wholly detached cottages. Adequate classification plays a leading rôle in the institutional treatment of these people, which makes it essential that any successful institution for them must be on the colony, village or community plan.

THE VITALITY OF THE TYPHOID BACILLUS IN FLOWING WATERS.

The contention made in the Chicago drainage canal suit that typhoid germs are short lived in natural flowing waters seems to be supported by some recent experiments made at the hygienic laboratory of the University of Wisconsin. According to the accounts received, the attempt was made to test the question under as nearly the natural conditions as possible, and the results seem to show that in ordinary flowing water the germs live only from eight to ten days, while in sewage polluted water they live scarcely half that time, being apparently killed off by other organisms. In fact, it is only the more resistant minority of the germs that reach the ten days' limit, and the experiments are said to have been remarkably uniform in this respect. While there may be exceptional cases of longevity of the typhoid bacillus, particularly in culture experiments, the evidence is accumulating that it is a short-lived organism in water under natural conditions.

HOTEL ACCOMMODATIONS—IMPORTANT.

The members of the subcommittee on hotels for the Boston session are anxious that every one shall be provided with good accommodations, either in a hotel or in a first-class boarding house. To arrange for such accommodations, however, the committee must attend to the matter before the arrival of those to be accommodated. In behalf of the committee and at its request, we urge those who expect to attend the Boston session to write to the secretary of the hotel committee, Dr. D. D. Scannell, 366 Commonwealth avenue, Boston, stating what is required. Prompt action in this matter on the part of each individual will receive prompt action on the part of the committee. Although none need fear that accommodations will not be found, even after one arrives, it is not worth while to take chances by such delay.

Medical News

CALIFORNIA.

Personal.—Dr. Perry F. Ballington, Oroville, has been elected president of the Board of Health of Butte County.——Dr. J. Dé Barth Shorb and wife, Los Angeles, left for Europe May 2.

Distribution of Medicine Samples.—The city trustees of Chico have passed an ordinance prohibiting the distribution of samples of medicine, either by hand or by throwing into yards, where children might find and eat them.

Vital Statistics for March.—During March, 1,950 births, 2,523 deaths and 1,471 marriages were reported. The mortality of the month is equivalent to an annual death rate of 16.1 per 1,000. Tuberculosis, the principal cause of death, caused 474 deaths; diseases of the circulatory system, 330, and diseases of the respiratory system, 307, of which 231 were due to pneumonia. Of the epidemic diseases, meningitis caused 37 deaths; measles and influenza, 32; typhoid fever, 19; diphtheria, 17; and smallpox, 7.

DISTRICT OF COLUMBIA.

Personal.—Dr. May D. Baker, Washington, is paying a visit to Los Angeles, Cal.——Dr. G. Brown Miller, Washington, has been elected secretary of the Central Dispensary in the Emergency Hospital.

Examiners' Terms Expire.—The health officer of the district has called the attention of the examiners to the fact that the term of office of Dr. Joseph F. Wall, a member of the Board of Medical Examiners, and a police surgeon, will expire on June 15 and that steps would be taken to appoint his successor. The term of a member of a Board of Homeopathic Examiners and Board of Eclectic Examiners expires on June 30.

Opposes Osteopathy Bill.—The Medical Society of the District of Columbia has made an emphatic protest against the enactment of Senate Bill 251 introduced by Senator Foraker of Ohio, which seeks to regulate the practice of osteopathy, to license osteopathic physicians, etc., in the District of Columbia. The arguments that the society advances are as follows: First, the bill, if enacted, will lower all existing medical school standards and thus defeat the very object for which medical practice laws were provided, namely, to guard the people against the effects of imposition and ignorance; second, the bill seeks to legalize and regulate the practice of osteopathy without defining what constitutes the practice of osteopathy, and until this is done Congress can not undertake to legislate intelligently; third, why should a special board be created, composed of five physicians in good standing, adherents to the osteopathy system of practice? fourth, it is conceded that Congress has a right to recognize other schools or sects of medicine than the so-called regular, homeopathic or eclectic systems of practice; and, fifth, refusal on the part of the advocates of the proposed legislation to accept the suggested amendment, indicates preference for low standards and corresponding danger to the public.

ILLINOIS.

Bid for Consumptive Hospital.—The lowest bid for the construction of the consumptive hospital at the Cook County Institutions, Dunning, was $21,430.

Smallpox.—Three cases of smallpox have been reported from Zion City.——A new outbreak of smallpox has been reported at Rushville.——Smallpox has broken out in a children's home near Sterling. The institution has been placed under strict quarantine.

Physicians' Defense Company Not an Insurance Company.—The Appellate Court of Illinois in an opinion handed down May 8, holds that the Physicians' Defense Company of Fort Wayne, Ind., is not an insurance company under the laws of Illinois, as the company does not undertake to indemnify the holder of its agreement against judgment, but to pay such judgment or any part of it, not even the costs of suit, although in making defense it may have to be outgrown the sum it receives. It does not insure the holder against suits for malpractice. It merely makes a defense against them when they are brought and provides legal services for its patrons.

Chicago.

Bequest to Hospital.—By the terms of the will of the late Charles W. Brega, $5,000 is bequeathed to St. Luke's Hospital.

Smallpox.—A case of smallpox was discovered by the health department, May 11, in Lake View. The source of the infection has not yet been located.

Midwife Released.—Mrs. Maggie Motzna, a midwife charged with the murder of Mrs. Ida Brocknow by an illegal operation, was declared not guilty by a jury in Judge Honore's court, May 10.

Fined for Liquor Selling.—George Campbell, a Pullman druggist, charged with selling liquor without a license, was fined $100 and costs on one charge, and costs on the three other charges brought against him.

Personal.—Dr. and Mrs. Daniel R. Brower have returned from Lisbon.——Dr. Hugh T. Patrick has left Lisbon for Paris, and will spend the summer abroad.——Dr. Henry Gradle has returned from the International Medical Congress, Lisbon.——Dr. Camillo Volino has been seriously ill from septicemia, due to a scratch received during an operation.

Physicians on Ambulances.—It is announced that the ambulances of the police department will soon be turned over to the city health department in accordance with the plans of the health commissioner and the chief of police. The eight ambulances which will be transferred will each be under charge of a physician.

Deaths of the Week.—During the week ended May 12 there were 583 deaths, 10 less than for the previous week and 133 more than for the corresponding week of 1905. This is equivalent to an annual death rate per 1,000 of 14.84. Pneumonia still leads the death causes with 109; consumption caused 55 deaths, or 20 less than the previous week; nephritis, 48; violence, including suicide, 39; heart diseases, 37; nervous diseases, 27; acute intestinal diseases, 26; cancer, 24; scarlet fever caused 11 deaths; typhoid fever, 9 deaths; diphtheria, 8; measles, 7; whoopingcough, 5, and influenza, 4.

Cheaper Antitoxin.—Last week we published an item based on matter appearing in the *Health Bulletin* of Chicago, to the effect that a private institution was "supplying the city with antitoxin at $1.50 per 3,000 units as against $5.25 for 3,000 units, the sum charged by the alleged antitoxin trust." Such a statement as this should not have appeared, as it does not represent facts. The institution referred to is supplying antitoxin at $1.50 to the Department of Health, which, in turn, retails it at $2.25 per 3,000 units. Several commercial firms have offered the city the same number of units for practically the same amount. We make this retraction in justice to all concerned.

MARYLAND.

Baltimore.

Memorial Room.—A memorial room has been founded at the Baltimore Eye, Ear and Throat Charity Hospital of the late Dr. Russell Murdoch, who was a founder and a member of the hospital staff.

University to Move.—The Baltimore University proposes to remove from East Baltimore to the northern section, where it has purchased a new site. A building of three stories, embracing hospital, college and dispensary to cost about $45,000, will be erected.

Typhoid in Suburb.—There have been 56 cases of typhoid fever reported at Hampden, a northern suburb of the city. It is supposed to have arisen from contaminated milk and is said to be now on the decline. Only 21 cases were reported for the entire city during the week.

Milk Exhibition.—The Maryland Milk Exhibition, the forerunner, it is believed, of many similar ones to be held throughout the country, opened at McCoy Hall, Johns Hopkins University, May 7, and continued through the week. On the opening evening Dr. Charles Harrington, Boston, secretary of the State Board of Health of Massachusetts, lectured on "The Necessity of Reform in the Production and Methods of the Distribution of Milk." A model kitchen showed the many uses to which milk may be put in cooking and prepared appetizing dishes for visitors. Numerous addresses were delivered.

Personal.—Dr. William H. Howell, dean of the Johns Hopkins Medical School, will spend the summer on Casco Bay, Maine.——Dr. Robert B. Slocum, one of the house officers at the Johns Hopkins Hospital, has resigned to take charge of the Walker Hospital, Wilmington, N. C., and has been succeeded by Dr. P. K. Gilman.——Dr. L. McLane Tiffany is spending May at his country seat in Accomac County, Va.——Dr. Harry T. Marshall, instructor in pediatrics, Johns Hopkins University, has accepted a position as pathologist in the United States Bureau of Science at Manila, and will sail from New York May 19. His place on the Board of Supervisors of City Charities has been filled by the appointment of Dr. J. Whitridge Williams.——Dr. Joseph A. Chatard sails for England May 31, and will spend some time at Oxford.

MASSACHUSETTS.

Hospital Opened.—The formal opening of the two new buildings of the Newton Hospital, Ellerson Hall and Harriet Gould Payne Domestic Building, took place May 1.

Dinner to Medical Examiners.—A complimentary dinner to the medical examiners of the Massachusetts Catholic Order of Foresters was given at the Brunswick Hotel, April 24. Dr. Francis J. McQuerrny presided, and Dr. Frederick C. Shattuck spoke on "Present Day Aspects of American Living."

Birth Insurance a Failure.—At the request of Attorney-General Malone a receiver has been appointed for the American Birth Insurance Company. This was a novel assessment insurance scheme, backed by many prominent Boston women, which has failed because the birth rate exceeded that anticipated. There is said to be some $50,000 or $60,000 insurance outstanding.

Bowditch Resigns.—Dr. Henry Pickering Bowditch, for 35 years a teacher in Harvard University Medical School, has resigned his position as professor of physiology and will retire at the end of this year. He is a recognized authority both in this country and in Europe. He has received honorary degrees in Leipzig, Cambridge, Edinburgh and Toronto. He is a member of the leading physiological societies of the world.

Society Election.—The Norfolk District Medical Society elected, May 8, in addition to its quota of 29 councilors of the Massachusetts Medical Society, the following officers for 1906-1907: President, Dr. Samuel Crowell, Dorchester; vice-president, Dr. Arthur P. Perry, Jamaica Plain; secretary and librarian, Dr. James C. D. Pigeon, Roxbury; treasurer, Dr. Edward G. Morse, Roxbury, and commissioner of trials, Dr. William Noyes, Dorchester.

Personal.—At the annual meeting of the Worcester North District Medical Society, Dr. Edward A. Sawyer, Gardner, was re-elected councilor, and Dr. Atherton P. Mason, Fitchburg, elected president.——Dr. John Dixwell has been re-elected president of the New England Home for Deaf Mutes.——Dr. George P. Howe, Lawrence, has been put in charge of the medical department of the Anglo-American Polar expedition which sails from Victoria, B. C., some time this month.——Dr. John A. Houston, Northampton, was struck by a street car in Washington, April 28, and suffered a concussion of the brain and a fracture at the base of the skull.

NEW JERSEY.

Society Officers.—At the annual meeting of the Salem County Medical Society, May 10, the following officers were elected: President, Dr. Frank B. Husted; vice-president, Dr. Nathaniel S. Hires; secretary and treasurer, Dr. Henry Chavanne, of Salem.

Entertains Medical Club.—Dr. Emory Marvel, Atlantic City, entertained the board of directors of the Medical Club of Philadelphia at a dinner, May 5. After the dinner a reception was held at which many of the leading physicians of Atlantic City were present. Among those present were Drs. Wharton Sinkler, Edward E. Montgomery, L. Webster Fox, T. Chalmers Fulton, Edward L. Duer, James Van Buskirk, J. Gurney Taylor, Gwilym G. Davis, Wilmer Krusen and Louis H. Adler, of Philadelphia, and Dr. Harry Whitcomb of Norristown.

Personal.—Dr. Francis De L. Gray, president of the Jersey City board of health, has resigned.——Dr. Walter A. Taylor, Trenton, has been elected a member of the medical staff of Mercer Hospital. At a meeting of the staff held recently Dr. William Elmer was elected medical director and president; Dr. William A. Clark, vice-president; Dr. Charles F. Adams, secretary, and Dr. George H. Parker, registrar.——Dr. John H. Finnerty has been appointed a member of the Jersey City board of health for a term of three years, vice Dr. Joseph M. Rector.

NEW YORK.

Matteawan Hospital.—There are now 683 inmates in this institution which cares for insane criminals.

Smallpox at Wallkill.—There are at present 6 patients with smallpox being cared for at the isolation hospital in Wallkill.

Personal.—Dr. Albert Vanderveer of Albany, who was elected a member of the State Board of Regents by the last legislature, took the oath of office on May 10.——Dr. Chester Waterman, Ogdensburg, has been appointed to the house staff of the Manhattan State Hospital.

For New Hospital.—Columbus O'Donnell Iselin has offered $40,000 for a hospital in New Rochelle, providing the citizens of that city will raise $60,000 so that a modern fireproof structure can be erected. The local hospital management has already subscribed $20,000 of the required amount.

Result of New York Referendum.—Section 7 of the agreement underlying the consolidation of the Medical Society of the State of New York with the New York State Medical Association, reads as follows:

"It is further covenanted and agreed by the parties hereto, that as soon as practicable after the entry of an order for the consolidation of the corporations, the following proposition shall be submitted by referendum to the vote of the members of the society, namely:

"'The principles of medical ethics of the American Medical Association, being suggestive and advisory, shall be the guide of members in their relations to each other and to the public.'"

Under date of May 11 Dr. Wisner R. Townsend writes:

"Referendum votes were sent to 6,352 members on April 27. The vote was canvassed May 10, at 8 p. m., with the following result: Votes cast in accordance with the provisions of the referendum, 3,525, of which 3,307 voted 'yes,' 197 'no,' 17 defective, 1 duplicate, 3 letters returned by the postoffice owing to imperfect address. Eighty votes were received since the expiration of the referendum. These envelopes were not opened."

New York City.

Gift for Columbia.—Edward S. Harkness has given $2,700 to the morphologic museum at the medical school.

Proposed West Side Hospital Disapproved.—The bill providing for a hospital similar to Bellevue on the west side of town, between Twenty-third and Thirty-fourth streets, has been vetoed for the third time by the mayor. The measure is mandatory and for that reason was rejected.

Honor Professor Duehrssen.—A special meeting of the German Medical Society was held at the New York Academy of Medicine, May 15, in honor of Professor Dührssen, of Berlin, who comes to America as the guest of the American Medical Association, who delivered an address on the subject of "Modern Problems in Diseases of Women." Professor Dührssen operated at the Lebanon Hospital on May 10.

Personal.—Dr. Jokichi Takamine has been decorated by the Mikado with the Fifth order of the Rising Sun in consideration of his researches and discoveries in applied chemistry.——Dr. A. M. Fernandez de Ybarra delivered a lecture on "The First Written Document About the Flora, the Fauna, the Ethnology and the Anthropology of America" before the biologic section of the New York Academy of Sciences, March 5.

New Orthopedic Hospital.—The Jewish Hospital for Deformities and Joint Diseases which is to provide treatment for patients in the district lying north of Central Park, has been completed and will be ready for the treatment of patients before the end of June. The need of this institution is shown by a recent census of the public schools, when more than 6,000 children were found suffering from deformities. A large number of these are curable. The medical head of the hospital is Dr. Henry W. Frauenthal.

Dispute Over New Bellevue.—A controversy between the State Charities Board and the trustees of Bellevue and the Allied Hospitals concerning the plans for the new hospital will tie up the work for some time. The plans provide for a building which will have about 2,400 beds, while the board holds that hospitals of such a size are unwieldy and that two hospitals of lesser capacity would be preferable. Attorney-General Mayer has rendered an opinion sustaining the authority of the state commissioners, but the trustees of Bellevue still refuse to submit the plans to the state body. The city has not yet acquired the additional land which is wanted for enlarging the building.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended May 5, 1,348 cases of measles, with 39 deaths; 375 cases of tuberculosis, with 193 deaths; 339 cases of diphtheria, with 49 deaths; 231 cases of scarlet fever, with 21 deaths; 35 cases of whooping cough, with 9 deaths; 33 cases of cerebrospinal meningitis, with 32 deaths; 19 cases of typhoid fever, with 7 deaths; 103 cases of varicella, and 6 cases of smallpox—a total of 2,489 cases, with 350 deaths. The hospitals for contagious diseases are overcrowded. In the week ended May 8 there were 73 cases of contagious and infectious diseases taken from Ellis Island. This record is lower than that of several preceding weeks. The phenomenal number of immigrants accounts for the larger number of contagious diseases taken from Ellis Island.

Rockefeller Institute Opened.—This institution, which was founded in 1901 by John D. Rockefeller, having for its purpose "the advance by investigation of the science of medicine," was formally opened on May 11. Addresses were made by President Charles William Eliot of Harvard University, President Nicholas Murray Butler of Columbia University, and the president and secretary of the institute, Dr. William Henry Welch and Dr. Luther Emmett Holt. Dr. Holt outlined the history of the institute, which when completely equipped could accommodate 50 workers. The laboratories are for investigation in experimental pathology, bacteriology, physiology, physiologic and pathologic chemistry. At present there are 12 experimenters at work under the supervision of Dr. Simon Flexner, director of laboratories. All the air drawn into the various suites of laboratories and living quarters of animals used in experiments is filtered. There is only one other institute of the kind in the work that is as fully equipped as this and that is in Germany and is said to be no better. The institute not only carries on experiments in its laboratories, but awards money grants to those engaged in work elsewhere. Grants are awarded on application to the board of directors. Applicants for aid in medical research are required to tell why they need assistance, the nature of the problems on which they are working and their qualifications. The results of experimental work are published in the *Journal of Experimental Medicine*, which is issued bi-monthly by the institute.

OHIO.

Typhoid Fever on the Increase.—Typhoid fever has markedly increased in Cincinnati, 24 cases having been reported last week.

Personal.—Dr. John Uri Lloyd, Cincinnati, who was a delegate to the International Chemical Society, has been quarantined at Aden, Arabia, having been exposed to bubonic plague.——Dr. William C. Harris will be in charge of the emergency hospital at the Cincinnati Fall Festival.

Site for State Hospital Secured.—The ground for the new State Hospital for the Criminal Insane has at last been purchased. It consists of a farm of 618 acres situated north of Lima, Ohio. The purchase price was $62,500. No provision was made by the General Assembly to do more than to secure the land, and the trustees of the proposed institution have not as yet been named.

PENNSYLVANIA.

Philadelphia.

Notice.—The section on general medicine of the College of Physicians announces that on account of the proximity of the meetings of several national medical associations, the next meeting of the section will be held in October.

Charity Report.—The annual report of the Union Benevolent Association shows there were 5,000 applications for aid, of which 265 were refused and 257 referred to other societies. Officers of the society made 6,197 visits during the year to investigate the conditions of persons in need of aid, and 151 sick individuals were given attention.

Personal.—Dr. Alfred Gordon was appointed associate in nervous and mental diseases in Jefferson Medical College, May 8.——Dr. Ross Skillern and wife sailed for Europe, May 8.——Dr. William A. Hughes, of the University of Pennsylvania; Dr. Charles A. Service, of the Jefferson Medical College, and Dr. C. Lincoln Furbush, of the Medico-Chirurgical College, conducted the examinations of 120 applicants for internships in the Philadelphia Hospital, May 12.——Dr. O. L. Wingate was acquitted of the charge of assault by the Court of Quarter Sessions, May 9.

Federation of Jewish Charities Report.—At the fifth annual meeting of the Federation of Jewish Charities, May 10, the reports presented show that from 2,065 members the subscriptions amounted to $145,000. This is an increase of $24,000 over the previous year and an increase of $50,000 over the maximum annual subscription before the federation. The sum of $135,550 had been distributed among the following constituent charities for the year ended April 30: Jewish Hospital Association, $34,000; Jewish Foster Home and Orphan Asylum, $22,000; United Hebrew Charities, $33,000; Hebrew Education Society, $6,600; Jewish Maternity, $9,000; Jewish Immigration Society, $800; Young Women's Union, $12,500; Hebrew Sabbath School Society, $3,250; National Farm, $6,400; National Jewish Hospital for Consumptives, Denver, $3,000, and the Alliance Israelite Universelle, $500.

Health Report.—The total number of deaths reported for the week reached 492. This is a decrease of 10 from the number reported for last week, and an increase of 37 over the number for the corresponding week of last year. The principal causes of death were: Typhoid fever, 26; measles, 9; pertussis, 13; diphtheria, 9; consumption, 63; cancer, 21; apoplexy, 21; heart disease, 54; acute respiratory disease, 74; enteritis, 27; hepatic cirrhosis, 5; Bright's disease, 41; appendicitis, 7; suicide, 6, and accidents, 16. There were 415 cases of contagious disease reported, with 36 deaths, as compared with 364 cases and 26 deaths in the preceding week. Typhoid fever is still slightly on the increase, 303 cases being reported, with 26 deaths, as compared with 243 cases and 14 deaths reported in the previous seven days. There was one new case of smallpox reported.

TENNESSEE.

"Patent-Medicine" Motion Tabled.—At a recent meeting of the Memphis and Shelby County Society, a resolution which called for punishment by suspension from the society of any member

holding stock in any so-called "patent-medicine" concern and any member engaging in contract practice except as government official, surgeon of and examiner for a life-insurance company, was tabled after little debate.

Personal.—Dr. Frank A. Jones has been elected professor of physical diagnosis and clinical medicine in the Memphis Hospital Medical College, succeeding Dr. Dudley D. Saunders, retired. Dr. James B. McElroy succeeds Dr. Jones as chief of clinic at East End Dispensary and as demonstrator of physical diagnosis in the college.——Dr. W. S. Nash, Knoxville, has been very ill for several days.——Dr. G. B. Gillespie, Covington, was thrown from his buggy May 2 and sustained severe bruises of the face and breast and a fracture of the nose.

Commencements.—Chattanooga Medical College, the Medical Department of Grant University, held its seventeenth annual commencement exercises April 30. Dr. John R. Rathmell, dean, made the introductory remarks, Rev. Howard L. Jones delivered the address and Rev. John H. Race, D.D., conferred degrees on a class of 33.—The annual commencement exercises of Memphis Hospital Medical College were held April 27, when the Hon. William H. Carroll, president of the board of directors, conferred degrees on a class of 80. Hon. T. U. Sisson delivered the address to the graduates.——The Medical Department of Vanderbilt University, Nashville, held its annual commencement exercises May 1, when a class of 38 received diplomas. Dr. William H. Witt delivered the faculty address and Dr. Richard Douglas the doctorate address. Chancellor Kirkland conferred the degrees on the graduating class.—— The Medical Department of the University of Tennessee, Nashville, held its annual graduating exercises May 1. Dr. Paul F. Eve acted as master of ceremonies. Dr. Perry Bromberg delivered the charge to the graduates, and Prof. Brown Ayers conferred degrees on a graduating class of 25.

TEXAS.

Fined for Illegal Practice.—"Dr." Oscar Ferguson, Marshall, was convicted April 2, in the County Court of Harrison County, of illegal practice of medicine, and was fined $50 and costs.

New College Contemplated.—It is reported that Fort Worth is to have a new medical college to be known as the Fort Worth College of Physicians and Surgeons, and that Dr. Frank D. Boyd has been selected as dean of the institution.

College Election.—At the annual meeting of the faculty and stockholders of the Medical Department of Fort Worth University, May 5, the following officers were elected: President, Dr. Julian T. Field; vice-president, Dr. James Anderson, secretary, Dr. Ira C. Chase; dean, Dr. Frank Gray, and directors, Drs. Frank D. Thompson, James Anderson, Bacon Saunders, William R. Thompson and Frank Gray. During the year 194 students were enrolled and a class of 23 was graduated.

Commencements.—The third annual commencement of the College of Physicians and Surgeons, Dallas, was held April 5, when diplomas were presented to a graduating class of 21.—— The twelfth annual commencement of the Medical Department of Fort Worth University was held May 10. Dr. William R. Thompson delivered the faculty address; Dr. Gause W. Covington delivered the valedictory address and Rev. Dr. Fiedler, president of the university, awarded the diplomas to a class of 23.——The sixth annual commencement of Baylor University College of Medicine, Dallas, was held May 1. President Dr. S. P. Brooks awarded diplomas to a class of 8. Rev. George W. Truitt, in his address, announced that the erection of a new medical school for the university was assured.—— The commencement exercises of Southwestern University Medical College, Dallas, were held May 4, when a class of 4 received diplomas.

Personal.—Drs. Thomas J. Wagley, James H. Happell and William S. Ball have resigned as surgeons of the Gulf, Colorado and Santa Fe Railroad at Cleburne. Dr. Mills Dennis, Temple, has been appointed to succeed Dr. Wagley, and Dr. D. Strickland, Cleburne, has been appointed local surgeon of the road.——Dr. Francis M. Hicks, San Antonio, who was operated on recently at Johns Hopkins Hospital, has returned home.——Dr. George W. Larendon, Houston, has been appointed state health officer of Texas, vice Dr. William M. Brumby, resigned.——Dr. Jesse E. Baldwin, Dallas, has been appointed health officer of Dallas County, vice Dr. Thomas B. Fisher, resigned, to take up the duty of health officer of Dallas.——Dr. Nelson A. Olive has been elected president of the Waco Board of Health.——Dr. Robert W. Noble, Temple, fell from a porch April 26, fracturing his arm.——Dr. John M. Colley, Palestine, was thrown from his buggy April 25 and received a severe scalp wound and fractured a rib.

PRESENT CONDITIONS IN SAN FRANCISCO.

The Work of the Profession in Averting an Epidemic.

Dr. Joseph B. Greene writes:

The daily press has attempted to describe the calamity, but no one at a distance can fully appreciate the horror of the scene. Fortunately, the number of deaths was exaggerated, but it will be some time before the death list is complete on account of the fire following so soon in the track of the earthquake. At the present time the remains of some of the victims lie buried in the ruins, awaiting the removal of débris, before they can be properly buried. San Francisco had a considerable floating population, who suffered largely from the destruction of hotels and boarding houses in the down-town district. The loss of life is variously estimated from 500 to 1,400. Had the earthquake occurred during the busy hours of the day the loss of life would have been appalling.

It was fortunate that the Army was on the scene ready to step in and to preserve order. Not only did they do this, but they dispensed food and clothing to all in need. Tents and blankets were at once supplied, so there was comparatively little real suffering. The large Army General Hospital was thrown open for the reception of patients who were sick or injured. At present everything is moving along smoothly, and the needy are being cared for with a minimum amount of leakage and waste.

No class of men suffered more proportionately than the physicians of San Francisco. With an unselfishness common to the profession, they were found caring for the wounded when their offices were going up in smoke. Not only have they suffered the loss of their offices and homes, but their practices have been scattered to the four winds. It will be some time before affairs have been adjusted and the physicians are again in a position to recover their practices. Grateful appreciation has been felt and expressed at the kind offers of assistance to the medical profession from the large medical centers. The County Medical Society met on the evening of May 3, with Dr. W. I. Terry, president, in the chair. It was decided that relief was to be distributed to all licensed physicians, regardless of school. Of course, all quacks are to be excluded. A general committee was appointed, with Dr. Terry *ex officio* chairman.

From this general committee will be selected committees on (1) finance, (2) supplies, (3) distribution. Arrangements have been made for the committees' headquarters to be at the Cooper Medical College.

From a sanitary and epidemic standpoint, San Francisco is most fortunate. Typhoid fever is naturally the disease most to be dreaded, but fortunately the number of cases occurring in the city prior to the earthquake and fire was not great. In camp, however, the number will be greatly increased, in spite of orders to boil all drinking water. It is always easier to issue such orders than to see that such instructions are carried out. The profession is familiar with the great loss of life from typhoid fever in the Army during the Spanish-American War. This occurred, too, among soldiers who were supposed to be under strict military discipline. The science of sanitation has advanced somewhat since that time, for we now know what an important part the flies play in the transmission of typhoid fever. Every precaution will be taken with the feces and urine to prevent contamination through the means of flies. The time is now at hand for an increase in the number of typhoid cases. It is to be hoped that our fears are groundless, and that the dread of an epidemic will never be realized.

Plague has given the health authorities some concern, though it would seem that the danger can be averted. Chinatown, which nurtured cases of plague so long, has been burned, and it is likely the germs of this disease were consumed. It is probable that very few rats made their escape. The state health authorities have warned the people against infection from ground squirrels. Plague has occurred among these rodents for some time, and the last case was in a huntsman who had killed a squirrel and carried it in his pocket. It is not likely that Chinatown will be rebuilt in the heart of the city again, to be a menace to the public health as it was some

years ago when plague was present. The disease is so insidious, and our relations so direct with the Orient, where plague prevails almost constantly, that it would be a great mistake to allow the Chinese to resume their insanitary life in the heart of San Francisco.

The American White Cross First Aid Association sent from Chicago twenty-five physicians and seventy-five nurses, who arrived on the morning of April 26. This party, in command of Major. P. J. H. Farrell, reported at once to Colonel Torney of the Army on duty at the general hospital. The party was assigned to tents and placed under strict military discipline. The doctors and nurses were assigned to various duties as directed by the Army surgeons. Most of the physicians were assigned to sanitary work, though some did medical and surgical work. The nurses made themselves useful at various stations in and near the city. Six nurses were at once assigned to cases in the smallpox hospital.

An Appeal From San Francisco Physicians.

A committee appointed by a mass meeting of physicians held in San Francisco, May 3, issues the following appeal:

"The members of the medical profession in San Francisco, with the true spirit of their noble calling, have voluntarily rendered great service to the sick and suffering of this stricken community. A large portion of these physicians, more than 1,000, have lost either their homes, offices, books and instruments or all of these. This committee has been appointed to receive contributions of medical supplies, books, instruments, clothes and moneys in order to help the needy start life anew and equip them to earn their livelihood in the exercise of their profession.

"We appeal to the generous-hearted throughout the land to come to our assistance and help the members of a profession who at all times, when called on, have given their aid freely and willingly to suffering humanity.

Direct all communications and donations to the relief committee of the physicians of San Francisco, Lane Hospital, San Francisco. W. I. Terry, Pres. S. F. Co. Med. Soc., Chairman *ex officio*; T. W. Huntington, Emmet Rixford, H. C. Moffitt, H. J. Kreutzmann, Philip King Brown, J. W. Ward, L. M. F. Wanzer, Julius Rosenstirn, F. W. Lux, Secretary.

The above committee has issued the following to the physicians of San Francisco:

"Those of you who are in need of immediate assistance, please report at once to the medical relief committee at Lane Hospital, corner Webster and Clay Streets. The committee rooms will be open from 9 a. m. to 4 p. m. daily, Sundays excepted. In case your name is not in the last state register, be good enough to state from what college you are a graduate and when your license was issued. Address communications to the secretary, Dr. F. W. Lux."

The following subcommittees have been appointed:

Press Committee: J. Rosenstirn, Philip King Brown.

Finance Committee: T. W. Huntington, H. C. Moffitt, H. J. Kreutzmann.

Committee on Instruments, Books and Supplies: Philip King Brown, J. W. Ward, F. W. Lux.

Distribution Committee: Emmet Rixford, L. M. F. Wanzer, J. Rosenstirn.

Sanitary Conditions.

Passed Assistant Surgeon Rupert Blue, U. S. P. H. and M. H. Service, reported on the sanitary condition in Oakland and San Francisco on April 30. Immediately after the earthquake sanitary headquarters were established in Golden Gate Park, where conferences between the Medical Department of the Army, the Public Health and Marine Hospital Service and the state and city health authorities were held. A health commission had already been organized, consisting of Dr. James W. Ward, president; Dr. Simon Harvey Ragan and Dr. Hassler, of the San Francisco Board of Health; Surgeon Sawtelle and Passed Assistant Surgeon Dr. James H. Oakley, U. S. P. H. and M.-H. Service, and Drs. M. Ragensberger and M. K. Foster, representing the State Board of Health. Dr. Blue, having been elected a member of this commission, made an inspection of the refugee camps in Oakland, which at that time consisted mostly of wooden shacks with shallow latrines and open kitchens. These camps, however, are now being concentrated in healthy suburban sites, large tents are being used and latrines and sinks will have sewer connections. Since April 18 twenty cases of smallpox have been detected and isolated in Oakland. The number of refugees in Oakland is estimated at 30,000, and probably 4,000 of the Chinese of San Francisco have here found refuge. On April 29 Dr. Blue was placed in charge of the second sanitary district of San Francisco, which is bounded by the bay on the southeast and east, and by Market, Valencia and Mission streets on the north and west. It is the part of the city which suffered most from the earthquake and fire. In this district there were more than 30,000 people living in shacks, tents and other temporary abodes. Cooking was done in the streets, as all chimneys and water and sewer connections were destroyed. The water supply is inadequate and is not likely to be greatly improved in the immediate future. The proper disposal of sewage, garbage and refuse is also a serious problem. The shallow latrines are not protected from flies or animals and have no sewer or water connections. The public kitchens are open to flies and are in close proximity to heaps of refuse and uncovered latrines. To combat these conditions Dr. Blue recommends removal to healthy suburban sites with ample water and sewer connections and the use of tents instead of wooden shacks for housing; the immediate construction of large sanitary latrines, to be connected with the sewers, and, pending the change, the abundant use of chlorid of lime and crude carbolic acid in the holes formerly used, and the removal or burning of garbage.

The State Journal.

The May issue of the *California State Journal of Medicine* consists of only four pages and begins with a sad greeting, but states that the spirit of the physicians of California is in no wise daunted and that as there will be a newer and better and more beautiful San Francisco, so there will arise, Phœnix-like, a better and more useful *California State Journal of Medicine*. The *Journal* devotes nearly one-fourth of its space to a mention of the semi-centennial meeting of the Medical Society of California, which was untimely adjourned. The editor, Dr. Philip Mills Jones, 1230 Telegraph Avenue, Oakland, deserves much credit for his enterprise. He announces that both its foreign and domestic exchange list is lost and asks us to request by this notice that all exchanges should notify Dr. Jones as soon as possible.

System and Organization.

In an editorial, May 2, the San Francisco *Examiner* gives due credit to the Medical Department of the Army for its work in San Francisco. It says: "The value of system and organization was never better illustrated than in the work of the army doctors and surgeons in handling the emergency. . . . These military doctors did not hesitate to assume responsibility, and if San Francisco escapes an epidemic the major part of the credit will be due to the organization and system of the army's medical department and to the quick action of the medical men in charge of the Presidio. . . . When the injured were hastily transferred from the Mechanics Pavilion the Presidio General Hospital was forced to receive 100 patients in one hour, but there was not the slightest confusion. . . . Captain Kennedy, surgeon in charge, immediately closed the doors against all visitors. This was hard on anxious relatives and friends, but preserved quiet and discipline within the hospital at a time when quiet and discipline were absolutely essential. The 100 patients were operated on and cared for before the burning hospitals of the city began to throw their patients into the Presidio, and, when everything was confusion elsewhere, the 500 or more patients in the Presidio Hospital were treated as if earthquake and fire were problems of a far land. Military precision also proceeded in the important work of caring for the medical and surgical needs of the homeless and the sanitation of the refugee camps. Captain Truby was placed in charge of the refugees in Golden Gate Park, Captain Murtagh of those in Fort Mason and Captain Rutherford of the camp at the Presidio, and in each of these camps a staff of doctors and inspectors was organized, so that every patient had a physician at call and every cot was watched with care. The reports were sent through official channels to Colonel Torney, and as a result of this system the reports of death and disease in San Francisco show slight variations from the normal conditions. . . . Those who are going to have on hand the herculean task of upbuilding a ruined city may well take a lesson in what can be accomplished under system and organization. They have been given their lesson by the men of the army medical department, who took hold of an emergency as if they had been handling earthquakes and fire all their lives."

Physicians Come to the Rescue.

The physicians of Portland, Ore., have contributed $3,000 in cash and Lewis and Clarke Fair stock; the Essex North District (Mass.) Medical Society, $200; the Norfolk District Medical Society, $307, replacing the annual banquet; the Brooklyn Medical Club, $100; the Douglas County (Wis.) Medical So-

ciety, $40; the physicians' committee of Salt Lake City, $500 and abundant supplies; Montgomery County (Ohio) Medical Society, $100; Fresno County (Cal.) Medical Society, $200; Huntington County (Ind.) Medical Society, $10; Washington County (Pa.) Medical Society, $25; Mill Creek Valley (Ohio) Medical Society, $15; New Jersey State Homeopathic Medical Society, $25; Lehigh County (Pa.) Medical Society, $25, and Lewis County (N. Y.) Medical Society, $10.

No Danger of Plague.

The secretary of the State Board of Health announces that he does not think there is any danger of bubonic plague unless it be among people who, driven from the city, have gone into camp in the country. There will be no danger there, he says, if the people avoid contact with rats, squirrels, mice and similar animals.

Afflicted and Can Not Help.

The appeal for aid to physicians of San Francisco has received a reply from Russellsville, Ark. In this city a fire occurred January 15 which swept away the greater part of the city, and by reason of which the physicians of the community suffered to some extent and the loss of many was considerable. For this reason the physicians state that their hands are full in repairing their own losses without calling on aid from the outside.

No More Burials in County.

The Public Health Commission decided on May 5 that after June 1 no more interments should be permitted within the boundaries of the city and county of San Francisco and that the bodies temporarily interred are to be removed later to the cemeteries at San Mateo.

Sanitary Instructions.

The Health Commission has directed that the following instructions be posted in the following various districts:

FOOD AND WATER CONSUMPTION.

1. All water should be boiled, whether for drinking, bathing or cleansing purposes.
Use no unboiled water in the preparation of food for cooking or baking.
Use unboiled water only for flushing purposes.
This order applies to all water, whether Spring Valley, lake or well water.
2. All milk should be boiled, whether used by infants or adults.
3. Food in cans should not be allowed to stand uncovered, lest it become tainted or infected.
4. Do not eat uncooked vegetables.
5. All butcher shops and bakeries should be screened.

SANITATION.

1. Remove all garbage, animal and vegetable refuse from your premises and put into garbage barrels at the curb line of street, and cover the same with chlorid of lime daily.
2. Seal all toilets and other plumbing fixtures in houses where side sewers are broken or disconnected.
3. Screen all windows, doors and other openings, to prevent the entrance of flies, as they are carriers of filth.
4. District sanitary inspectors will report location of latrines to the captain of the district daily, so that the same may be inspected and properly disinfected.

COMMUNICABLE DISEASES.

1. Any person whatsoever having knowledge of the presence of these diseases should report the same to a physician in his neighborhood, as every physician in the city is now a sanitary inspector. And such physician on receipt of this notice should inspect the case, and if verified by him, report the same to the headquarters at the Park Emergency Hospital, Stanyan and Waller streets, or at the temporary headquarters of the board of health, Grove and Laguna streets.
2. A strict observance of these instructions will positively prevent the spread of any of these diseases.
3. For the safety of all, most careful reports of all contagious or infectious diseases should be given to the district inspectors.

Hospital Work.

St. Mary's Hospital, Hays and Stanyan Streets, has been reopened by eight Sisters of Mercy and thirty assistants, who went from Oakland to re-establish the institution. Work has commenced on the Central Eastern Hospital at Golden Gate Avenue and Gough Street. The new hospital will be in the shape of a quadrangle and space will be provided for wards to contain thirty beds each. Quarters for nurses, physicians and stewards will also be provided.

THE CALIFORNIA FUND.

The following committee has been appointed to represent the California State Medical Society and the San Francisco County Medical Society in the distribution of funds, etc. As we understand it, the committee consists of those forming the San Francisco Society referred to above, in addition to which others have been added to represent the state society: Thomas W. Huntington, Emmet Rixford (treasurer), Frederick W. Lux, Henry J. Krentzmann, Lucy M. F. Wanzer, Philip King Brown, Julius Rosenstirn, Herbert C. Moffitt, James W. Ward, Charles E. Jones, Malcolm O. Austin, George H. Evans, George G. Gere, John Galiwey and Frank K. Ainsworth.

All contributions, whether from individual contributors or local or county societies, will be acknowledged in this column. Nearly 500 physicians in San Francisco are in urgent need. Make checks payable to the American Medical Association, marking the check "California Fund." Send to the American Medical Association, 103 Dearborn Avenue, Chicago. Mark envelope in lower left-hand corner, "California Fund."

The following contributions, not acknowledged last week, have been received up to 9 o'clock, Wednesday morning, May 16:

INDIVIDUAL CONTRIBUTIONS.

Bailey, O. L., Ocean Springs, Miss.	$1.50
Bliss, Webster, Deerfield, Mich.	1.00
Cattermole, George H., Boulder, Colo.	5.00
Christie, J. R., Quincy, Ill.	1.00
Clonse, A. W., Geneva, Pa	1.00
Cowen, H. K., Midway, Kans.	1.00
Eccles, R. M., Blissfield, Mich.	10.00
Evers, J. W., Rollin, Mich.	1.00
Gamble, Jr., C. B., Baltimore	10.00
Garrison, Harriet E., Dixon, Ill.	5.00
Gibbs, M.D., Van Houten, N. M.	2.50
Gilbert, O. M., Boulder, Colo.	5.00
Griffin, John M., Warrensburg, N. Y.	3.00
Hanahan, R. B., Winnsboro, S. C.	2.00
Haverfield, A. R., Minneapolis	2.00
Hyndman, William, Cement City, Mich.	5.00
Jackson, F. H., Houlton, Me.	2.00
Jolley, W. A., Boulder, Colo.	1.00
Jones, F. P., Leesville, La.	5.00
Kirkpatrick, Adrian, Mich.	5.00
Lindsay, Samuel, Winnsboro, S. Car.	2.00
Lyon, D. R., Pawtucket, R. I.	5.00
Martin, Ancil, Phoenix, Ariz.	5.00
Morden, Esle T., Adrian, Mich.	3.00
Morden, M. R., Adrian, Mich.	1.00
Morden, W. S., Adrian, Mich.	3.00
Pixley, C. S., Winnsboro, S. C.	2.00
Powell, W. S., Defiance, Ohio	5.00
Queal, E. B., Boulder, Colo.	2.00
Ross, G. W., Ousted, Mich.	2.00
Russell, J. A., Boulder, Colo.	1.00
Sackett, C. C., Laurel, Neb.	5.00
Schooley, S., Belmont, Ohio	5.00
Sears, H. B., Beaver Dam, Wis.	5.00
Spencer, F. R., Boulder, Colo.	2.00
Strickler, O. C., New Ulm, Minn.	5.00
Summer, B. R., Clinton, Mich.	1.00
Tallman, C. A., Weston, Mich.	2.00
Trovillion, E. B., Boulder, Colo.	2.00
Whitmore, E. A., Leadville, Colo.	5.00

SOCIETY CONTRIBUTIONS.

Bristol South District of Massachusetts Med. Soc.	$100.00
Calloway County (Mo.) Medical Society	20.00
El Paso (Texas) Medical Society	25.00
Forsythe County (N. C.) Medical Society	25.00
Fremont County (Colo.) Medical Society	25.00
Guadalupe County (Texas) Medical Society	5.00
Jackson County (Miss.) Medical Society	20.00
Jackson County (Mo.) Medical Society	200.00
King County (Washington) Medical Society	300.00
Lancet Club, Vincennes, Ind.	12.00
Lewis County (N. Y.) Medical Society	10.00
Physicians' Club, Seattle, Wash.	20.00
Practitioners' Club, Jersey City, N. J.	50.00
Schenectady County (N. Y.) Medical Society	50.00
Smith County (Texas) Medical Society	10.50
St. Louis County (Mo.) Medical Society	20.15
Winnepesaukee Academy of Medicine, Laconia, N. H.	20.15

Nacodoches County (Texas) Medical Association, $29.50:

Adams, E. S.	$2.50	Reagan, J. H.	$5.00
Batham, J. H.	2.50	Stuckey, J. H.	1.00
Lockey, R. P.	2.50	Smith, W. I. M.	5.00
Marrs, M. C.	1.00	Tucker, F. H.	2.50
Nelson, A. A.	5.00	Turner, George H.	2.50

Valley County (Neb.) Medical Association, $10.00:

Bartoo, A. E.	$1.00	Main, A. S.	$1.00
Brink, Chester A.	1.00	Moore, M. S.	1.00
Holdeman, F. D.	1.00	Newbecky, M. M.	1.00
Kohont, Joseph A.	1.00	Pickett, J. J.	1.00
Lee, Daniel	1.00	Thurston, E. D.	1.00

Total	$1,081.15
Previously acknowledged	$5,735.65
Duplicates, etc., to subtract*	125.00
Net total previously acknowledged	5,610.25
Grand total	$6,691.20

* One subscription of $100 was a misunderstanding, the subscriber intending only $50. One subscription of $50 and one of $25 were acknowledged twice, once as promises and once when the money arrived. Total, $125.00.

GENERAL.

Pension Surgeons to Meet.—The annual convention of the National Association of United States Pension Examining Surgeons will be held at the New American Hotel, Boston, Monday and Tuesday, June 4 and 5, beginning at 10 o'clock Monday morning.

American Gastroenterological Association.—The ninth annual meeting of this body will be held at Boston, June 4 and 5, 1906.

American Society for the Study of Alcohol and Narcotics.—The thirty-sixth annual meeting of this society will be held in the parlors of the Vendome Hotel, Boston, June 5-7, 1906. A single session will be held from 9 to 10:30 a. m. each day. Scientific papers will be read by eminent persons. The medical public is cordially invited. Programs can be had by applications to the secretary, Dr. T. D. Crothers, Hartford, Conn.

The American Proctologic Society.—This organization holds its eighth annual meeting at the Hotel Vendome, Boston, June 5 and 6, 1906. The president's address will be delivered by L. H. Adler. Papers will be presented on "Cancer of the Rectum," by W. M. Beach, G. B. Evans and J. C. Brick; on "X-Ray Diagnosis of Sigmoid Stricture," by H. A. Kelly; on "Constipation," by J. R. Pennington and L. J. Hirschman, and on "Pruritus," by T. C. Hill and T. C. Martin.

Havana Institutes Quarantine Against Southern States.—It is reported that the superior sanitary board on May 7 formally recommended a quarantine against ports of Louisiana, Mississippi, Alabama and Texas. The reason given is that the government of the United States will not intervene in sanitary matters in those states, that last year Havana was not informed of the existence of yellow fever in New Orleans until six weeks after the first case occurred, and that during the present season there will be great danger of infection. No quarantine is suggested against Florida because the health officer of that state is also an officer of the United States Public Health and Marine-Hospital Service.

Less Cholera in the Philippines.—Chief Quarantine Officer Heiser reports the great improvement in the cholera situation has continued, except for an outbreak in the town of Siniloan, Laguna Province, where 140 cases occurred within a period of ten days. Owing to the remoteness of the town, this information did not reach Manila until the outbreak was well established. Prompt measures were at once taken to stamp out the disease, and within three days after the sanitary measures were begun no more cases occurred. The experience in this town, Dr. Heiser states, affords another example of what may be accomplished in the eradication of cholera whenever it is possible to apply modern sanitary principles. In view of the continued improvement it was deemed advisable still further to modify the outgoing interisland quarantine regulations.

CANADA.

College Examinations.—The examinations of the last class which registered at Trinity Medical College before amalgamation is being proceeded with. They number about 40, and, according to the terms of amalgamation, they were to be examined by the examiners appointed by Trinity University.

Practice of Medicine in Ontario.—The attorney-general of Ontario has cited a stated case before the court of appeal with a view to settling and determining the precise meaning of the Ontario medical act, and to fix definitely whether persons who practice medicine without the use of drugs can do so without being properly registered.

Typhoid.—Dr. F. C. Douglas, Montreal, has returned home after having had charge of the epidemic of typhoid fever at Fort William, Ontario. Dr. Douglas had charge of the epidemic from March 8, when the death rate was one person to every 9.1. When he left on April 8 only two or three cases were reported. During February the average daily number reported was 25.

Toronto General Hospital News.—A special committee of the staff of the Toronto General Hospital, which has been busily engaged all winter on the proper conduct of a large general hospital, have formulated plans which, to say the least, are quite radical. In the first place, every one on the present staff is called on to resign his position in the interests of the hospital and of medical education, so that the staff may be reorganized on ideal lines, and every practitioner in Toronto is asked to apply for positions on the new staff. A medical board is recommended consisting of the chiefs and assistants of all departments to be appointed to advise the board of trustees. Each medical service is to consist of 50 patients under the control of a physician in-chief, who shall be directly responsible to the board. These physicians are to give their entire time to teaching, hospital and consultation work. Assistants are to be appointed who, on account of being required to do much work, are recommended to receive $1,000 per annum. In the out-door department three are to be appointed, to attend two days a week each. Members of the staff will not be allowed to serve on other general hospitals in the city. An age limit of 40 years will be set, when physicians will be placed on the consulting staff. The house staff will probably be appointed on competitive examinations. At least $10,000, the committee states, should be appropriated annually for the scientific departments of the hospital. The emergency branch of the Toronto General Hospital will shortly be closed.

Personal.—Dr. A. A. McArthur, Winnipeg, has returned home after spending three weeks in Ottawa, Montreal and Toronto. ——Dr. S. Douglas, Park River, N. D., having received a license from the University of Manitoba, will hereafter practice in Winnipeg, Man.——Dr. O. Margolese of Montreal has removed to Winnipeg, where he will practice in future.——Dr. Adam H. Wright, editor of the *Canadian Practitioner*, has sailed for Naples. He will be absent about three months in Europe.—— Dr. Bruce L. Riordan, Grand Trunk surgeon at Toronto, is spending two months traveling through Ireland, England and Scotland.——Dr. J. A. Amyot has been elected president of the Toronto Pathological Society; Dr. W. H. Pepler, vice-president; Dr. E. S. Ryerson, corresponding secretary, and Dr. H. S. Hutchison, recording secretary.——Dr. H. B. Anderson has been elected president of the Toronto Clinical Society; Dr. Herbert A. Bruce, vice-president; Dr. G. Boyd, treasurer; Dr. W. J. McCollum, corresponding secretary, and Dr. George Elliott, recording secretary.——Drs. Beal, Black and Davis, London, Ont., have been appointed house surgeons at Victoria Hospital of that city for one year.

Annual Meeting of the British Medical Association.—Considerable progress has been made with the arrangements for the meeting of the British Medical Association in Toronto, August 21-25. A large attendance is expected not only from this continent, but from the British Isles. Among the noted European physicians who are expected to be present are: Dr. Delezenne, director of the physiologic laboratories of the Pasteur Institute, Paris; Dr. L. Lapicque, Paris; Dr. M. Nicloux, Paris; Prof. Justus Gaule, University of Zurich, and Prof. Max v. Frey, University of Würzburg. There will be thirteen sections, which will meet daily from 9:30 till 1 o'clock. The afternoons and evenings will be devoted to general meetings, public addresses, and various entertainments. Sir James Barr will deliver the address in medicine, his topic being "The Circulation, Viewed from the Peripheral Standpoint." Dr. W. S. A. Griffith will deliver the address in obstetrics, Sir Victor Horsley the address in surgery, and it is possible that a public address will be delivered by Dr. Marie of Paris. It is intended that clinics shall be held each morning at 8:30, when interesting cases will be reviewed by some of the prominent physicians and surgeons in attendance.

Hospital News.—The Toronto General Hospital bill has passed the Ontario legislature, and as soon as the new board of trustees provided for by this measure is appointed it will take under consideration the question of a reorganization of the medical staff. The present board will not deal with that question.——The Epileptic Hospital at Woodstock, Ont., which was only formally opened a few months ago, has been found inadequate for the needs of those seeking admission into its wards. Two additional cottages will be erected at once for the accommodation of 80 more patients. The cost is estimated at $48,600. The institution will then consist of the administration building with the superintendent's residence and four cottages.——The dispensary for women opened in Montreal three or four months ago, and attended by women physicians alone, has treated 590 cases of a medical and gynecologic character during the first three months of its existence.——Carlyle, Sask., will erect a small general hospital.——An association has been formed at Hamilton, Ont., the first to be formed in that province under the new Ontario municipal sanitaria act. A site of 98 acres has been donated as grounds for a consumption sanitarium by a Hamilton citizen and the $50,000 in hand for the purpose of a sanitarium will be expended in building cottages. An outdoor department will probably be established in connection therewith.——The total number of patients treated in the Winnipeg General Hospital during the week ending May 5 was 335—183 men, 109 women and 43 children. Eighty-two patients were treated in the outdoor departments.——A year and a half ago the Toronto ratepayers voted $50,000 for the purposes of a municipal sanitarium. Lately Dr. John Noble, the chairman of the local board of health, has revived the prospect of a municipal hospital for consumptives, but the idea met with such strong opposition that the question was taken to the legislature, but the private bills committee of that body was so overwhelmingly against the proposition that it is likely the money will in the near future be handed over to the National Sanitarium Association, for its free hospital ten miles out of Toronto.

FOREIGN.

The Disturbances Near Vesuvius.—The home for incurables at Torre del Greco was adjudged dangerous on account of the

volcanic disturbances, and the 35 inmates have been transported to the public hospital at Naples. The physicians there are discussing the possible pathologic results of the constant inhalation of the volcanic dust in the air.

Biologic Station in Greenland.—The *Presse Méd.* announces that the Danish government has received a bequest of about $10,000 for the erection of the biologic station in Greenland, mentioned in these columns March 11, 1905, page 809. The government will furnish $800 a year toward its maintenance.

Injury of Physician by Insane Patient.—Dr. Thivet, while making his rounds at the asylum at Clermont, France, was struck by one of the patients who had managed to conceal a piece of a bottle. The assistants who interfered were also seriously wounded. The insane patient had also secreted some pepper which he threw in the faces of the medical officers.

Two Physicians at Lisbon Taken from the Congress to the Hospital.—Two members of the International Medical Congress were stricken during the sessions. Dr. Thierry, from Chili, developed symptoms of typhoid fever and was removed to a private room in the hospital of San José, where his wife was also given a room. Another member, Professor Mascaro, an ophthalmologist, residing in Lisbon, while delivering an address on the education of the blind, was stricken with cerebral hemorrhage and was carried to the same hospital in a serious condition. The section adjourned at once after this distressing incident.

Remedy for Seasickness.—The cable states that Professor Hoffa made a thorough trial of the method of treating seasickness described recently in these columns on page 1299. His experience was eminently favorable. He applied hot linen cloths to his brow, bandaging them on tight, and changing about every minute and a half. After half an hour of this treatment he lay down for an hour, and when he arose he was entirely free from seasicknesss then and thereafter. His experiment was made on a recent trip to the Canary Islands. The technic is that proposed by Eugene Wolf, the explorer, who states in an article in the *Deutsche med. Wochft.* No. 3, 1906, that he has never known it to fail even under the most unfavorable circumstances.

A Paris Medical Journal in English.—A monthly review of French medicine has been founded at Paris "to represent English and American interests in France and French interests in English-speaking countries." The first number has been received and is a newsy journal of some 32 reading pages, with original articles and reviews of the work of the French medical societies, clinical lectures, etc. They have all appeared elsewhere (in French) and have already been reviewed in these columns. Some historical sketches of the great hospitals of Paris are given and lists of the private medical and surgical nursing homes, spas, etc. A quotation from Byrom Bramwell of Edinburgh expatiates on the profound impression made during a recent visit to Paris "by the wealth of material, the extraordinary number of rare and interesting cases of nervous disease, the exhaustive manner in which those cases are investigated, the success with which many obstinate diseases are being treated and cured, and with the lucidity with which these great masters of neurology (Déjérine and P. Marie), discussed and explained the intricate and difficult problems which many of these cases presented." He refers to Déjérine's "milk-isolation treatment" as having proved the most successful method of treating functional nervous affections which he has ever tried. An article by Déjérine on this subject is summarized on page 1482. The new *Paris Medical Journal* is published by Drs. A. A. Warden and Edmund L. Gros, 338 rue St. Honoré, Paris, $3.

Egypt and the Soudan.—In his report to parliament for 1905, Lord Cromer, the governor-general of the Soudan, makes many references to medical and sanitary matters. He states that during the early years of the British occupation the financial embarrassments of the government made it impossible to carry out many much-needed sanitary reforms. More recently, however, the water supply of towns has been taken vigorously in hand, and many are supplied with artesian wells. Alexandria is supplied with filtered water, and it is expected that the water-works at Damietta will be completed during the current year. The campaign against malaria which proved so successful at Ishmailia was extended to Suez with excellent results. The number of malarial patients in the hospitals decreased considerably and inquiries in the town indicated that the disease was much less prevalent than usual. The traveling camps for the treatment of ophthalmia, provided for by the Cassel Fund, have proved so successful that it has been decided to augment their work from the government funds. Alcohol, Lord Cromer, states, does not appear to play much part in Egypt. In the seaports there is a certain amount of drinking among the natives who are constantly in touch with Europeans, but the laboring classes scarcely drink at all. On the other hand, hashish smoking is very prevalent and is credited with being a common cause of insanity. The hashish is said to be smuggled into the country from Greece. Lord Cromer quotes from the report of Dr. Christopherson, of the civil medical department, to show that the Soudan is not a fever-stricken, smallpox-ravaged country, into which the Egyptian diseases—ophthalmia, bilharzia and ankylostoma—are being introduced. Smallpox shows itself occasionally, but if the country can be vaccinated properly there is, he says, little danger of an epidemic.

Burlesque Number of the "Muenchener med. Wochenschrift."—Once a year the mail brings us two copies of our scientific and dignified contemporary in a single wrapper. They are apparently identical in makeup and appearance, but the thinner one is pure burlesque from cover to cover. The satire this year is directed mainly against Bier's artificial hyperemia, serum treatment, new drugs, the mania for congresses of all kinds, and the various phases of contract practice. One advertisement purports to be from a sickness insurance company which states that as three of its six contract physicians have just died of starvation and the others have resigned, it is now advertising for 100 new medical officers. Preference will be given to applicants with a congenital faculty for breaking strikes and those who do not yet know anything about the *Leipziger Verband.* The advertisement of a newly founded medical journal follows. Its specialty is to be the discussion of new drugs after they have been tried on 6 animals (2 dogs 1 mouse, 1 guinea-pig and 2 sick-benefit policy holders). A new "Atlas of Mishaps at Operations" is advertised to appear in 80 parts. Part 1 is to be devoted to asphyxia and vomiting under the anesthetic; part 2 to the upsetting of the instrument table; part 3 to sudden detaching of the rubber tube from the full irrigator; 4, to the sudden going out of the lights. The atlas will be completed by the year 1986. One of the sketches is entitled "A New Hypnoticum" and describes the writer's failure to relieve the insomnia of a wealthy patient who was suffering from the results of overexertion in doing nothing (millionaritis hypertrophica). He ordered each of the familiar hypnotics in turn without result, but finally put his patient to sleep by reading aloud a play he had composed. The repeated success of this play as a hypnotic has encouraged him to have it published, and under the name "Dramatol, a New Hypnotic," it is for sale in all the book and drug stores. Among the triumphs of Bier's suction hyperemia reported is the removal of a tapeworm by this means, treatment of impotence, etc. One correspondent puts in a plea for priority, as he commenced years ago to apply the technic of suction hyperemia on his own person for therapeutic purposes, putting his finger in his mouth and sucking it whenever he hurt it. Wassermann reports in the *Grenzgebiete der Utopie und Ironie* the successful cultivation at last of spirochetes in pure cultures. This he accomplished by implanting a Petri dish in the back of a female monkey; he then implanted on the dish a papule on a pedunculated flap from another monkey, immobilizing both animals in a plaster cast. One article advocates removal of hemorrhoids by the abdominal route. Letters from Berlin, Paris and India state among other news that most of the trees in Java are now smeared with mercury, which answers the purpose of inunctions as the inoculated monkeys climb about them. It is stated that the "vaginologist, Prof. Duerr sen.", exhibited an iron woman at the meeting of his local medical society, remarking that the possibilities for rapid and complete sterilization must be regarded as a tendency which might serve as a model. The report of the International Medical Congress at Lisbon contains the alleged opening address of Senor Don Miguel Bombardos Garcia de los Rosinantos y Cravalhyaderos. It opens with the statement: "Of all the countries in the world called to do homage to science and to be celebrated by science none surpasses our radiant Portugal. We were the first to colonize South America and India; it was from our possessions in Brazil that quinin first came to save millions of lives. We invite the world to our colonies to study yellow fever and blackwater fever. We are the land of discoverers and the land of health." Then followed the main addresses, the principal being by his excellency Pampelunos de la Conceepeion y Paradoxos, who spoke exhaustively in Portuguese on the "Respiratory Quotient of an Asthmatic Dancing Mouse under Radium Stimulation of the Right Vagus Center." Other pages are devoted to society reports, parodies, poems, etc., many of them extremely bright. The comic number was first distributed at the banquet closing the proceedings of the Twenty-third German Congress of Internal Medicine, which was held this year at Munich, April 23 to 26.

Pharmacology

The Debt of the Medical Profession to the Manufacturing Chemist.

It is a natural tendency to attack an evil rather than to commend a virtue. There is so much that demands reform in the matter of proprietary medicines that a discussion of them tends to leave the impression that the medical profession is hostile to makers of medicinal preparations. This hostility is certainly justified, in so far as it applies to manufacturers who vaunt the claims of adulterated, dangerous, or worthless foods and drugs, or as it applies to those who would make physicians distributing agents for secret or semi-secret mixtures, or for ordinary drugs and chemicals, sold at an exorbitant price under a fanciful name, and on extravagant therapeutic claims.

There may be a few, possibly, who would dispense with all medicinal preparations not contained in the pharmacopeia, and to a certain extent they are justified, for we must admit that the pharmacopeia represents in an official and formal way the consensus of opinion of the medical profession. And any preparation which has not received this sanction should be used only after it has been carefully looked into by those competent to do so. The pharmacopeia, however, must always follow the vanguard of medical progress, and one of the most potent forces in this vanguard is the manufacturing pharmacist or chemist, especially in the past, when the medical profession was not so well organized and when facilities for experimentation were not so well provided as at present. The practical value of what is known as elegance in the preparation of drugs can not be doubted. Elixirs, pills, tablets, capsules, certain ointments, suppositories, bougies, etc., in which the even distribution of active drugs is of great importance, can not always be so well prepared in small quantities, at retail pharmacies, as in large quantities by manufacturers who can command special apparatus and skilled workmen. Even in regard to official drugs whose collection, recognition and preparation is theoretically within the ability of any one well-trained in pharmacognosy and practical pharmacy, we are greatly indebted to manufacturing pharmacists. Especially is this true concerning drugs not native to our own locality. The assaying of galenicals and the extraction of active principles have reached a basis of practical application only through the enterprise of such firms.

There exists much charlatanry in regard to some of the synthetic chemical compounds, and many of these have proved useless or even harmful, still there are not a few of great value, and for these we are indebted to commercial enterprise.

Instances are by no means unknown in which honorable manufacturers have employed skilled assistants, provided costly apparatus, and have gone to great expense in developing and testing new therapeutic agents and then have failed to place them on the market or have withdrawn them after a brief trial, because they did not prove of value. In so doing, they have, of course, had an eye to the ultimate benefit of their reputation and of the value of demonstrated excellence, still such far-sightedness is rare enough in the business world to merit our gratitude.

Therefore, it is unfortunate that there should have developed any antagonism between the medical and the pharmaceutical professions, yet an antagonism has developed, although not to the extent some seem to think. This antagonism is not toward the legitimate manufacturing pharmaceutical firms that are honestly catering to the needs of the physician by furnishing him with non-secret combinations in a convenient and satisfactory form, but against those who are supplying him with preparations about which there is more or less mystery, and for which extravagant, and often false claims, are made. For the practitioner in the country, the wholesale pharmacist has provided means of convenient, elegant, and efficient medication, whose value is inestimable, and the fact that too slavish reliance on such means has occasionally occurred, by no means detracts from the merits of the case.

Opium Habit in Infant from Kopp's Baby's Friend.

We have to record another case of poisoning from the use of Kopp's Baby's Friend. How many such cases occur annually it is, of course, impossible to state, but undoubtedly there are many children who are ruined for life, morally and physically, by the continued use of "patent medicines" containing opiates.

This patient is the infant daughter of Mr. and Mrs. Edwin Jordan, 1204 West Monroe Street, Chicago. Ten months ago, when the child's mother was visiting her old home in Rebersburg, Pa., the child suffered from colic and the mother was advised by her former pastor, the Rev. Mr. Bixler, a Lutheran minister of that place, to try Kopp's Baby's Friend which, he stated, was perfectly harmless and had been used in his family. Dr. J. J. Deshler, Glidden, Iowa, a relative of the family, recently visited Mr. and Mrs. Jordan and at once noticed that the child was in an abnormal condition. He reports the case as follows:

"The medicine was used continuously, according to the instructions on the label, since the child was about 4 months old, once or twice daily, the last dosage being one teaspoonful. The child was under the influence of the opiate the whole twenty-four hours. Dentition is almost completely absent and a general condition of lassitude and listlessness is present.

Appetite has been fair, so that the child is in a well-nourished condition. Its age now is 14 months. The child has an extremely waxy pallor and appears sleepy. While taking the preparation the child 'did not seem to be able to open its eyes wide' (see illustration). It can now do this. It was formerly constipated, then lately a severe diarrhea set in, but that ceased when the drug was discontinued.

"I prescribed two minims each of tincture of asafetida and tincture of hyoscyamus in a little sweetened water.

"When necessary an occasional dose of a carminative tablet containing a minute dose of codein sulphate was given. The parents were instructed to give plenty of nourishment and Pasteurized milk was prescribed.

"Since the child has been taking this the mother states that it is much better and brighter, and takes more interest in its surroundings, though, naturally, it is cross and irritable."

We sent a physician to see the child and to learn present conditions. They are as reported by Dr. Deshler. Mrs. Jordan expressed her willingness to have the report published in the hope that it may be the means of saving other babies from a similar fate. She declared that had she known the preparation contained morphin she would never have used it, and she was very emphatic in stating that: "the government should prohibit the sale of such dangerous preparations."

Canned Editorials.

Under the above apt title, May 12, *Collier's Weekly* says: Canned editorials, to employ the *Druggist's Circular's* apt phrase, are being sent broadcast to the newspaper offices by the Proprietary Association of America. The medical profession is accused of being a huge trust, warring on "patent medicines" in its own interests. Since doctors give enslaving and dangerous poisons, argues the Proprietary Press Bureau, nostrum makers should be allowed to. Verily, a remarkable plea for immunity, this! "It's true that I'm in a murderous business, but so is Dr. Blank across the street." Another stock argument is that doctors' prescriptions are secret, therefore "patent medicines" should be; further, that all prescriptions should be written in English instead of Latin, if "patent medicine" formulas are to be open. But physicians' prescriptions are not secret. If they were the druggist could not fill them. Moreover, they are always kept on file for reference in case of error or damage. As for the substitution of English for Latin, the Fraud Association advocates this because it knows it to be impossible. Latin is the language of science; prescriptions are scientific compounds. Many Pharmacopeia drugs have no English names: infinite confusion and danger would be the result of substituting an unscientific for an exact terminology. As well require all botanic or entomologic classifications to be couched in the language of the country. *Collier's* is charged with being an ally of the "doctor's trust," and its charges are discredited on the ground that they are the work of "hired scribblers." To the honor of daily journalism, be it said that the prepared editorial arguments of the Proprietary Association have either been totally disregarded by the more important newspapers or received with derision.

Subordination of Medical Journals to Proprietary Interests.

One of the articles on fraud in "patent medicines" in *Collier's Weekly* was on "The Patent Medicine Conspiracy Against the Freedom of the Press." What is needed now is an article on "The Proprietary Medicine Conspiracy Against the Freedom of Medical Journals." There is certainly plenty of material at hand to prove that a majority of medical journals are as much under the domination of the proprietary medicine manufacturers as are most of the newspapers under the control of the "patent-medicine" men.

The *National Druggist* of St. Louis is recognized as a supporter of the "patent-medicine" men's association, and it has tried to live up to its full functions as such. It has defended "patent medicines" in particular and nostrums in general. It has attacked everything and everybody that favored legislation looking to the regulation of the traffic and to the protection of the public. A little while ago it published an article entitled "The Legislative Schemes of the American Medical Association," which, as might be imagined by the title, was an attack on the American Medical Association. In the main it was made up of falsehoods, extravagant statements and garbled extracts. It claimed that the attack on "patent medicines" was instigated by the American Medical Association, and that the American Medical Association was the cause of the introduction of bills in the various legislatures for the regulation of "patent medicines." It attempted to show that the doctors, for selfish reasons of course, were back of the movement against "patents" and that the American Medical Association was a trust of the vilest sort, without a redeeming feature.

Immediately after its appearance in the drug journal the article was reproduced in pamphlet form and evidently no money was spared to make it attractive, for as gotten out it was certainly a credit to the printer's art. It was sent to the newspapers of the country and was evidently well circulated among the druggists. Attached to the pamphlet sent to the newspapers was a slip calling the editors' attention to the contents and indirectly suggesting that they make use of them in their columns. While many newspapers recognized that the pamphlet emanated from their patrons, the Proprietary Association of America, and printed extracts from it with their approval, it must be said to their credit that the majority saw the animus bebind it and ignored it, and still others showed the absurdity of the statements the pamphlet contained and defended the medical profession. So taking it all in all, the "patent-medicine" men did not see the results they expected to see in their appeal to the newspapers, and the American Medical Association has not been injured as they hoped it would be.

Bearing in mind the fact that this article was in reality a defense of "patent medicines" and an attack on the medical profession, it is pitiful to know that an editor of a medical journal—medical in name, at least—swallowed the bait, hook and tackle, to use a slang expression—and reproduced the entire article, something which no newspaper had done, so far as we know. Just why a medical journal would copy this tirade against those it was supposed to represent might at first seem difficult to imagine. Those charitably disposed might think it was because the editor did not know any better. And yet the reason is evident. The journal to which we refer—the *St. Louis Medical and Surgical Journal*—is a representative of the class of papers that, while published ostensibly for physicians, are kept alive by and conducted in the interests of the advertisers, and whenever it becomes necessary to take sides the advertisers' interests rather than those of the reader are protected. The advertisers in this case are nostrum vendors—at least a large majority of them are—and because the American Medical Association is trying to get rid of the nostrum evil, and because the Association's success will mean for the St. Louis publication the loss of that on which it depends for existence, it naturally wants to see the American Medical Association checked. The *St. Louis Medical and Surgical Journal* did not publish this tirade against the American Medical Association and the physicians of the country because it is in favor of "patents," but because it is under obligations to the nostrum manufacturers whose interests are being affected by the American Medical Association, and because it is one of the organs of the nostrum men, at least this might be expected from the character of its reading matter. An examination of its pages for the last year—the first three months of this year averaging about the same—reveals the following: Aside from the articles it copied from the *Proceedings of the Philadelphia County Medical Society*, none of which could be called original, as they had appeared at least in the publication of the society if not in other journals, the *St. Louis Medical and Surgical Journal* published seventeen original papers during 1905, and of these seventeen, thirteen were "write-ups" of proprietary medicines.

The total of the strictly original articles not devoted to proprietary remedies, exclusive of illustrations, occupied less than six pages.

But besides these "write ups" in the "original" department, there were reading notices, most of them attractively presented to catch the innocent and gullible reader, varying in length from three or four lines to three pages.

The proprietaries written up in this manner and the number of times mentioned are: Acetozone, 2; adrenalin, 1; aletris cordial, 3; antikamnia, 2; antiphlogistine, 8; bovinine, 5; bromeotone, 1; bromidia, 1; Burnham's soluble iodin, 1; cactina pillets, 1; campho phenique, 5; celerina, 3; chionia, 1; dermapurine, 8; echthol, 2; ergoapiol, 4; gelineau dragees, 1; Hagee's cordial of cod-liver oil compound, 4; hydrozone, 2; iodalia, 1; listerine, 3; mandragorine tablets, 1; neurilla, 1; Pantauberge's solution, 2; papine, 1; pasavena, 1; passiflora, 3; Peacock's bromids, 1; pinus canadensis, 5; respiton, 1; sanmetto, 15; seng, 2; tongaline, 7; vin Mariani, 13.

An apology is due our readers for devoting space to so unimportant a subject, but while the circulation of the periodical in question may be small and its influence insignificant, it is typical of a class of journals which, combined, has considerable weight with practitioners who are not sufficiently interested in scientific medicine to subscribe for journals edited and published solely in the interests of the medical profession. Although our rule is to ignore attacks made on the American Medical Association and its journal, yet we think it wise, occasionally, to call attention to facts which may enable our readers to discriminate between the true and the false in a matter which is of supreme interest to the profession as a whole.

Society Takes Action.

At a recent meeting of the Ottawa County (Mich.) Medical Society the following resolutions were adopted:

WHEREAS, The American Medical Association, through its Council on Pharmacy and Chemistry, is engaged in the work of bringing to the attention of the medical profession the composition of the various nostrums and proprietary medicines which are on the market and advertised extravagantly and fraudulently to the profession; and

WHEREAS, The interests concerned in the manufacture and sale of these nostrums are spreading literature throughout the country, and are doing everything in their power to defeat the work of the Council on Pharmacy and Chemistry; and

WHEREAS, The American Medical Association, through the editors of the "Councilor's Bulletin" has asked for an expression of the attitude of the different county societies, the component parts of the American Medical Association; therefore, be it

Resolved, That the Ottawa County Medical Society of the State of Michigan hereby expresses its approval of the work that has already been done in this regard and agrees to help in every local way possible this educational campaign; and further,

Resolved, That the members of this society shall refrain from prescribing any of the nostrums which have been analyzed and rejected by the Council and that they shall seek to profit by the articles published in THE JOURNAL of the American Medical Association under the head of "The Pharmacopeia and the Physician"; and further

Resolved, That the society extends its thanks and earnest commendations to *Collier's Weekly* and the *Ladies' Home Journal* in their campaign against "The Great American Fraud" and promises its support in their further work in this direction; and further

Resolved, That copies of these resolutions be sent to THE JOURNAL of the American Medical Association, the *Journal of the Michigan State Medical Society*, *Collier's Weekly* and the *Ladies' Home Journal*.

B. B. GODFREY, M.D., and E. D. KREMERS, M.D., Committee.

Insurance Examination Fees

Cheap Fees and Cheap Services.

PORT RICHMOND, S. I., May 7, 1906.

To the Editor:—I was very much interested in Dr. McCormack's article, and I believe it and similar articles will have a tendency to strengthen the fraternal feeling among "doctors."

The argument that the majority of physicians are willing to make examination for $3 is a weak one, for, if insurance companies should reduce the fees to $2 or $1.30, there would still be a good many men who would work for them, for reasons which are obvious to struggling physicians. Not only was there a cut in wages, but there was also an increased amount of work required. One large industrial company now requires urinary analysis of all applicants, when, as formerly, the age limit was 45 years.

It also has an intermediate form whereby an agent can write several thousand dollars' worth of insurance and yet the physician receives only $1 for examination and often is asked to review his work or answer inquiries without extra compensation.

In the industrial department the instruction book is so worded that they can use the "big stick" on any examiner at a moment's notice and the examiner has no redress.

If any one doubts this I refer them to the instruction book, where it states: "An examiner must make a personal, physical examination and all questions must be answered before applicant signs." The fee for this is 25 cents. How many examiners are there that are not technically guilty and liable to have their reputations smirched whenever the "big stick" falls? Who are the users of the "big stick?" They are members of our own profession, members of our society, state and interstate, and often graduates from the same alma mater.

One of the things that the medical profession needs is more men who are independent and unselfish and who will fight for principle and right regardless of any temporary pecuniary loss.

N. D. CHAPMAN, M.D.

Society Takes Action on Fees.

BUFFALO CENTER, IOWA, May 11, 1906.

To the Editor:—I was instructed by the Winnebago County (Iowa) Medical Society to send to you for publication a memorandum of action at a meeting held at Lake Mills, Iowa, May 10, 1906: It was moved and seconded that a resolution be adopted not to accept the 40 per cent. reduction in life-insurance examinations asked for by certain old-line insurance companies, and that the society sanction any action taken by the state and other county societies in regard to the regulation of fees in fraternal insurance examinations, and that our delegate to the state society be instructed to use all honorable means to co-operate in any movement tending to put the fees for such fraternal examinations at two or more dollars. Carried. H. F. THOMPSON, Secretary.

Medical Organization and Insurance Fees.

GALESBURG, ILL., May 12, 1906.

To the Editor:—The letter from Dr. McCormack in reference to life-insurance fees in THE JOURNAL, May 5, together with your editorial on the subject in the same issue, although perhaps a little late in the day, must come as a welcome help to the many practitioners who are in doubt not only as to their duty, but as to their rights in this important matter.

It does not seem that it was eleven years ago, as stated by Dr. McCormack, that the New York Life Insurance Company notified me that after a certain date the fee for examining applicants for their company would be reduced to $3. However, they were promptly notified to remove my name from their list of examiners. My idea was that I could not consistently examine for the Mutual Life, the Equitable and the Northwestern, including many others who had not reduced their examination fee, and continue with the New York Life at $3. For the same reason I refused to examine for the so-called assessment companies whose examination blanks usually required more work for a dollar than any one of the old line companies which were paying $5.

Is it not reasonable to suppose that one of the explanations of the failure of the many assessment companies to survive any long period is the size of the medical examination fee? A dollar never has bought as much as five dollars and it never will. To illustrate: I knew, professionally, a diabetic who got insurance in every assessment company to which he applied. He furnished his own urine to every one of the examiners, but none of them had time to examine it in addition to all the work necessary to fill out the required blank. This man, although he tried, did not succeed in getting into any old-line company. Many of the examinations for the assessment companies are made in bunches: often nothing but filling out the blanks in a perfunctory manner in the physician's office is attempted, no measurements or physical examination. The head physician of one of these orders recently complained to me that a certain examiner of theirs never turned in an examination blank with the pulse other than 72, respirations 17 and temperature normal. Twenty years ago, when I was a first-year medical student, I remember assisting my preceptor one evening in examining an office full of men. My part of the duties was to make the physical examination, while he sat behind the desk and did the clerical work necessary. Comment is needless, except that the doctor in question was being paid a small fee for each examination, and he was too busy to take the time from work that paid him better.

The point in your editorial relative to the low fees of these companies is well taken, and if they can not be made to modify their examination blank to within reasonable limits for a minimum fee of from two to three dollars, then they should be refused the service. This can easily be done with the present organization of the county societies. The trouble with the assessment companies is that many of them are started by a lot of grafters who do not want an honest medical examination or a permanent institution. This must be true, else the promoters of these concerns would not attempt to sell insurance for the price they ask. They can not be honest, I repeat, else they would not expect to get for a mere pittance an examination which would make them safe in accepting a given risk. Of course, in the final analysis, the doctor is to blame for conditions as they exist, and back of him is the great fact that he has had no organization by which he could systematize and dignify his claims to square treatment.

Some weeks ago I received a letter, with a postal card inclosed, notifying me that the fees had been reduced by the Mutual Life Insurance Company of New York from $5 to $3, and requesting that I use the postal to notify the company of my acceptance of their proposition. As I remember it, this postal was an interesting document: it was printed in

such a way as to assume that only one reply would be received from the recipient. I crossed out the ready-made answer, or its equivalent, and merely stated that they could remove my name from their list of examiners. The reply which I received was identical with that received by Dr. Parsons of Brookings, S. Dak., published in THE JOURNAL, May 12, 1906.

To this I replied in part as follows:

Brandreth Symonds, M.D.,
Medical Director Mutual Life Insurance Company,
New York, N. Y.

Dear Doctor:—Relative to yours of the 9th inst., in reference to my retaining the position as one of the examiners of the Mutual Life at this place, permit me respectfully to decline the position at anything but the old terms.

A life insurance company that has to economize in its medical department is in an unenviable position. The corner-stone of life insurance must be the honesty of its medical examiners, to say nothing of their technical knowledge. To let down in your fee to the amount proposed will, in a large number of instances, make these men, to that proportionate degree, careless in their examination. You will simply get a three-dollar examination in spite of the fact that many of the examiners will try to give you a five-dollar service. On these grounds, I refused to examine for the New York Life a few years ago, and I would not be consistent if I did not do the same with your company now. In passing, and while on this point, it may be well to mention that the New York Life got a very good practitioner to take my place. This man was also examiner for your company at the time he accepted the three-dollar position from the New York Life. In other words, he was willing to take three dollars from the latter company for supposedly the same kind of an examination for which he was charging your company five dollars. But for some unknown reason your Chicago office, some months ago, dismissed him from his position; on what grounds, I do not know. It will not be surprising if a riper experience on the part of your company will show that the twelve thousand who consider your "new fee schedule as adequate" will show in the future characteristics which will make it desirable to dismiss them also. At any rate, I consider myself fortunate in being able to be numbered with the "nine hundred."

An interesting reference in your letter is the one as to the necessity for rigid economy because of recent events in the life insurance business. The "other companies" (I presume you refer to the New York Life) which have had this reduced "fee schedule in force for years" do not seem to have benefited their policy-holders any by reducing their examination fee to three dollars. The New York Life, with its three-dollar economy examination fee, was proved to be even more rotten at the three dollar fee than the Mutual Life, which, up to now, has maintained the five-dollar fee for an examination.

It is an interesting question as to how far the big insurance companies can afford to go in this kind of treatment of their most necessary allies, the physicians of this country. The future alone will decide; but I do not care to be made a part of the experiment.

With the greetings of a colleague, believe me,

Very sincerely yours,
J. F. PERCY.

I believe that the position taken in the above letter is correct, and believe it now more firmly than ever since reading your editorial and the letter of Dr. McCormack above referred to. My only regret is that more of the "twelve thousand" did not take the same view of the question. Some time ago I received notice of my appointment as examiner in one of the old-line eastern companies. The letter containing my appointment, among other things, had this to say:

"We can not refrain from calling your attention to the very responsible character of your duties as medical examiner to this company. It is not too much to say that the safety of an insurance company rests largely in the hands of its medical examiners. If unhealthy risks are taken, it will prove of little avail that the other departments of the company are conducted in an efficient and careful manner."

Another important phase of this subject is the one of the physician as a policy holder in the companies under consideration, because an appointment is usually predicated on the fact of the physician who is willing to become an examiner first taking out a policy. We have heard for years that life insurance offered the best form of investment for the professional man. With thousands of other unfortunates, who are not physicians, we now know that the investment feature was a delusion and a snare, concocted by wileful agents with the connivance of the home officers of these great companies. What is to be the attitude of the "twelve thousand" in the future as these same agents lead into their offices for examination, as sheep to the slaughter, seekers after life insurance whom they (the examiners as well as the agents) will know from now on are being buncoed when the examination is for anything but straight life insurance? Will the medical examiner become a party, with the average agent, to the fraud when the applicant has not been told the whole truth as to what he is buying in the way of life insurance? This most cruel form of deception was the rule with all but a very few of the life-insurance agents who required our services in the past. But now we physicians know, or ought to know, something of the relative value of the various forms of insurance. Will it become part of the duties of those medical examiners who are to make medical examinations for $3 to tell the applicant what he may not have been told by the agent? For the honor of the profession, I trust that the physicians who may continue to hold these positions at the reduced price will not now continue knowingly to aid any agent in deceiving those who apply for life insurance.

J. F. PERCY.

Correspondence

Automania the New Disease.

COLUMBUS, OHIO, April 25, 1906.

To the Editor:—The number of diseases produced by occupation is being augmented by the complexity of modern life. Medical men are acquainted with the ordinary forms of occupation diseases, such as the necrosis of match-makers, the cataract of blacksmiths, the colic of painters and the like.

I wish to call attention to a disease of this class of recent origin. The new disease is so prevalent as to have attracted the attention of many physicians, and I learned from THE JOURNAL, April 21, that not a few physicians have had a personal experience. The new disease is a functional neurosis and spreads through a community, like chorea, by imitation.

The disease is known as motor fever, chauffeur mania and automobiliousness. The spread of the disease is limited only by the confines of civilization and the quarantine enforced by poverty. The disease has followed the train of the horseless carriage into every country able to pay the excise and repair duties.

In the etiology of chauffeur mania, the automobile is the direct cause, and the sporty disposition, plus a large bank account, constitute the predisposing causes. The disease affects a large class of people. It is, indeed, pandemic. The extremes of life are exempt. The male sex furnishes the vast majority of the subjects. Physicians are peculiarly susceptible. The poor are immune. The rich are especially predisposed. The negro is rarely affected, except through reflex relation to employer.

There is little known of the pathology of the disease, as it never proves fatal. Neurologists regard the disease as a neurosis. On the other hand, chemists who have reported delusional insanity, as terminal forms of motor fever, do not regard the disease as a simple neurosis. Although they declare that the pathognomonic symptom, in support of the doctrine of insanity, in all terminal cases of this disease, as observed in hospital practice, is found in the fact that on entering the ward not a patient is visible—all are hidden under the beds working with the springs!

Almost all cases of motor fever are chronic. They seldom last less than one year, and often from two to five years. The most promising cases are those with equine reserves. One pegasus in the end will outrival three "honk, honk wagons."

Coming closer to the clinical history, one of the first symptoms to develop is amnesia. The failure of memory refers especially to routine duty. This neglect of duty often extends to domestic and personal wants. Irregularity of habits follows. The mental attitude is shown in eccentricity of costume. The peculiarities of facial expression are known as "the stony visage" or "the sphinx-face."

The features of the automobile face are drawn, rigid and ruddy, as in paralysis agitans. The eyes wear a steady gaze, and a far-distant focus, attended with a cold glitter. The stony visage often appears in a sort of trance, as though the patient were the subject of autosuggestion rather than automobiliousness. The stony, ruddy visage, with its far-off fixed gaze, prematurely old, dust-laden, garnished with goggles and a "you-be-damned" expression is pathognomonic. This *tout ensemble* once observed is never forgotten.

In cases of long standing, mental excitement is a constant symptom. Sleep is dominated by dreams of speed, cylinders, cooling devices and expenses. The patient becomes arrogant and impervious, impatient and petulant. He is intolerant of everything and everybody, especially police officers.

The diagnosis is not difficult, but the disease has been mistaken for delirium tremens. In chauffeur mania, the patient sees the animals and is positive he sees them.

In *mania a potu*, the patient is uncertain as to the real existence of obtruding animals and his ability to destroy them. Not so the chauffeur maniac, as he is swift and certain of both aim and game.

Chauffeur mania has been confused with football psychosis. In the latter disease the subjects are perfectly harmless concerning the public or domestic animals, but attack and destroy each other. The automaniacs never attack each other, but have predilection for small animals, as chickens, dogs, cats, toads and sometimes babies.

In advanced cases, a kind of strabismus or obliquity of vision has been noted, in which the driver of the machine loses control and the line of transit is direct to a telegraph pole or the goal may be a road-house.

Treatment is unsatisfactory; the most effectual is prophylactic. Army and Navy service should result in prevention. Permanent residence in the mountains is recommended.

Goat lymph was tried as a curative agent in a series of cases. The treatment was discontinued for the reason that patients were butting into lakes, plate-glass store fronts and police stations. J. W. CLEMMER.

Invitation to Mexican Congress.

THE INTERNATIONAL MEDICAL ASSOCIATION OF MEXICO.

TORREON, COAH., MEX., May 11, 1906.

To the Secretary of the American Medical Association: On behalf of the members we have the honor to invite the members of the American Medical Association to be present at the second annual meeting of the International Medical Association of Mexico, which will take place in Mexico City in November next. Due notice of the exact date will be given.

Hoping to have the pleasure of the company of many, if not all, members of the A. M. A., we have the honor to be, yours very truly. W. R. JAMIESON, Sec'y and Treas.

R. D. ROBINSON, President.

Shock as a Curative Agent.

CHICAGO, May 12, 1906.

To the Editor: The editorial on "Shock as a Curative Agent" in THE JOURNAL, May 12, p. 1444, recalls to me a rather interesting and, I believe, unusual experience. Some years ago I was a passenger on a transatlantic liner which met with a mishap, so serious in character, that for nearly two days we expected to go down at any moment. On the evening preceding the accident only 12 of the 250 cabin passengers were down to dinner, one being detained by a recent attack of apoplexy, 237 by seasickness, more or less severe. On the following morning 249 of us assembled in the dining room and ate our breakfast with as much relish as our mental state permitted. The only absentee was the paralytic. The reverse side of the picture was represented by four cases of acute insanity and an acute exacerbation terminating in suicide in a chronic case of mental derangement. SYDNEY KUH, M.D.

Association News

SCIENTIFIC EXHIBIT.

Committee.—FRANK B. WYNN, Indianapolis, Director; W. M. LATE CORLIN, Philadelphia; W. T. COUNCILMAN, Boston; FREDERIC S. DENNIS, New York; JAMES CARROLL, Washington, D. C.

MEETING PLACE: NEW HARVARD MEDICAL SCHOOL BUILDINGS, LONGWOOD AVENUE.

The Scientific Exhibit at Boston will consist of specimens, models, diagrams, apparatus, etc. A laboratory in operation will show newer laboratory methods as applied to diagnosis and to investigation. Demonstrations will be given on special subjects in small rooms; others of more general interest will be conducted in a large amphitheater where a lantern and projection microscope are available. The program of demonstrations follows:

A. ILLUSTRATED LECTURES AND LANTERN SLIDE DEMONSTRATIONS IN THE AMPHITHEATER OF THE ANATOMICAL BUILDING.

WEDNESDAY, JUNE 6—10 to 12 A. M.

HEKTOEN and RUEDIGER: Demonstration of (a) phagocytosis experiments and (b) cultural peculiarities of pneumococci and streptococci.

HODGE: "Locomotion of Amebæ."

CARROLL: Demonstration of *Amœba coli* and life history of Amebæ.

TYRODE: Demonstration in pharmacology.

WEDNESDAY, JUNE 6—2 to 5 P. M.

FITZGERALD: "Biologic Studies Connected with Water Work Construction."

WOLBACH: "Blastomycotic and Allied Skin Affections."

PARK and WILLIAMS: "Rabies."

WRIGHT: "Actinomycosis and Madura Foot."

FROTHINGHAM: "Rabies; Glanders."

THURSDAY, JUNE 7—10 to 12 A. M.

GAGE: Demonstration of (a) projection microscope and its application in teaching; (b) projection of frog's circulation.

PORTER: Demonstration of (a) physiologic apparatus; (b) nutrition of heart by vessels of Thebesius; (c) circulation in a tortoise heart.

CANNON: Kinetoscope demonstration of (a) movements of intestine and stomach; (b) demonstration of action of valves in ox's heart by electric light.

BOWDITCH: Demonstration of optical illusions.

HENDERSON: Demonstration of heart model showing action of valves in production of heart sounds.

LONGCOPE: Demonstration of muscular bundle of His, with cases illustrating heart block.

HATCHER: Demonstration of kidney perfusion.

THURSDAY, JUNE 7—2 to 5 P. M.

(Joint meeting with the Section of Pathology and Physiology.)

FITZGERALD: "The Metropolitan Water Supply of Boston."

BENEDICT: Illustrated lecture, "Metabolism," with demonstration of respiration calorimeter of Atwater.

NOVY: Demonstration of Trypanosome diseases.

KREMERS and REMINGTON: Demonstration of exhibit showing the development of pharmacopeias.

MARCY: Demonstration of historial exhibit, illustrating the life and work of HENRY I. BOWDITCH.

FRIDAY, JUNE 8—10 to 12 A. M.

MEYER: Illustrated lecture, "Psychiatry and Methods."

SOUTHARD: Demonstration of cerebral tuberculosis and of the Bullard collection.

TAYLOR: Demonstration of the systemic diseases of the spinal cord.

NICHOLS: Demonstration of diseases of joints, tuberculosis and chronic arthritis.

WHITE: Demonstration of advanced tuberculosis in childhood and adult life.

B. MICROSCOPIC AND OTHER SPECIAL DEMONSTRATIONS—THESE WILL BE CONDUCTED IN THE SMALLER ROOMS OF THE NEW HARVARD MEDICAL SCHOOL BUILDINGS AT THE HOURS AND BY THE INDIVIDUALS SCHEDULED BELOW.

TUESDAY, JUNE 6.

9 a. m. to 12 m.—FRAZIER: "Surgical Pathology."

2 p. m. to 3 p. m.—BEIM: Demonstration of agglutinins, etc. Room A.

CALKINS: Demonstration of paramecia, etc. Room B.

3 p. m. to 4 p. m.—GAGE: Various glycogen reactions.

HODGE: Demonstration of motile amebæ of nerve cells in fatigue. Room B.

MILLER: "Lymphatics of Lung."

WEDNESDAY, JUNE 7.

9 a. m. to 11 a. m.—SCHULTZ: *Spirochæta pallida*. Room A.

KNOWER: "Lymph Hearts and Lymphatic System of Frog Larvæ." Room B.

11 a. m. to 1 p. m.—MANDELBAUM: Various pathologic specimens. Room A.

COPLIN: Various pathologic specimens showing lesions of mucous membranes.

PARK and WILLIAMS: Rabies, etc. Room B.

MALLORY: Intercellular fibrillæ. Room A.

SOUTHARD: Demonstration of Gliomata.

THURSDAY, JUNE 8.

9 a. m. to 11 a. m.—SCHULTZ: *Spirochæta pallida*. Room A.

ROSENAU: "Cestode Parasites." Room B.

11 a. m. to 1 p. m.—TYZZER: Demonstration of mouse tumors, varicella; dermatitis from Brown tails, etc. Room A.

VERHOEFF: "Eye Lesions, Tumors," etc.

WRIGHT: Blood Plates, etc. Room B.

Clinical Exhibits.

Dr. Richard C. Cabot, chairman of the Committee on Clinical Exhibits at the Boston session, announces an elaborate series of demonstrations at all the hospitals. The list is too long to reproduce here, but we quote the general announcement. The full schedule will be given in the Official Program, a copy of which will be given each member on registration. Dr. Cabot says:

To provide a brief postgraduate course in each and all the branches of medicine, a course free to the members of the Association and conducted by the best teachers of the Harvard and Tufts medical schools is the object of this exhibit. If a physician wishes to inform himself on the current methods of examining blood, urine, sputa, feces or gastric contents he can find specimens and demonstrators in Mechanics Hall. If he wishes to watch the detail of operative technic in general surgery or in any special branch, such as orthopedics and gynecology, he can do so at one or more of the hospitals. If he wishes to compare notes with our best authorities on infant-feeding or on the outdoor treatment of tuberculosis he can avail himself of some of the many demonstrations at the Children's Hospital, the Samaritan Hospital or the Infants' Hospital.

If he wishes to examine and diagnose cases of surgical interest, cases of the contagious exanthema, of gastric, cardiac or pulmonary disease, or neurologic or dermatologic cases, he is welcome to use the clinical material offered for his study in the Boston City Hospital, the Massachusetts General, the Boston Dispensary or the Mechanics Hall exhibit.

Apparatus, instruments, records, models, charts, photographs, lantern slides and *x*-ray plates will be used to supplement the clinical material. Autopsies with the clinical history of each case will be demonstrated, moving pictures of epileptic fits, spasms and gaits of various types will be shown and explained, cases of the various types of mental disease, accompanied by attendants and history, will be ready for study.

All the hospitals will be open for inspection and study throughout the session, and any one who wishes to devote special attention during the session (or after it) to any one of the medical or surgical subjects exhibited will find no difficulty in arranging to do so. To prevent overcrowding at any one clinic or demonstration, a number of tickets proportional to the seating capacity of each amphitheater will be distributed each day from a central booth at Mechanics Hall. First come, first served.

GENERAL ENTERTAINMENTS.

FOR MEMBERS AND GUESTS.

(The official member's badge, or one of those provided for ladies and guests, will be required for admission.)

TUESDAY, JUNE 5.

4-6 p. m.—Afternoon tea at the New Harvard Medical School buildings, on Longwood avenue, by the invitation of the medical profession of New England and the courtesy of the president and fellows of Harvard College. There will be music in the central court, the grounds will be decorated for the occasion and tea and light refres' ments will be served by the young ladies of Boston.

8 p. m.—Gen. William H. Devine, surgeon-general of Massachusetts, extends a cordial invitation to the members and guests of the American Medical Association to visit the South Armory, Irvington street, at 8 o'clock on Tuesday evening, June 5, to witness a regular drill of the ambulance company of the Massachusetts Volunteer Militia.

8:30 p. m.—Chickering Hall, Huntington avenue. Mr. Charles Truax, of Chicago, will deliver a lecture on the Yellowstone National Park, superbly illustrated by lantern slides.

9-11 p. m.—Boston Public Library reception. The trustees of the Boston Public Library extend a cordial invitation to the members of the Association to a reception at the library from 9 to 11 p. m. on Tuesday, June 5, to meet his honor, the mayor of Boston.

9-11 p. m.—Boston Museum of Fine Arts. The trustees of the Museum of Fine Arts invite the members of the Association to a reception at the museum at 9 o'clock on Tuesday evening, June 5.

WEDNESDAY, JUNE 6.

4-6 p. m.—Afternoon tea at the New Harvard Medical School buildings.

8:30-12 p. m.—A reception and promenade concert will be given by the medical profession of New England to the president, officers, members and guests of the American Medical Association at Mechanics' Hall. There will be dancing and refreshments. The hall will be decorated and music will be furnished by the Medical Glee Club and by an orchestra of thirty-five pieces.

THURSDAY, JUNE 7.

2:30-3:30 p. m.—Organ recital. The rector of the Mission Church, 1545 Tremont street, has extended an invitation to the members of the Association to visit the church and to inspect the school, club, gymnasium and other institutions which are there conducted by the Redemptorist Fathers. An organ recital will be given from 2:30 to 3:30 p. m.

4-6 p. m.—Afternoon tea at the New Harvard Medical School buildings.

8 p. m.—"Theater night." Arrangements have been made for the reservation and sale to members of the Association and their guests, at a booth in Mechanics Hall, of tickets to all of the theaters and to the "pop" concert at Symphony Hall. Special performances will be arranged and the "pop" concert will be reserved entirely for the members of the Association. Special invitations to the members of the American Medical Association have been extended by the officers of the following institutions, and arrangements for their reception and entertainment will be provided: Boston Medical Library, Boston Museum of Fine Arts, Boston Public Library, Boston Young Men's Christian Association, Cambridge School of Nursing, Children's Hospital, Faulkner Hospital, Harvard College, Massachusetts General Hospital, Massachusetts Society of Mayflower Descendents, Waltham Training School for Nurses.

EXCURSIONS.

The excursions planned for the members of the Association and the ladies and guests who may accompany them are too numerous to be enumerated here. A special pamphlet giving details of the various excursions will be issued to each member of the Association at the time of registration, together with the Guide Book, which has been prepared expressly for this occasion.

The Association Insignia.

Since the publication in recent issues of letters by Drs. E. Fletcher Ingals, T. S. Dabney and E. S. McKee relating to the official insignia of the American Medical Association, we have received numerous inquiries concerning the button and how it may be obtained. Many of our readers do not seem to be aware that for years we have made an announcement in our advertising pages for the purpose of giving this information. This week's advertisement appears on page 33 in our advertising department. To all inquirers we desire to say that the American Medical Association insignia can be procured at the office of the Association, 103 Dearborn Avenue, Chicago. The price of the button is $1.00, or a member may receive one as a premium for securing a new member of the Association, or a new subscriber to THE JOURNAL, but not for the transfer of a present subscriber to membership. Women who prefer a pin may secure the badge in the form of a cloak pin on the

same terms. The general use of the official insignia can not fail to promote a fraternal feeling among physicians.

Hotels.

The Committee on Hotels announces that all available accommodations in the first-class hotels are filled, but that applications are coming in only slowly for lodging-houses. The committee has a list of lodging-houses of good quality and of accessible location, with ready facilities for dining out.

Attention is again called to the possibility of securing accommodations near the ocean. As announced in THE JOURNAL May 5, if a sufficient number write immediately making the request, it will be possible to have accommodations provided at Winthrop Beach at the time of the session, although ordinarily the hotels there would not be opened until later in the season. Those who would like to take advantage of this privilege should write immediately to Dr. D. D. Scannell, Secretary of the Committee on Hotels, 8 The Fenway, Boston

New Western Railroad Rates.

Dr. John C. Munro, Chairman of the Committee on Transportation, sends the following additional information:

The Western Passenger Association has granted a rate of one fare, plus $1.00, for the round trip from points on the Missouri River, and east thereof; and a rate of one fare, plus $2.00, for the round trip from points west of the Missouri River. Tickets will be sold June 1-4, and also on May 31 from Missouri River points.

The Southeastern Passenger Association has granted the same rates as announced for other territory, one fare, plus $1.00, for the round trip; tickets to be sold beginning May 31. Stop over at New York will be allowed on return ticket as on other lines.

Date of Entering New England Modified.

A slight modification of the going regulations is the following: The Trunk Line Association will issue tickets good on going passage from New York City on the 11 o'clock and midnight trains, June 1, and on Long Island Sound steamers on the evening of June 1. By previous announcement tickets were not to be good to enter New England until June 2.

Marriages

MAURICE B. WOLFF, M.D., Chicago, to Miss May Steiner of St. Louis, May 15.

C. P. BROKAW, M.D., to Miss Mattie E. Wiggins, both of Dalhart, Texas, May 10.

W. OTWA LEE, M.D., Danville, Va., to Miss Ethel Wood, at Pelham, Va., May 9.

PAUL J. BURRELL, M.D., Winslow, Ill., to Miss Leda Smith of Cadiz, Miss., recently.

TONY EDWARD HUNTER, M.D., to Miss Eva May Stewart, both of Versailles, Ind., May 1.

LEWIS A. MOORE, M.D., Tower, Minn., to Miss Catherine Walter of Monroe, Wis., May 1.

THOMAS ST. CLAIR, M.D., Latrobe, Pa., to Miss Emma Howard of Hagerstown, Md., May 2.

HENRY COWLES RUCKER, M.D., Stonega, Va., to Miss Lillian Rucker of Richmond, Va., April 28.

GEORGE EDWARDS TOOLEY, M.D., Washington, Kan., to Miss Ida Erb of Kansas City, Mo., May 9.

EDGAR L. BOONE, M.D., New Martinsville, W. Va., to Miss Marie Ball of Elizabeth, W. Va., May 4.

GEORGE BYRON THOMPSON, M.D., Kansas City, Mo., to Miss Olive Bright of Los Angeles, Cal., May 15.

SAMUEL J. WYLIE, M.D., Columbus, Ga., to Miss Bessie Dudley of Girard, Ala., in Columbus, Ga., May 3.

JOHN B. STEELE, M.D., Chattanooga, Tenn., to Miss Elizabeth N. McAnally, of Huntsville, Ala., May 2.

GEORGE E. THOMPSON, M.D., Green Bay, Wis., to Miss Flora M. Dart of De Pere, Wis., in Menominee, Wis., May 2.

MAXIMILLIAN MONTROSE COOK, M.D., Columbia, Tenn., to Miss Minnie Mai Wadley of Franklin, Tenn., May 3.

WILLIAM EDWARD REED, M.D., Nashua, N. H., to Miss Elizabeth May Hankin of Clinton, Mass., at Saxonville, Mass., May 2.

Deaths

Bleecker Lansing Howey, M.D. Geneva (N. Y.) Medical College, 1843; surgeon of the One Hundred and Thirty-sixth New York Volunteer Infantry; later surgeon U. S. V., brigade surgeon and division surgeon of the Eleventh Army Corps; medical purveyor and hospital inspector of the Army of the Cumberland and medical director of the Twentieth Army Corps during the Civil War; a member of the American Medical Association; formerly vice-president and president of the New York State Medical Association; formerly president of the Monroe County (N. Y.) Medical Society and honorary member of the Rochester Pathological Society; censor of the Buffalo Medical College for 30 years, and formerly censor of the Syracuse University Medical Department; one of the oldest and most prominent physicians of Rochester, N. Y., died at his home in that city, May 5, after an illness of several months, aged 89.

James Winchell Coleman Ely, M.D. Harvard University Medical School, Boston, 1846, of Providence, R. I., who was tendered a banquet, April 27, in honor of the sixtieth anniversary of his entrance into practice; a member of the staff of Dexter Asylum for 16 years; a member of the Rhode Island Medical Society for 58 years, and its treasurer, secretary and president, and censor at various times; one of the original members, first secretary and once president of the Providence Medical Association; city physician of Providence for 16 years; consulting physician of the Butler Hospital for the Insane; attending and consulting physician of the Rhode Island Hospital for 36 years; a member, secretary and president of the Rhode Island Historical Society, and a member of the American Academy of Medicine, died at his home in Providence, May 6, from pneumonia, after an illness of five days, aged 85.

William H. Crane, M.D. Medical College of Ohio, Cincinnati, 1893; professor of medical chemistry in his alma mater; city chemist and bacteriologist of Cincinnati, and one of the best known of the younger physicians of that city, died suddenly from cerebral hemorrhage, May 7, while speaking before the Cincinnati Academy of Medicine, aged 37. Resolutions setting forth the loss sustained at the death of Dr. Crane were adopted May 8 at a special meeting of the faculty of the university medical department.

William Clarence Egan, M.D. Rush Medical College, Chicago, 1875; a veteran of the Civil War; a member of the Iowa State Medical Society, and some-time physician of Atlantic and of Cass County, died at his home in Atlantic, May 1, from valvular heart disease after a prolonged illness, aged 59. At a meeting of the physicians of Atlantic, May 2, resolutions of respect to the memory of Dr. Egan were unanimously adopted.

Esther H. Hawkes, M.D. New England Female Medical College, Boston, 1857; a nurse and surgeon during the Civil War, and for many years in charge of the work of the Freedman's bureau at Charleston, S. C.; a member of the Gynecological Society of Boston, the New England Hospital Medical Society and the Lynn Medical Fraternity, died at her home in Lynn, Mass., May 6, after a long illness, aged 72.

George W. Porter, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1851; formerly of Harrisburg, Pa.; postmaster of the city in 1867; for 13 years trustee of the State Hospital for the Insane, Harrisburg, and for several years prison inspector and secretary of the board, died May 7, at the home of his daughter in Spring Lake, N. J., aged 81.

John Dudley Meng, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1877; for four years health officer of Chico, Cal., died at the Florence Nightingale Sanatorium, Chico, April 25, from cerebral hemorrhage, after an illness of only a few hours, aged 53. At a special meeting of the physicians of Chico, April 26, resolutions of respect and sympathy were adopted.

Arthur Manley Burns, M.D. Bellevue Hospital Medical College, New York City, 1871; formerly of Brooklyn, N. Y., where he was a member of the board of health and health officer for the Greenpoint district and for six years physician of Kings County; later a resident of Alaska, died at his home in San Diego, Cal., April 26, after an illness of twelve weeks, aged 64.

Onan B. Gross, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1878; a member of the Camden City and Camden County (N. J.) Medical Society, and of the Medical Society of the State of New Jersey; one of the visiting surgeons at the Cooper Hospital, died at his home in Camden, May 9, from cirrhosis of the liver, aged 55.

James P. Hughart, M.D. New York University, New York City, 1878; a member of the American Medical Association; a Confederate veteran; president of the board of health of Hin

ton, W. Va., died at his home in that place, from malignant disease of the mouth, for which operation was performed which checked the malady for a time only, April 28, aged 65.

J. M. Boyd, M.D., founder of Baker City, Ore.; sheriff of Baker County for two terms, and for several years United States marshal for the eastern district of Oregon; for many years health officer of Walla Walla, Wash., and from 1886 to 1877 mayor of that city, died at his home, March 20, from paralysis, after a long illness, aged 68.

Philander Collard, M.D. College of Physicians and Surgeons in the City of New York, 1883; a member of the Medical Society of the State of New York and the Westchester County Medical Society, and once its president; a member of the staff of the Ossining Hospital, died at his home in Ossining, N. Y., from diabetes, May 7, aged 60.

Julius A. Johnson, M.D. University of Maryland School of Medicine, Baltimore, 1871; a member of the American Medical Association, Medical and Chirurgical Faculty of Maryland, and president of the Talbot County Medical Society; county jail physician and pension examining surgeon, died at his home near Easton, Md., May 9, aged 56.

Edwin I. Shores, M.D. Bellevue Hospital Medical College, New York City, 1880; for 12 years surgeon at the Soldiers' Home, Hampton, Va.; surgeon during the Spanish-American War; a member of the Schenectady County (N. Y.) Medical Society, died at his home in Schenectady, May 5, after an illness of three months, aged 51.

John Barry, M.D. Medical College of Virginia, Richmond, 1864; assistant surgeon of the Forty-second Mississippi Infantry, C. S. A., during the Civil War; a member of the Orange County (N. C.) Medical Society, died at his home in Chapel Hill, N. C., March 6, from angina pectoris, after a brief illness, aged 68.

Lawson Allen Long, M.D. Berkshire Medical College, Pittsfield, Mass., 1847, who is said to have warned President Lincoln of the plot for his assassination in 1861, died at his home in Holyoke, Mass., May 6, aged 78. He is said to have been one of the first to note that cholera and yellow fever were filth diseases.

Biddle Arthurs, M.D. Jefferson Medical College, Philadelphia, formerly one of the prominent surgeons of Pittsburg, and a member of the Allegheny County Medical Society, died at his home in Philadelphia, April 19, from cerebral hemorrhage, after an illness of three days, aged 78.

Carrie M. Hayward, M.D. Northwestern University, Women's Medical School, 1897, of Chicago, for eight years a member of the staff of the Mary Thompson Hospital for Women and Children, died in Malden, Mass., May 11, from cancer, after a long illness, aged 35.

Ralph R. Thompson, M.D. Medical College of Indiana, Indianapolis, 1900, of Mooresville, Ind., examining surgeon for the relief department of the Pennsylvania Railroad in Chicago, died at the Gault House in that city, May 4, from acute nephritis, aged 31.

Timothy G. Herrick, M.D. Harvard University Medical School, Boston, 1900, an interne in the Boston City Hospital for three years after his graduation, died at his home in Newport, N. H., from tuberculosis, after an illness of three years, aged 31.

James Ostermann, M.D. Baltimore Medical College, 1904, assistant physician of Salt Lake County, died at the Latter Day Saints' Hospital, Salt Lake City, Utah, May 2, from Bright's disease, after a long illness, aged 32.

John R. Keating, M.D. New York University, New York City, 1857, a Confederate veteran, for many years alderman and mayor of Cleburne, Texas, died at his home in that city, May 1, after an illness of two days, aged 71.

George Cyrus Brown, M.D. Jefferson Medical College, Philadelphia, 1874, for several years health officer of Long Beach, Cal., and a member of the Long Beach Medical Society, died at his home in that city, April 28, aged 57.

R. F. Hall, M.D. Jefferson Medical College, Philadelphia, 1855, a practitioner of Meriwether County, Ga., for more than 50 years, died at his home in Greenville, Ga., April 28, after an illness of eight weeks, aged 76.

Arthur Lee Post, M.D. Johns Hopkins University Medical Department, Baltimore, assistant professor of bacteriology in the West Virginia University, Morgantown, died suddenly in Easton, Md., May 9, aged 56.

Clarence E. Hauver, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1888, of Greenville, Ohio, died in the Memorial Hospital, Piqua, Ohio, May 5, from locomotor ataxia, after an illness of 11 years, aged 48.

A. W. Burten, M.D. Louisville (Ky.) Medical College, of Birmingham, Ala., after killing his wife and fatally wounding A. G. Thaxton, a dentist of Pratt City, Ala., cut his throat and died immediately, April 15.

Naomi A. Pierce Collins, M.D. Women's Medical College, Chicago, 1885, for many years a practitioner of Decatur, Ill., died at her home in Mahomet, Ill., May 3, after an illness of several weeks, aged 44.

David L. De Myers, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1891, died from smallpox, April 29, after an illness of 12 days, near his home at Pearce Station, Tenn., aged about 50.

Edgar L. Draper, M.D. Harvard University Medical School, 1867, surgeon in the Navy during the Civil War, died at his home in Holyoke, Mass., May 6, after an invalidism of a year, aged 64.

William J. Keaney, M.D. Homeopathic Medical College of Missouri, St. Louis, 1888, died at his home in De Soto, Mo., May 3, from ptomain poisoning, after an illness of five days, aged 36.

Delos H. Mann., M.D. Albany (N. Y.) Medical College, 1848; prominent as a physician and as a total abstinence advocate, died at his home in Brooklyn, N. Y., May 2, from pneumonia, aged 70.

Alexander Allan Henderson, M.D. McGill University, Medical Department, Montreal, 1870, died at his home in Ottawa, Ont., May 3, from heart disease, after an illness of six months, aged 60.

Charles H. Holden, M.D. University of Edinburgh, Scotland, 1869, died at his home in St. John, N. B., May 2, from pneumonia, following influenza, after a brief illness, aged 61.

O. D. Fitzgerald, M.D. St. Louis Medical College, 1872, of Los Angeles, Cal., died at the Good Samaritan Hospital in that city, April 28, after an illness of several months, aged 66.

Lewis T. Gandy, M.D. Jefferson Medical College, Philadelphia, 1869, of Chili Center, N. Y., died at the City Hospital, Rochester, N. Y., three days after an operation, aged 58.

Robert Baxter Calvin, M.D. Western Pennsylvania Medical College, Pittsburg, was found dead in bed in his office at Jamestown, Pa., February 19, aged 30.

Edwin H. Chilcote, M.D. Cincinnati College of Medicine and Surgery, 1871, died suddenly from heart disease, at his home in Bloomdale, Ohio, May 4, aged 57.

Richard A. Martin, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1860, died at his home in Philadelphia, April 22, aged 71.

Jonathan G. Helton, M.D. Geneva (N. Y.) Medical College, 1846, of Minneapolis, Minn., died suddenly on a street car in that city, April 28, aged 81.

S. D. McCauley, M.D. Medical Department of Willamette University, Salem, Ore., 1868, died at his home in Ellensburg, Wash., January 21, aged 85.

Marshall K. Sturdivant, M.D. Tulane University of Lousiana, Medical Department, New Orleans, 1873, died at his home in Avinger, Texas, April 26.

Basil B. Crawford, M.D. University of Maryland School of Medicine, Baltimore, 1851, died at his home near Laytonsville, Md., May 4, aged 73.

John W. Winley, M.D. College of Physicians and Surgeons, Baltimore, 1892, died at his home in Benton, Pa., May 9, after a lingering illness.

Samuel Ritter Ickes, M.D. Cleveland Medical College, 1875, formerly of Harrisburg, Pa., and Brantford, Ont., died in Seattle, Wash., April 27.

Thomas H. Rucker, M.D. (County License, Indiana), 1897, died at his home in Arlington, Ind., April 21, after a long illness, aged 66.

Frank Nelson, M.D. (County License, Indiana), 1897, died at his home in Hazelton, Ind., from cerebral hemorrhage, April 29, aged 75.

Charles W. Weaver, M.D. Hahnemann Medical College, Philadelphia, 1884, died May 9 at his home in Taneytown, Md., aged 46.

Oscar H. Bradley, M.D. Castleton (Vt.) Medical College, 1851, died at his home in East Jaffrey, N. H., March 29, aged 80.

Levi Tharp, M.D. (County License, Indiana), 1897, died at his home in Boyleston, Ind., from cerebral hemorrhage, May 8, aged 47.

Charles S. Beck, M.D. Pennsylvania Medical College, Philadelphia, 1853, died in Wilkesbarre, Pa., from uremia, Dec. 25, 1905.

Louise F. Parker, M.D. New England Female Medical College, Boston, 1861, one of the first women practitioners of New England, died at her home in South Weymouth, Mass., May 9, aged 93.

A. R. Clark, M.D. (Examination, Missouri), died recently from cancer of the stomach at Pittsburg, Kan.

Deaths Abroad.

V. Vleminckx, M.D., president of the National Academy of Medicine of Belgium, aged 80.

A. Haslund, M. D., professor of dermatology at Copenhagen, aged 62.

L. Kleinwachter, M.D., professor of gynecology at Prague and Innsbruck until 1881, when he was obliged to give up teaching on account of his alleged atheism, died April 17, aged 67. His name is familiar to readers of journals devoted to obstetrics and gynecology. He resided and practiced at Czernowitz, in Austria.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

STATES RECIPROCATING WITH MINNESOTA.

CHICAGO, May 3, 1906.

To the Editor:—What states reciprocate with the state of Minnesota, based on an examination taken before the State Board of Medical Examiners of the state of Minnesota? C. C.

ANSWER.—Illinois Iowa, Kansas, Michigan, Maine, Maryland, Missouri, Nevada, New Jersey, Nebraska, Ohio, South Carolina, South Dakota, Wisconsin and Wyoming.

REGISTRATION REQUIREMENTS.

GRAND RAPIDS, WIS., May 5, 1906.

To the Editor:—What are the requirements for registration in medicine in California and in Washington? W. M. R.

ANSWER.—Both states require the passing of an examination, besides presentation of a diploma from a recognized medical college.

PADUCAH, KY., May 5, 1906.

To the Editor:—In what states can a physician register without examination? C. E. W.

ANSWER.—If he is a graduate of a recognized medical college, in Nevada and New Mexico, and with other restrictions, in Colorado.

CARDIO-RESPIRATORY MURMUR.

PHILADELPHIA, May 1, 1906.

To the Editor:—Will you kindly inform me in "Notes and Queries" of the significance of the so-called cardio-respiratory murmur, that is, a cardiac murmur heard only during inspiration?

Some authorities deny that it is pathologic, while others say that it is probably due to phthisis. In cases in which I discovered it there was no evidence of any abnormality in lungs on close examination. NAGLOC.

ANSWER.—The so-called cardio-respiratory murmur is not an uncommon phenomenon in perfectly healthy individuals. It is presumably produced by some distortion or narrowing of the blood supply at the base of the heart when the thorax is expanded. Consequently, vessels of v It may also occur in a variety of mediastinal lesions, in Arditis, etc. Its exact causation is not understood nor pleuro-peric Mo finite known in regard to its clinical significance. is anything de. C. L.

CAUSES OF IRREGULAR HEART ACTION.

BINGHAMTON, N. Y., April, 1906.

To the Editor:—Refe curring to my letter published in THE JOURNAL, April 7, p. 1048, I desire to state that none of the causes mentioned in your reply exist in this case. You may be interested to learn, as I am to report, that for the past two or three weeks the heart has resumed its normal action and that there are no more intermissions of the pulse (which has been marked and continuous for more than two years). I wish I could have an explanation of the cause. M.

THE MOSQUITO IN REFERENCE TO MALARIA.

MOUNT PISGAH, ARK., May 3, 1906.

To the Editor:—Please tell me the best work on the mosquito with reference to malaria. Can malaria be transmitted in any other way than by the mosquito? I have the works of Boston, Osler and Anders, and simply want a more detailed work.

S. T. TAPSCOTT.

ANSWER.—So far as now known, he only way in which malaria is naturally transmitted is by the mosquito. There are a number of short books dealing with malaria and mosquitoes, all of which we shall not attempt to enumerate. Mention may be made, however, of L. O. Howard's book on "Mosquitos," in which their relation to malaria is discussed fully; of Celli's monograph on malaria, which is translated from the Italian, and in which not only the rôle of the mosquito is considered, but also the economic side of malaria, especially so far as Italy is concerned; and of Ross' discourse before the Royal Institution of Great Britain (March 2, 1900), in which the story of the discovery by Ross himself of the actual rôle of the mosquito to malaria is told in a most interesting manner. This discourse is reprinted in the form of a little booklet (George R. Philip & Son, 32 Fleet Street, London, and Philip, Son & Nephew, 75 South Castle Street, Liverpool). In Manson's Lectures on Tropical Diseases, recently reviewed in THE JOURNAL, is also an excellent account of the malaria parasites as they occur in man and mosquitoes. There are numerous other monographs than those here mentioned, a full list of which any medical book-seller can furnish, but we believe that Ross' discourse merits special emphasis as the nucleus for further reading on malaria and mosquitoes.

THE PHYSICIAN AND THE AUTOMOBILE.

DR. R. L. HOYT, Oriole, Md., writes: "I am contemplating the purchase of an automobile and awaited the appearance of your automobile number, April 21, with interest. After reading it carefully I am in just about the same position as before, namely, I can not decide which machine will do the service I desire. If you will help me out I will be under lasting obligation to you. I wish you would refer this letter to some members of the profession who have experience with conditions such as I describe below, with the request that they write me. I am doing a country practice requiring the services of three good horses in the summer and four in the winter months, with an average daily drive of about fifty to sixty miles. My work is entirely in the country, as the village in which I reside is of about 600 population, but the road conditions are the same as the surrounding territory. From April 1 to November 1 our roads are in good condition, the soil being clay and the roads hard. From November 1 to April 1 they are awful, being simply a clay muck, full of holes and ruts. In winter it is about all two good horses can do to pull a light buggy at a trot. Thank you in advance for any assistance you can render me in this matter."

DR. WILLIAM STANTON, Webster, N. J., says: "I was very much interested in the automobile articles. It seems strange to me that the manufacturers all seem to strive to make an automobile resemble a trolley or steam car in size, weight and seating capacity. In horse-frightening qualities, noise and dust-raising they have the trolley outdone, and are a close second to it in cost, speed and in requiring a hard smooth track. Now, if some manufacturer would turn his skill and attention to produce an automobile resembling a stanhope or carriage in size, weight, appearance and comfort he could doubtless give it wheels adapted to the highway, a motor simple enough to be understood by a man of ordinary mechanical ability, and strong enough to propel it over all ordinary country roads with reasonable speed, safety and certainty. Probably he could sell it for the cost of two good horses, the necessary carriages, harnesses, etc., and make a good profit. I believe there is need of such an automobile and that the man who brings out a practical auto-carriage for country roads will confer a lasting favor on the medical profession and will find himself deluged with orders."

DR. T. M. BRIDGES, Idaho Falls, Idaho, writes: "I have read with interest the interesting articles in THE JOURNAL, April 21, and I wish to ask about solid rubber tires. I have used a runabout for two years with the utmost satisfaction and practically no tire troubles until recently. I have long contemplated putting on solid tires, and will appreciate your advice as to a reliable maker. I do an immense amount of work and have never been towed in or had an accident delaying me more than half an hour. Our roads, however, are perfect almost throughout the year."

DR. S. S. DAVIS, Boonsboro, Md., writes: "Your editorial in THE JOURNAL, April 21, in regard to automobiles for physicians was very opportune and pertinent. I keep three horses and numerous vehicles, and though this liver(y) of mine is kept rather active, I am fast becoming automo-billous. I have no doubt there are thousands of physicians like myself, waiting for that machine to turn up—the right kind at the right price."

DR. J. A. KINIGAN, New York, writes: "For the past three years I have been making a study of the automobile as applied to the use of the doctor. The symposium on this subject published in THE JOURNAL is the most interesting and instructive dissertation on the automobile that I have come across."

DR. J. G. HUIZINGA, Grand Rapids, Mich., says: "Up to date the machine is not sufficiently reliable. One never knows when a breakdown is going to occur, and it often takes place at most inopportune times. The machines are being made more perfect every year, but perfection is still a future consideration."

DR. DE FOREST LAMBERT, Salem, Mass., writes: "In regard to my ideal car (described in THE JOURNAL, April 21), I have interested a machinist in my specifications, and he already has plans under way for such a car. There are a number of physicians about here who desire such a car, believing that it will to a large extent solve the problem of a doctor's car. If those interested in this type of machine to the extent of desiring one, would write me, some idea of the demand for it could be had and its production hastened. The price would be, probably, in the vicinity of $800, depending on number built. I am informed that the company has plenty of money, but will not place the machine on the market unless a sufficient number will express a demand for it."

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending May 12, 1906:

Lippitt, Wm. F., surgeon, resignation of his commission as an officers of the Army has been accepted by the President, to take effect, May 26, 1906.

The following named assistant surgeons will proceed at once to San Francisco, Cal., and report in person to the commanding general, Pacific Division, for temporary duty: Captains Edward F. Geddings, Leigh A. Fuller, Frederick M. Hartsock, Walter D. Webb, David Baker; First Lieutenants George H. Scott, Roger Brooke, Jr., Wm. H. Moncrelf, Nelson Gapen, Compton Wilson.

Hallock, H. M., surgeon, sick leave of absence further extended one month.

Bushnell, Geo. E., surgeon, detailed to represent the Medical Department of the Army at the meeting of the National Association for the Study and Prevention of Tuberculosis, at Washington, D. C., May 16 to 18, 1906.

Wertenbaker, Clark L., contract surgeon, left Madison Barracks, N. Y., on leave of absence.

McCord, Donald P., contract surgeon, returned to Fort Rodman, Mass., from leave of absence.

Hereford, John R., contract surgeon, left Fort Moultrie, S. C., and arrived at Fort Caswell, N. C., for temporary duty.

Kelly, John P., contract surgeon, left Presidio of Monterey, Cal., and arrived at San Francisco, Cal., on duty with the 20th Infantry.

Koyle, Fred T., contract surgeon, left Fort McDowell, Cal., and arrived at Fort Mason, Cal., on duty with the 22d Infantry.

Hayes, Melville A., contract surgeon, left Vancouver Barracks, Washington, and arrived at Fort Casey, Washington, for temporary duty.

Gardner, Fletcher, contract surgeon, left Fort Michie, N. Y., and arrived at Fort H. G. Wright, N. Y., for temporary duty.

Griswold, W. Church, contract surgeon, returned to Fort Dupont, Del., from leave of absence.

Rietz, Hugo C., dental surgeon, left Fort Thomas, Ky., and arrived at Fort Wayne, Mich., for duty.

Porter, Elias H., contract surgeon, ordered to duty with troops in Yosemite National Park, Cal.

Kean, Jefferson, Woodruff, Charles E., and Lynch, Charles, surgeons, detailed to represent the Medical Department of the Army at the 57th annual meeting of the American Medical Association.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending May 12, 1906:

Old, E. H. H., asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the Naval Hospital, Canacao, P. I., sailing from San Francisco, May 25.

Steele, J. M., Medical Inspector, detached from the *Brooklyn* and ordered home to wait orders.

Brown, E. M., P. A. surgeon, ordered to the Naval Hospital, New York, N. Y.

Dorsey, B. H., asst.-surgeon, ordered to the *Lancaster*.

Belknap, J. L., asst.-surgeon, detached from the *Brooklyn* and ordered to the *Kentucky*.

Randall, J. A., asst.-surgeon, detached from the *Kentucky* and ordered home to wait orders.

Bogan, F. M., P. A. surgeon, ordered to the *Marietta*, when that vessel is placed in commission.

Grieve, C. C., asst.-surgeon, detached from the *Wilmington* and ordered home.

Rennie, W. H., asst.-surgeon, detached from the *Elcano* and ordered home.

Verner, W. W., asst.-surgeon, detached from the *Wisconsin* and ordered home.

Wikes, G. L., asst. surgeon, detached from the *Ohio* and ordered to the *Wilmington*.

Sellers, F. E., asst.-surgeon, ordered to the *Ohio*.

Olsen, G. M., asst.-surgeon, ordered to the *Wisconsin*.

Eytinge, E. C. J., asst.-surgeon, ordered to the *Elcano*.

Blackwood, N. J., surgeon, detached from the Naval Torpedo Station, Newport, R. I., and ordered to the *New Jersey*, when that vessel is placed in commission.

Morris, L., surgeon, ordered to the Naval Torpedo Station, Newport, R. I., and to additional duty in attendance on Navy and Marine officers, not otherwise provided at that station with medical aid.

Hathaway, G. S., asst.-surgeon, detached from the *Constellation* and ordered to the *New Jersey* when the latter vessel is placed in commission.

Cole, H. W., Jr., asst.-surgeon, detached from the *Maine* and ordered to the *Alabama*.

McLean, A. D., asst.-surgeon, detached from the *Alabama* and ordered home to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 9, 1906:

Bailhache, P. H., surgeon, detailed to represent the service at the meeting of the American Medical Association, to be held in Boston, Mass., June 5-8, 1906.

Meade, F. W., surgeon, directed to report in Washington, D. C., for special temporary duty.

Carmichael, D. A., surgeon, granted leave of absence for seventeen days, from May 17, 1906.

Brooks, S. D., surgeon, relieved from "waiting orders" and directed to proceed to San Diego, Cal., and assume command of service at that port.

Woodward, R. M., surgeon, detailed to represent the service at the meeting of the American Medical Association, to be held in Boston, Mass., June 5-8, 1906.

Mathewson, H. S., P. A. surgeon, granted leave of absence for two months, from June 1, 1906.

Earle, B. H., P. A. surgeon, directed to report in Washington, D. C., for special temporary duty.

Frost, W. H., asst.-surgeon, relieved from duty at Ellis Island, N. Y., and directed to report to the medical officer in command, Baltimore, Md., for duty and assignment to quarters.

Addis, W. E., acting asst.-surgeon, granted leave of absence for four days, from May 3, 1906, under Paragraph 210 of the Regulations.

Hallet, E. B., acting assistant surgeon, granted two days' leave of absence from May 6, 1906.

Safford, M. V., acting assistant surgeon, granted leave of absence for three days from April 30, 1906, under paragraph 210 of the regulations.

McKay, M., Pharmacist, granted leave of absence for one day, May 5, 1906.

BOARDS CONVENED.

Board convened to meet in Washington, D. C., May 9, 1906, for the purpose of making sanitary inspection of certain public buildings. Detail for the Board: Surgeon F. W. Meade, chairman; P. A. Surgeon B. H. Earle, recorder.

Board convened to meet at Baltimore, Md., May 10, 1906, for the purpose of conducting physical examinations of cadets of the Revenue Cutter Service. Detail for the Board: Surgeon L. L. Williams, chairman; Asst.-Surgeon W. H. Frost, recorder.

Board convened to meet in Washington, D. C., May 10, 1906, for the purpose of conducting physical examinations of candidates for appointment as cadets in the Revenue Cutter Service. Detail for the Board: Asst. Surgeon-General W. J. Pettus, chairman; Asst. Surgeon-General J. M. Eager, recorder.

Board convened to meet in Washingtoo, D. C., May 7, 1906, for the purpose of conducting physical examinations of an officer of the Revenue Cutter Service. Detail for the Board: Asst.-Surgeon-General J. W. Kerr, chairman; Asst.-Surgeon J. W. Trask, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 11, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, April 21-28, 4 cases.
District of Columbia: Washington, April 21-May 5, 4 cases.
Georgia: Augusta, April 29, 5 cases; April 23-May 7, 4 cases.
Indiana: Indianapolis, April 1-8, 3 cases; April 29-May 6, 2 cases.
Louisiana: New Orleans, April 21-May 5, 26 cases.
Massachusetts: Boston, April 28-May 5, 1 case.
Mississippi: Natchez, April 29-May 6, 3 cases.
Missouri: St. Louis, April 28-May 5, 1 case.
Nebraska: Omaha, April 28-May 5, 2 cases.
North Carolina: General, March 1-31, 10 cases.
North Dakota: General, March 1-31, 3 cases.
Ohio: Cincinnati, April 27-May 4, 10 cases, 1 death.
Oklahoma Territory: Oklahoma City, April 21-May 5, 31 cases.
South Carolina: Greenville, April 21-28, 1 case.
Tennessee: Knoxville, April 28-May 5, 1 case.
Utah: Ogden, April 1-30, 4 cases.
Virginia: Petersburg, March 26-April 26, 6 cases; Roanoke, April 1-30, 16 cases.
Wisconsin: Appleton, April 28-May 5, 1 case; Green Bay, 1 case; La Crosse, 1 case; Marinette, April 21-28, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, March 10-17, 2 cases, 2 deaths.

SMALLPOX—FOREIGN.

Africa: Monrovia, March 1-31, 3 cases.
Austria: Trieste, March 31-April 7, 1 case.
Canada: Toronto, April 21-28, 1 case.
China: Hongkong, March 17-24, 19 cases, 5 deaths; Shanghai, March 24-31, present.
Germany: Bremen, March 31-April 21, 2 cases, 1 death.
Gibraltar: April 15-22, 3 cases.
Great Britain: Bristol, April 14-21, 2 cases; Newcastle-on-Tyne, 3 cases.
Greece: Athens, April 14-21, 3 deaths; Patras, March 20-27, 2 cases, 2 deaths.
India: Bombay, April 3-10, 23 deaths; Calcutta, March 24-31, 224 deaths; Karachi, April 1-8, 34 cases, 17 deaths; Madras, March 31-April 6, 46 deaths; Rangoon, March 24-31, 62 deaths.
Italy: General, March 22-April 19, 176 cases.
Mexico: Vera Cruz, April 21-28, 2 cases.
The Netherlands: Rotterdam, April 14-21, 1 case.
Spain: Barcelona, April 10-20, 7 deaths; Seville, March 1-31, 15 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, March 18-April 15, 11 cases, 7 deaths.
Honduras: Chaloma, April 21, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Provinces, March 10-17, 116 cases, 101 deaths.
India: Bombay, April 3-10, 35 deaths; Calcutta, March 24-31, 31 deaths; Madras, March 31-April 6, 1 death; Rangoon, March 24-31, 3 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, March 10-17, 1 case, 1 death.

PLAGUE—FOREIGN.

Australia: Freemantle, March 3-24, 3 cases, 1 death; Geraldton, 2 cases, 1 death; Sydney, March 10-17, 7 cases.
Brazil: Rio de Janeiro, April 1-15, 3 cases, 1 death.
India: Bombay, April 3-10, 782 deaths; Calcutta, March 24-31, 232 deaths; Karachi, April 1-8, 150 cases, 126 deaths; Rangoon, March 24-31, 86 deaths.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

American Gynecological Society, Hot Springs, Va., May 22.
South Dakota State Medical Association, Watertown, May 22-24.
Connecticut State Medical Society, New Haven, May 23-24.
Indiana State Medical Association, Winona Lake, May 23-25.
Michigan State Medical Society, Jackson, May 23-25.
Med. Soc. of State of North Carolina, Charlotte, May 29-31.
Rhode Island Medical Society, Providence, May 31.
American Dermatological Assn., Cleveland, May 30-June 1.
American Pediatric Society, Atlantic City, May 30-June 1.
American Surgical Association, Cleveland, May 30-June 1.
American Laryngological Assn., Niagara Falls, May 31 June 2.
American Assn. of Genito-Urinary Surgeons, New York, June 1-2.
American Academy of Medicine, Boston, June 2-4.
Amer. Assn. of Life Insurance Exam. Surgeon, Boston, June 4.
American Gastro-Enterological Assn., Boston, June 4.
American Urological Assn., Boston, June 4-5.
American Proctologic Society, Boston, June 5-6.
American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-13.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springs, June 20-22.
Medical Society of New Jersey, Atlantic City, June 19-21.
State Medical Society of Wisconsin, Milwaukee, June 27-29.
American Ophthalmological Society, New York City, June 28-29.

COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION.

Second Annual Conference, held in Chicago, May 12, 1906.

There were present delegates from state examining boards, state medical societies, government medical services, colleges of liberal arts and other organizations, as follows:

State Delegates: Colorado, S. D. Van Meter, Denver; Illinois, Harrison W. Hipp, Chicago; Indiana, J. C. Webster, Lafayette, W. A. Spurgeon, Muncie; Minnesota, W. S. Fullerton, St. Paul; Mississippi, E. J. Johnson, Yazoo City; Missouri, Frank J. Lutz, St. Louis; Nebraska, S. K. Spalding, Omaha; New York, W. W. Potter, Buffalo and Charles F. Wheelock, Albany; North Dakota, H. M. Wheeler, Grand Forks; Ohio, A. Ravogli, Cincinnati and H. E. Beebe, Sidney; South Dakota, Stephen Olney, Sioux Falls; Tennessee, L. E. Burch, Nashville; Washington, P. B. Swearingen, Tacoma; West Virginia, M. H. Proudfoot, Rowlesburg; Wisconsin, W. T. Sarles, Sparta, A. P. Andrus, Ashland, and J. V. Stevens, Jefferson.

State Medical Societies: Indiana, J. B. Berteling, South Bend, and L. F. Page, Indianapolis; Kentucky, W. H. Wathen, Louisville; Missouri, R. M. Funkhouser, St. Louis; Minnesota, F. F. Wesbrook, Minneapolis; Illinois, J. W. Pettit, Ottawa, and D. B. Phemister, LaGrange.

American Medical Association, Geo. H. Simmons, Chicago; Committee on Reciprocity, American Medical Association, William L. Rodman, Philadelphia; Association of American Medical Colleges, F. C. Zapffe, Chicago; National Confederation of Eclectic Medical Colleges, E. J. Farnum, Chicago, and E. G. Trowbridge, Chicago; American Medical Editors' Association, W. C. Abbott, Chicago. William F. Waugh, Chicago; Public Health and Marine-Hospital Service, Passed Asst. Surg. G. B. Young, Chicago.

Others present were:

Dr. B. D. Myers, Indiana University, Bloomington; Professor J. H. T. Main, President of Iowa College, Grinnell; Dr. S. W. Lambert, Columbia University, New York City; Dr. Frederic S. Dennis, Cornell University, New York City; Dr. Chas. R. Bardeen, University of Wisconsin, Madison; Dr. John M. Dodson, Rush Medical College, Chicago; Dr. F. C. Waite, Western Reserve University, Cleveland; Professor I. B. Burgess, Morgan Park Academy, Morgan Park, Illinois.

Full reports of proceedings will appear in the next issue of THE JOURNAL

FIFTEENTH INTERNATIONAL MEDICAL CONGRESS.

Held in Lisbon, Portugal, April 19-26, 1906.

[Special Correspondence from Dr. Nicholas Senn.]

ALGIERS, AFRICA, April 27, 1906.

The Lisbon International Medical Congress has passed into history. Its successes and shortcomings have become matters of record. It was safe to predict that the attendance would be unusually small and that the scientific work would fall short of the average of these triennial great gatherings of physicians from all parts of the globe. The entire number of delegates registered did not exceed 1,600. It could readily be foreseen that two Latin congresses in succession could not fail to reduce the actual attendance to a minimum. A very large majority of the members present were Spaniards, Portuguese and delegates from countries in which the Latin languages are spoken. The United States contributed about 50. Germany was especially well represented in the military section. Few of those from abroad who participated in the Madrid Congress repeated their attendance this year. Most of them had learned from sad experience to dread the miserable railway service and the Babylonic confusion of languages in the general sessions, section work and social functions. The two magnets which attracted not a few to this congress were the beautiful city of Lisbon and the charming Queen Amelia, whose beauty, charity and profound learning have been made known to the outside world through magazine articles and the columns of the public press.

The City of Lisbon.

The average reader accords to Naples the first place among the world's most beautiful cities. The smiling blue bay, the towering, smoking Vesuvius provide a worthy fore- and background for this proud mistress of Italy, but can not serve as a counterpart to the vastly greater picturesqueness of the city of Lisbon as compared to that of Naples. The Tagus, which here is expanded into a broad lake-like basin or quai, constitutes an immense land-locked harbor which is visited annually by 4,000 vessels from all parts of the world—compares well with the Bay of Naples in size and the beauty of its surroundings. The city itself in a dress of immaculate white rises in terraces from the border of the river and crowns the summits of the group of high hills, the highest of them capped by the ancient fortress of St. George, now garrisoned by 400 soldiers. The narrow, crooked, but clean streets communicate with a number of broad, park-like boulevards. Lisbon, although a very old city, has been rejuvenated and has kept pace with the progressive spirit of modern times. It is lighted by electricity and has an excellent water supply and system of sewerage. The numerous electric tramways find their way from the broad avenues through the narrow, irregular, serpentine streets to all parts of the city and suburbs. Many substantial modern business and government buildings impart dignity and an aspect of durability to the principal business streets.

The hotel facilities are ample and there was no undue congestion caused by the presence of the congressites which caused so many complaints during the Madrid congress. Begging and indications of abject poverty were seldom seen on the streets even in the poorest quarters of the city. Two large, clean markets are the busiest places during the early morning hours where the laboring people can supply themselves with food for the day by the outlay of a few cents, the freshest and best that the soil and sea produce. The present population is about 350,000. The people are well dressed and well behaved

Queen Amelia.

Queen Amelia is a remarkable woman physically and mentally. She is above average size and weight, and every look and movement denote a noble bearing. A scion of the noblest and most aristocratic family of France, she was trained from earliest childhood for her present exalted position. The large black eyes, firm well-formed lips, high forehead and luxuriant jet black hair, sharp, perfectly modeled nose, heavy eyebrows and long lashes, pearl-white perfect teeth, round chin, fair complexion and perfect form of face make up a picture of classic beauty. She is one of the most intellectual women of the present age. She speaks several languages, among them excellent English; is a member of the medical profession, in which she takes the keenest interest, and is a trained nurse as well. A picture in which she delights and which is very popular among her subjects is the Queen dressed in the garb of a nun rendering first aid to the wounded. The hospital and clinic for patients suffering from tuberculosis is her own creation built and maintained out of her own private means. She is the mother of two sons, the Crown Prince, now 18 years old and his brother, two years younger. She is a devoted mother giving her own attention to the education and training of her

nildren. She is very wealthy in her own right and makes free se of her wealth in relieving the sick and poor. She was the enter of attraction during the opening exercises and at the inner given by the King to the official delegates of the con-ress.

Opening Exercises.

The opening exercises took place in the great hall of the eographical Society at 2 o'clock, Thursday, April 19. The reather was perfect. Long before the hour fixed for the exer-ses the immense hall and two galleries were densely packed ith surging masses of humanity, all in gala attire. High ourt officials, ambassadors, military officers, university men in arlet gowns, lent a special attraction to the brilliant audi-nce. Shortly after 2 o'clock the strains of a military band tationed in the rear of the hall playing the national air an-ounced the arrival of the King. King and Queen, followed y the queen dowager and court officials, walked up slowly hrough the central aisle and took their places on the plat-orm. To the right of the King sat the Queen; to the left his nother, the Queen Dowager. The King is about 40 years of ge, a blonde with blue eyes, curled mustache, of average eight but very corpulent. He presided with a dignity worthy f his high position. He wore a full dress military uniform ith few decorations. The Queen wore a rich but plain gown, er only ornament being a necklace of large pearls which raced her handsome neck. The King read his address of wel-ome in French from the chair. He spoke slowly and dis-nctly, and with great earnestness. During the delivery of he speech the silence in the hall was profound, and every word oming from his lips was eagerly caught by those near enough o hear him. I was fortunate enough to be given a place on he platform within ten feet of the speaker, and hence enjoyed o the fullest extent the excellent address so magnificently elivered. I can give here only an abstract.

King's Address of Welcome.

"Madam, Ladies and Gentlemen:—In uniting in this Con-ress, so eminently scientific and humanitarian, you are per-orming a beautiful and worthy deed. First of all, let me ongratulate you most sincerely, and in the name of the ountry which now receives you and of which I am the su-reme magistrate, I extend to you all a cordial welcome. As part of the heritage which the century which we have seen orn has bequeathed to our children are these magnificent sci-ntific international gatherings. They attest the solidity and he intellectual fraternity of nations and their representatives ome to them bringing the best offerings of their work and heir activities. In truth, I repeat, in taking part in this con-ress you accomplish a good and beautiful work, because othing is more laudable than a conquest on the vast field of cience, nothing is better than the alleviation of pain and istress. Your learned assembly is about to add, I am sure, rom all I know of your past, a new and brilliant page to the ook of universal science; and the science of medicine is bout to pass in review here the thousands of soldiers whom he has temporarily detached from her powerful army in order o camp, to-day in the shadow of the flag of Portugal. ach of you comes to tell both of the severity of the strug-les and of the glory of these victories, struggles against vil, the most noble of all combats engaged in, from the eld of battle among the cannons which vomit suffering and eath, amid fire and tumult, to the serenity, the repose of the aboratory, among the enemies infinitely small, which coldly, si-ently, without noise or eclat each day strew the earth with ore dead than the most destructive implements of war.

"In the six days of the congress, the six mystic days of work, e will see, as in an immense kaleidoscope, rise up facts, ob-ervations, analyses, investigations. All these will clash gainst each other, will be grouped together and displayed in he most varied combinations, bewildering our eyes with un-xpected forms of images and thereby giving us an impression f the actual state of medical science and to your confrères he point of departure for new conceptions, for still greater onquests. From this assembly where are united so many sa-ants of such wide renown will descend as from a torch on the ighest pinnacle a flood of new light pure and white like that rom glaciers, slow in its progress but irresistible in its ac-tion, a force to drive back before its power pain and death. Your brains are the source of the stream, brilliant and pure, of the sublime torrent. By their powerful action you blaze the way, open up the bosom of Nature to reveal her secrets which will en-able you to render human life stronger and more tranquil.

"You are in a country which knows and appreciates your work, and I can assure you it would be impossible for any country to be more in sympathy with all your actions. Portugal is with you in the accomplishment of that which she knows to be her earthly duty. She never forgets that peoples are citizens of the world, and that just as the citizens of each country have a duty toward their native land, so have nations their duty toward humanity. Portugal has been one of the pioneers in the civilization of the world. She will not renounce her ancient traditions, and with them she receives you on a civilizing mission for the good of humanity. As for me personally, I am entirely in accord with you. Having been an ardent lover of the natural sciences, I admire, comprehend and respect you; and I am happy to be able to assure you that you may rely on me to do everything in my power to aid you. As for her Majesty, the Queen, my beloved consort, in the work she has done with others in the combat against tuberculosis, she has indeed given you proof of how sincerely she is in sympathy with your work. In closing, I wish to thank the committee of organization of the congress for requesting me to preside at this inaugural session. I am very grateful for this honor, and I am proud to find myself here to-day, your president, and to be able again to join my most sincere wishes to those of my country, which is proud to receive and welcome you to-day in its capital city, that the results of this congress may serve the cause of humanity. The congress is now open."

The exit of the royal party was made in the order and manner as its entrance, the audience standing and the band playing. Much of the balance of the afternoon was occupied by additional speeches of welcome and the responses to them by delegates from each country represented, the call for those being made in alphabetical order. That no country was overlooked became evident when a physician from Monaco was called on to respond and although he represented the smallest government in the world, he occupied vastly more time than Captain Richard of the Army, who responded in a few well-chosen words for the United States.

Place of Meeting.

All of the work of the congress took place in the new medical college, including registration and all executive business. The arrangements here were perfect and all officials courteous and obliging. The building is a modern one, and proved admirably adapted for the needs of the congress. Business was conducted much more promptly and systematically than at Madrid. Exhibitions were conspicuous for their absence, and physicians who came here for the purpose of collecting a supply of proprietary medicines were sadly disappointed. The well-equipped laboratories were at the disposal of the delegates, who made free use of them in making their demonstrations. As all the sections met in the same building, it was easy to go from one to the other, either for the purpose of change of subject under discussion or to meet friends. It is true if the congress had been large the space for the general meetings and section work would not have sufficed. As the attendance was small, ample room was given to each section with the exception, perhaps, of the military, which afforded scant space for sixty persons, and being the one which on an average had the largest attendance, it was sometimes badly crowded.

Scientific Work.

The subjects of the general addresses were modern and opportune. They comprised: "Relations of Acute Infectious Diseases with Tuberculosis," by Dr. Aaser of Christiania; "The Prophylaxis of Yellow Fever as the Result of the 1905 Epidemic in Central America and New Orleans," by Professor Boyce of Liverpool; "Infantilism," by Dr. Brissaud of Paris; "The Mechanism of Reflexes and of Muscular Tonus," by Professor Crocq of Brussels; "The Significance of Domestication for Diseases of Animals and Man," by Professor von Hansemann of Berlin; "The Anatomic Causes of Syphilitic Relapses and

Methods to Follow to Combat Them," by Professor Neumann of Vienna; "Local Anesthetics," by Professor Reclus of Paris; "Radium in Biology and Medicine, or Organo therapy of Our Days," by Prince Jean de Tarchanoff of St. Petersburg. I had the honor to deliver the oration for the United States and selected for my subject: "A Plea for the International Study of Carcinoma," at the close of which I suggested the appointment of an international committee to study this subject from non-parasitic standpoints and to report the results of their work to the next congress. [This article appeared in THE JOURNAL, April 28, 1906.]

The programs of all the sections, as usual, contained more material than could properly be disposed of even in six days. Many of the titles lacked the paper as well as the author. This vicious practice of sending in titles and names without any intention on the part of the prospective authors to attend the congress should be suppressed. This practice is by no means uncommon and is a cheap and cowardly way to get names into print, and is always a source of embarrassment to the officers of the sections. Another practice equally detestable is to gorge the programs of the sections with the titles of papers read perhaps years ago before some medical society, large or small, as the case may be, without the authors having made any material alterations or additions. This dishing up of stale food on such important occasions can not be

Fig. 1.—The King and Queen of Portugal.

done away with too soon. The section work of the congress is in need of revision to the effect of reducing the number of papers and the exclusion of material that has done previous service. There is too much reading in the sections and too little discussion and demonstration. Many a time have I seen more than half of the members napping during the reading of a long paper in a monotonous, even tenor of voice. Interesting demonstrations, on the other hand, no matter whether or not the language of the speaker is understood, always rivet the attention of the audience.

Language of the Congress.

The three official languages of the congress are supposed to be French, German and English, but during the Madrid and Lisbon congresses Spanish, Italian and Portuguese were not infrequently made use of. French was the prevailing language and next came German. I admired the Germans for remaining faithful to their mother tongue, although it found few receptive ears. The English language was seldom heard, and when spoken fell on barren ground. When I presented my paper on "First Aid on the Battlefield," in the Military Section, there were about 60 members present, and of this number I am sure that not more than four or five understood a word of what I said. I was prepared for this kind of an audience, and only occupied a few minutes in presenting the salient points of the paper and in making some demonstrations, and in doing so held the attention of the audience. As Americans, it is our imperative duty to give countenance to the language of our country and to popularize the same on all occasions. The English language to-day is the commercial language of the world, the German and French remain the polite languages. It is safe to predict that if at any time a single language is to be the official language of the congress it will be the English, in spite of the opposition made to it up to the present time.

Social Entertainments.

This, like all the previous congresses, has been surcharged with social entertainments of all kinds, including excursions to suburbs on the River Tagus, bull fights, receptions, dinners, garden party, etc. For the American delegates the most notable entertainments were a dinner given by Colonel Bryan, our minister plenipotentiary at the court of Lisbon, to the American delegates, and the dinner given by the King to about 150 official delegates representing all nations. Colonel Bryan

Fig. 2.—Dr. Costa Alemao, President of the Congress.

occupies the Avenida Palace, a former house of royalty, on the most beautiful boulevard of the city. It is a real palace, not only in name, but in its outward and inward appearances, and is maintained as such by its present occupant, who is, besides an able representative of our government, a liberal and charming entertainer. His greatest pleasure is to meet, aid and assist his countrymen. The dinner he gave to the American contingent of the congress was attended by about 50 guests and was in every respect a great success. In this function the host was assisted by his sister, Miss Bryan, and his cousin, Mrs. Page, of Washington, D. C. The table decorations were superb and a splendid band furnished the music. The courses were many, and every one of them testified to the skill of the chef of the kitchen. The mental feast included toasts to President Roosevelt, the King and Queen of Portugal and our honored host. It was after midnight when the well-entertained guests returned to their respective hotels. This occasion was a very pleasant one, and

will live forever in the memory of all those who were present. We have reason to feel proud of our minister at this legation, as he is very popular with the royal family, the natives, and it is his greatest pleasure to be of service to his countrymen.

The King's Dinner.

The dinner of the King was given Saturday evening, at 8 o'clock, April 21, at the palace, and was attended by about 150 of the official delegates, which, with the court officials and ambassadors, brought the whole number of guests up to 200. The American delegation received its full share in this ovation—eight places. The dinner was a very brilliant affair, being attended by the King, Queen, Queen Dowager, diplomats and military officers, all in full-dress uniform. The King wore the same uniform as at the opening exercises, but the Queen appeared in court dress and wore a tiara of diamonds and a broad necklace of precious stones, which dazzled the eyes of the uninitiated. The three flights of stairs we had to

Fig. 3. Professor Miguel Bombarda, Secretary General of the Congress.

ascend were lined on both sides with halberdiers in ancient costume, so it was impossible to lose the way to the reception room. When the hour for dinner arrived, the royal party walked directly through the passageway made by the separation of the assembled guests and took their seats in the center of the two long tables placed parallel to each other, the King on the left and the Queen on the right side, and the guests followed each of them, supplied with a card which accompanied the formal invitation and which indicated the place and number of their seat. The service was perfect, the menu such as can only be done justice to in a royal kitchen, and all of the wines exquisite. I was fortunate to find Professor Curschmann of Leipsic as my left-hand neighbor, and we enjoyed together, besides the superb dinner, a rich mental feast. The King and Queen were served each by a waiter of their own. After dinner the hosts and guests returned to the reception room, where the presentations took place.

Colonel Bryan performed this function for the American delegates. We were first introduced individually to the King, then to the Queen Dowager and lastly to the charming Queen. Almost without exception the delegates kissed the bare hand of the ladies. This as a citizen of two republics I refused to do on this as well as on several former similar occasions. I look on this custom as a relic of the chivalric age, as effeminate, as improper for any citizen of the Great Republic of the United States to comply with. It is my conviction that it is eminently proper to carry our republican customs with us and practice them abroad as well as at home. It was half-past 12 o'clock when we left the palace. The Portuguese, like the Spaniards, are extremely hospitable people and exert themselves to make the social entertainments pleasant and agreeable for all present. On the whole, the social features of every congress have consumed too much time and have been the means of detracting too much from the scientific work of the meetings. A curtailing of these functions is one of the urgent needs of the International Medical Congress.

Abused Privileges—Delegates and Members.

The present system of delegation of the congress is wrong in more than one way. In the first place, any one can become a member of the congress by paying the stipulated fee. This privilege, extended to laymen and physicians, increases the attendance without adding to the working force of the congress. Many take advantage of this provision in order to secure reduced rates and to take part in the social entertainments of the congress. Such attendance is a heavy ballast on the efficiency of the scientific work of the congress and a source

Fig. 4.—The new Lisbon Medical School.

of discomfort to the legitimate members of the congress—the delegates—as they crowd the railway trains and hotels and tax the financial resources of the committee of organization without giving an equivalent of any kind. Lay membership should be abolished. If this were done the doors to the congress would likewise be closed to physicians who have no standing in the profession. In the second place, delegates from disreputable institutions find their way into the congress, although they are not eligible to membership in the smallest and remotest county medical society. Restriction in the matter of appointment and acceptance of delegates should be strictly carried out at the next and all future meetings of the International Medical Congress.

Additional Report of Congress.

From the reports of other representatives and from the accounts in our British, French and Portuguese exchanges THE JOURNAL adds the following details:

The list of presidents of honor appointed for the congress included Nicholas Senn, J. N. Van der Veer and H. E. Bell of this country; Waldeyer, Freudenberg, von Hansemann, Kraepelin and O. Lassar of Germany; Obersteiner and Dollinger of Austria and Hungary; Cornil, Laveran, Bouchard, Landouzy, Poirier, Magnan, Blanchard and Brissaud of Paris, with Pavy Sir Dyce Duckworth, Barlow, D. Ferrier, Mayo Robson and Fergusson of England. The addresses in the 20 different sections and subsections were numerous and many of them were important contributions showing the present status of various medical questions. The views of most of the speakers are

known to our readers, as they have been published or summarized in these columns more or less recently.

International prophylaxis of tuberculosis was urged by S. Bernheim, with the appointment of an international commission to draw up an international code of regulations against the disease. J. Cabral of Lagos presented an exhaustive essay on the subject of epidemic cerebrospinal meningitis based on 178 cases. He found the most effectual treatment to be lumbar puncture either alone or followed by injection of a 1 per cent. solution of lysol or of cyanid of mercury, possibly supplemented by leeches to the mastoid apophyses and wet cupping along the spine, with administration of calomel, opium and bromid. He used also intestinal injection of two quarts of water, alone or with some mild purgative. Weichselbaum attributed the focus of infection and contagion to the nasopharynx. As the micrococcus has little resisting power, it rapidly succumbs outside of the human body. França of Lisbon found lumbar puncture extremely beneficial in his experience with 271 cases, repeated daily or several times a day, withdrawing about 45 c.c. of the fluid, following with injection of some antiseptic. He regards lumbar puncture as curative for the non-bacterial forms of meningitis and palliative at least in the tuberculous form.

DANGER OF MUCH MERCURY IN GENERAL PARALYSIS.

An article on this subject, read by Raymond of Paris elicited corroboratory testimony, although several speakers reported benefit from mild mercurial treatment in the early stages, especially by the Leredde technic.

SURGICAL TREATMENT OF SPASTIC AND PARALYTIC AFFECTIONS.

Vulpius remarked in his address on this topic that although the ultimate results of tendon transplantation in the treatment of contractions and paralyses of nervous origin had not entirely fulfilled the early anticipations, yet they can be regarded as very encouraging. A complete cure can not be expected unless the paralysis is very limited, but satisfactory functional improvement can be counted on for appropriate cases with suitable after-treatment. Examination of patients years after the operation has confirmed the permanancy of the results attained. Redard remarked that periosteal transplantation is preferable to tendon-tendon or muscle-tendon anastomosis and is proving of great benefit in treatment of nervous deformities. S. de Sousa of Lisbon usually prefers arthrodesis to transplantation of tendons for all paralytic affections except those involving the hands. Barbarin called attention to the fact that tendon transplantation or transference can be effectual only when the tendon can be transplanted without tension which reduces its contracting power.

Codivilla of Bologna reported that he has done 415 of these transplanting operations. His experience has demonstrated that good results are never obtained when the muscles are already weakened by some morbid process. They must be capable of an excess of work. He also found that the older the muscles, the less their ability to adapt themselves to new conditions.

ABDOMINAL TUBERCULOSIS.

Broca of Paris commented on the present reaction from the general endorsement of surgical treatment for tuberculous peritonitis. Only about 30 per cent. of the cases treated surgically have remained well for more than two years afterward, according to the latest statistics. The form with acute onset and rapid collection of ascites usually subsides spontaneously. If not, the abdomen should be opened, but not drained. Local abscess formation and complications should be supervised and operated on at need.

UTERINE FIBROMAS.

Pfannenstiel of Giessen argued that as fibromas develop on a basis of chronic endometritis, the rest of the uterus is not sound, and the organ should be removed unless conservative measures are indicated in the exceptional case. Retention of the diseased mucosa may entail menorrhagia later or placenta prævia. One of his patients succumbed to hemorrhage from placenta prævia a year or so after a conservative myotomy. If the uterus is infected the vaginal route is indicated. C. do Pinho of Porto gave as an explanation of the autointoxications of pregnancy that all the poisons generated in the body from various sources are augmented in the pregnant woman, and if they are not eliminated in increased measure trouble is sure to result. The physician should supervise the eliminating functions and strive to keep them equal to their increased task. The total number of official addresses on the program was over 250, on 140 different topics.

OTHER PAPERS READ.

Among the other communications was one by Cajal reporting researches which have confirmed the independent evolution of the axis-cylinders, and thus sustain the [illegible] of his in regard to their monogenesis and also Monroe's assumptions. An animated discussion followed Hasebroek's endorsement of Swedish gymnastics in treatment of angina pectoris (an article by him on this subject is summarized on page 1570). J. Cabral described some cases of what he calls "family cerebral diplegia." Jonnesco of Bucharest reported his experiences with 159 operations on the sympathetic, bilateral in nearly every case, thus bringing his total to 314 sympathectomies. His results in 25 cases of exophthalmic goiter have been especially fine. He regards extensive resection of the cervical sympathetic as the only successful means of treating this affection. He has found it also the best means of curing glaucoma, and reported 91 cures by this means. The results are less favorable in epilepsy, his record being only about 12 cured in 100 cases. Loeffler reported the successful immunization of cattle against foot-and-mouth disease. In a demonstration of Sauerbruch's air cabinet, dogs were anesthetized and extensive operations performed on the [illegible]. R. Turck of Chicago spoke on his experimental production of gastric ulcer in dogs. R. Bensaude of Paris presented two patients in good health six and eight years after extensive resection of the stomach on account of cancer with cachexia. Several other physicians reported similar experiences with long survivals after resection of the stomach for malignant disease. Unna described a new method of staining for the bacillus of leprosy, and emphasized the necessity of continuing treatment of the disease, both general and local, without intermissions. The lepromas must be destroyed to the last traces. A brief course of treatment, although it may apparently have cured the patient, is of no permanent benefit. Chaulmoogra oil is his main reliance. G. Fisac of Madrid presented testimony to confirm the assumption that workers in lime kilns are immune to tuberculosis. The inhalation of lime dust seems to render them refractory to tuberculosis. He has been treating tuberculous patients with lime dust and reported encouraging results. G. W. McCaskey of Fort Wayne presented arguments to prove that absorption of toxins from the intestines was responsible for the development of arterial hypertension under certain circumstances. D. R. Brower of Chicago outlined the proper methods of caring for the acute insane in general hospitals. Two communications that are said to be epoch-making were presented by ophthalmologists: "Serotherapy in Ophthalmology," by T. Axenfeld of Freiburg, and "The Shape of the Crystalline Lens during Repose and Accommodation in the Eye of the Monkey," by von Pflugk of Dresden. Schaudinn was greeted as "the man of the hour."

NEXT MEETING PLACE HUNGARY

On behalf of the American Medical Association and other scientific bodies, Guiteras invited the next congress to meet at New York. Guisy invited the congress to Athens, and Oishi to Japan, but the delegates from Hungary were able to state that the formal invitation they presented was backed by the government, which had already appropriated $50,000 for the purpose. The invitation of the Hungarians was accepted and the next congress appointed for 1909 at Budapest.

The prize of $1,000, endowed by the city of Moscow, was presented to A. Laveran of Paris, the discoverer of the hematozoön of malaria. The prize of $500, founded by the surplus left from the Paris International Medical Congress in 1900, was awarded to Ehrlich of Frankfort [illegible] for his work on serumtherapy, immunization and the side-chain theory. He visited America in 1904, our readers will remember, to receive an honorary degree conferred on him by the University of Chicago.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The 168th Annual Meeting, held at Baltimore, April 24 26, 1906.

(*Continued from page 1470.*)

Importance of Early Recognition and Operative Treatment of Malignant Tumors.

DR. J. C. BLOODGOOD said that the experience at the Johns Hopkins Hospital showed that of malignant tumors of the breast about 47 per cent. were cured for three years. Recoveries are found up to nine years, and the Germans have observed them up to fifteen years. Mediastinal growths are found in these cases. About 10 per cent. developed late recurrences. Involvement of the supraclavicular glands is considered by the Germans to render the case hopeless; but one case of this has been noted at the Hopkins. There should be no delay in removing any tumor of the breast in a woman over 26. The character of the operation depends on the nature of the tumor. The more readily the diagnosis of cancer can be made, the worse is the prognosis, and vice versa. In a considerable number of instances the diagnosis can not be made; on these the prognosis is highly favorable. Eight other cases of malignant tumor of the thyroid have been noted. Small tumors in patients over 30, which are mostly cystic, should be removed at once. Malignant bone tumors are unnecessarily fatal. It is not creditable to the profession to treat these cases as rheumatism and to deprive patients of their only hope for life. A wrench of the shoulder may develop a sarcoma. The *x*-ray is helpful in the diagnosis.

Analytical Study of Acute Lobar Pneumonia.

DR. J. A. CHATARD gathered statistics from the records of the Johns Hopkins Hospital for the past sixteen years, during which time there were 658 patients treated for pneumonia, excluding ether pneumonias. Of this number 200 died, a percentage of 30.39, though if terminal pneumonias are excluded the number of deaths is 165, or 25.07 per cent. The greatest number of cases occurred in young adults from 20 to 40 years old—55 per cent. In early adolescence the mortality is low —4 per cent.; during the period of greatest frequency, 20 to 30 years, it is 44 per cent., and after that period it rises to about 80 per cent. deaths. The male patients numbered 533, with 154 deaths (28 per cent.), compared with 125 females, with 46 deaths (36 per cent.). White, 238 cases, with a mortality of 30 per cent.; foreign, 170 cases, with a mortality of 29.4 per cent.; black, 250 cases, with a mortality of 31.2 per cent. From January to March there is a rise in the number of cases, while during the summer months there is a great diminution in the number of cases, although the mortality is increased. Outdoor occupations, 347 cases, with 34 per cent. mortality; patients with indoor occupations, 274 cases, with 26.6 per cent. mortality. Alcohol was used by 426 patients, with 30.9 per cent. mortality. One previous attack of pneumonia was stated by 88 patients, two previous attacks by eight, three previous attacks by three patients, and one patient claimed to have had four previous attacks. One hundred and twenty-one of the patients were exposed to bad weather, eight to extremes of temperature; there were eight cases in nurses and orderlies, and three cases among doctors. There was a history of tuberculosis in the family in 11.3 per cent. of the patients. All tuberculous pneumonias were excluded from these statistics.

The most frequent symptoms were pain in the side, chill and cough. Abdominal pain was present in 51 of the cases, or 7.7 per cent. The pulse was considered slow when it registered below 90 and of the patients exhibiting this pulse rate 13.6 per cent. died. Patients with a pulse rate below 125 showed a death rate of 14.9 per cent., this medium pulse rate occurring in 50.7 per cent. of the cases. Patients with a pulse over 125 per minute showed a death rate of 49.4 per cent. Temperature was subnormal, below 98.5 in five cases, with two deaths; between 100 and 102 in 39 cases, with 13 deaths; between 102 and 104 in 49 cases, with six deaths, and between 104 and 106 in 384 patients, with about 27.7 per cent. mortality. The temperature was above 106 in 49 patients, with 55 per cent. of deaths. The admission temperature was generally between 102 and 104, though in one-sixth of the patients it was below 100. The respiratory rate was rapid in the majority of cases, these patients exhibiting labored respiration and cyanosis having a high mortality, about 43.2 per cent. The sputum in the majority of the cases was mucopurulent, tenacious and rusty. In 93 cases the pneumococci were found in the sputum.

In 354 cases the right side was involved, with a mortality of 26.5 per cent.; the right lower 139 times. The left side was involved alone 168 times, with a mortality of 20.2 per cent. In double pneumonia the mortality was about 54 per cent. Pneumococci were isolated from the blood in 25.2 per cent. of the cases, and of these 69.1 per cent. died. The joints were aspirated in three cases and the cocci were obtained in one case. There were 338 cases of pleurisy, with a mortality of 51.2 per cent. Empyema occurred in 27 cases. Pericarditis was present in 35 cases, mortality, 82.8 per cent.; endocarditis 13 times, mortality, 76.9 per cent.; and jaundice in 76 cases, with 21 deaths. This latter complication, jaundice, varied in frequency with the years. In 1901 there were 28 cases, 13 in 1902, and only six in 1900, though there were the greatest number of cases during the latter year. There were 13 cases of meningitis, all fatal. The greatest number of cases showed a leucocyte count of between 25,000 and 30,000, with the lowest mortality—19 per cent. The highest mortality occurred among the cases with the lowest leucocyte counts (below 10,000), also when extremely high. Albumin was present in the urine of 541 cases, casts in 107 cases, and the diazo reaction in 16.8 per cent. Bile was present in 34.3 per cent. Peritonitis, tonsillitis and arthritis occurred each three times. There were eight cases of septicemia, 149 cases of delirium, with about 47 per cent. mortality, 12 cases being admitted with delirium. Herpes was noted in 180 cases and not noted in 265. Where a note was made herpes occurred on the lips in 87 patients, on the nose in 43, on the ears in 3. Among the special features delayed resolution was noted in 35 cases and relapses occurred in 5 patients. The average blood pressure was between 125 and 155 mm. of mercury. Terminal pneumonia occurred 35 times. Defervescence was considered as a true crisis when occurring in twelve hours or less; protracted when occurring in from twelve to twenty-four hours. True crises occurred in 21.6 per cent., and it was protracted in 15.5 per cent.; there were 17 cases of pseudo-crisis. The crisis was usually associated with a fall in the number of leucocytes. The crisis most commonly occurred from the seventh to the ninth day, though there was one case occurring on the third day and one on the fifteenth.

Stimulants were used in 536 cases and symptomatic treatment was employed in 460 cases. Measures employed were the ice bag, poultices, sponges, oxygen and in a few cases the antipneumococcus serum. The serum gave little, if any, good results. Typhoid fever occurred in 21 cases as an associated condition, nephritis 18 times, and heart lesions occurred next in order of frequency.

Among the other papers read were: "Cervical Adenitis (Glandular Fever)." Dr. H. T. Marshall; "Tumors of the Breast." Dr. A. McGlannon; "Hydrotherapy in Private Practice," Dr. J. E. Gichner; "Thrombosis of the Bulb of the Internal Jugular Vein of Otitic Origin." Dr. J. J. Carroll. There were lantern demonstrations on "Insects that Transmit Disease," by Dr. William T. Watson, and "Milk Supply in Foreign Countries," by Dr. J. S. Fulton. A portrait of the late Prof. Richard McSherry was presented to the society by his sons, the speech being made by Dr. S. K. Merrick.

Officers Elected.

The following officers were elected for 1906-07: President, Dr. Hiram Woods, Baltimore; vice-presidents, Drs. William T. Watson, Baltimore, Philip Briscoe, Island Creek, and William F. Hines, Chestertown; secretary, Dr. John Ruhrah, Baltimore; treasurer, Dr. William S. Gardner, Baltimore; trustee, Dr. James M. H. Rowland, Baltimore; council, Drs. Robert W. Johnson, Baltimore; Samuel T. Earle, Jr., Baltimore, Clotworthy Birnie, Taneytown, Paul Jones, Snow Hill, and Guy Steele, Cambridge; committee on scientific work and arrangements, Drs. Arthur P. Herring and G. Milton Linthicum; committee on legislation, Drs. William H. Welch, John D. Blake and John W. Chambers, Baltimore; committee on library, Drs. J. Whitridge Williams, Henry B. Jacobs, J. Frank

Crouch and Harvey W. Cushing, Baltimore, and Dr. William R. Dunton, Jr., Towson; delegate to American Medical Association, Dr. G. Lane Taneyhill, Baltimore, with Dr. Brice W. Goldsborough, Cambridge, alternate. Drs. J. McPherson Scott, Hagerstown, and Edwin J. Dirickson, Berlin, were re-elected on the State Medical Examining Board.

FLORIDA MEDICAL ASSOCIATION.

Thirty-third Annual Meeting, held at Gainesville, April 18-20, 1906.

The President, DR. JAMES M. JACKSON, JR., Miami, in the Chair.

Addresses of welcome were delivered on behalf of the city by Hon. W. R. Thomas, mayor; on behalf of the board of trade by Hon. W. W. Hampton, and on behalf of the Alachua County Medical Association by Dr. J. Harrison Hodges. The president, Dr. James M. Jackson, Jr., Miami, responded to the addresses of welcome.

Quarantine and Yellow Fever.

The papers of especial interest at this meeting were those relative to yellow fever and quarantine. Dr. Eduardo Andrade, Jacksonville, read a paper on "What Services Can the Laboratory Render in the Diagnosis of Yellow Fever"? Dr. Warren E. Anderson, Pensacola, presented some thoughts on the recent epidemic of yellow fever, and Dr. Hiram Byrd, Jacksonville, delivered an address on national quarantine. The matter of national quarantine seemed to meet with favor, although it was manifest that the method proposed would result in opposition from some of the states affected.

One of the most interesting essays was that by Dr. J. Harris Pierpont, Pensacola, on "Medical Materialism."

Election of Officers.

The following officers were elected: President, Dr. John MacDiarmid, De Land; vice-presidents, Drs. William P. Lawrence, Tampa; S. R. Mallory Kennedy, Pensacola, and James M. Dell, Gainesville; secretary and treasurer, Dr. J. D. Fernandez, Jacksonville (re-elected); librarian, Dr. James D. Love, Jacksonville; delegate to the American Medical Association, Dr. Joseph Y. Porter, Key West; state health officer and alternates, Drs. J. Harrison Hodges, Jacksonville, and J. Harris Pierpont, Pensacola. It was decided to hold the next meeting at Tampa.

ARIZONA MEDICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Phoenix, April 24 and 25, 1906

The President, DR. J. W. COLEMAN, Jerome, in the Chair.

The address of welcome to the delegates was delivered by Dr. D. A. Fowler, Phoenix, and was responded to by Dr. John S. Barrett, Prescott.

Approval of Council on Pharmacy—Disapproval of Insurance Fee Cutting.

The following resolutions were unanimously adopted:

Resolved, That the Council on Pharmacy and Chemistry, as organized by the American Medical Association, be commended for its valuable work in disseminating knowledge to the profession regarding proprietary and other drugs and medicines, and that this association heartily endorses this work.

Resolved, That this association recommends to the regular physicians of this territory that five dollars ($5.00) should be the minimum fee for all old-line life insurance examinations.

The annual essay was presented by Captain Henry D. Thomason, assistant surgeon United States Army, Whipple Barracks, and with three exceptions the program as printed was carried out.

Election of Officers.

The following officers were elected: President, Dr. Otto E. Plath, Phoenix; vice-presidents, Drs. William V. Whitmore, Tucson; R. A. Hitteman, Bisbee; R. L. Lowry, Prescott; secretary, Dr. John W. Foss, Phoenix (re-elected); treasurer, Dr. Ralph S. Arons, Roosevelt (re-elected); censor, Dr. John W. Flinn, Prescott; delegate to the American Medical Association, Dr. Clarence E. Yount, Prescott, and alternate, Dr. John W. Foss, Prescott.

Book Notices

NEUROTIC DISORDERS OF CHILDHOOD, Including a Study of Auto and Intestinal Intoxications, Chronic Anemia, Etc. By B. K. Rachford, M.D. Cloth. Pp. 440. Price, $2.75. New York: E. B. Treat & Co., 1905.

This is an interesting work, having as a nucleus several papers written by this author during the last few years. The general theme is that of the normal instability of the nervous system in early life due to the immaturity of nerve cells, especially of the inhibitory centers, plus the effect of various pathologic conditions on these unstable cells. As a result of this combination, immature nerve cells and a varied pathologic state, we see nervous disturbances more easily precipitated in the child than in the more self-controlled adult.

The book is divided into two sections, part I taking up general principles, part II dealing with the application of these general principles to specific neuroses. There is first described the normal function of nerve cells: the generation, discharge and control of energy. A discussion of the heat-generating apparatus next follows, the sudden accumulation and equally sudden dissipation of heat being described. The suddenly high temperatures of early life are attributed to the instability of the thermic centers and the weakness of the thermo-inhibitory centers, while the sudden drops are attributed to the rapid action of the heat-dissipating mechanism, this rapid action being due chiefly to the proportionately greater surface of radiation in the child. The net result of these two processes is the wide oscillations in temperature so familiar in early life.

The subject of intestinal and autointoxications receives careful attention, the author attributing much importance to the action of the xanthin and purin bodies on the unstable nerve cells. Incompetency of the liver, either from hereditary or other causes, is regarded as an important factor in the working of these bases, as a competent liver "stands guard" and prevents their absorption from the intestinal tract. Laboratory experiments are adduced in support of his theory as to the injurious effects of these bodies. These effects assume varied shapes, giving rise to widely differing clinical pictures according to the age of the individual. Thus, in the young, lithemia is attributed to the action of the xanthin and purin bodies, while in later life their presence gives rise to albuminuria, and by their irritating presence in the circulation, to arteriosclerosis with resulting cerebral hemorrhage. On this basis he sees a kinship between these various processes.

The relation of neurotic disorders to anemia is discussed. Anemia plays an important part in these disorders by causing a malnutrition of the nerve centers, thus rendering them more unstable than ever. It is stated that anemia itself, however, is only a symptom, a secondary affair arising from a more deep-seated trouble, the most common causes being chronic intestinal troubles, tuberculosis, syphilis, malaria, rheumatism and rachitis; and to the accompanying anemia rather than to any specific toxin the author attributes the nervous disorders seen in these affections. Thus he sees an intimate relationship between tuberculosis and certain neuroses, insanity, chorea and incontinence. These are all manifestations of great nervous instability on the part of nerve centers insufficiently fed with anemic blood.

A chapter on reflex irritation shows the important part played by reflex causes in producing nervous disturbances. These causes constantly irritate nerve centers, stimulating them to great activity. It has been shown that as a result of activity on the part of nerve cells these cells become fatigued, consequently more unstable than normal and, therefore, more easily upset. Obviously any cause acting as do reflex causes over long periods of time will tend to produce prolonged nervous fatigue and thus lead to nervous disturbances. Furthermore, it has been shown that the process of resting on the part of the nerve cell takes a longer time than does the process of becoming tired out, hence the long time required for the correction of a chronic neurosis, for example, incontinence of urine after removal of its reflex cause, e. g., a tight prepuce.

The first section closes with an excellent plea for more rational and less strenuous methods in the education of our

children, which the author most truthfully maintains lead to much nervous exhaustion. He advocates more parks and playgrounds in our large cities. An especially valuable suggestion is, that promotion from grade to grade shall depend more on the child's physical condition and less on his mental showing. The child's capacity for school work is more dependent on his physical status than on his age and mental advancement.

Part II is a specific application of the general principles laid down in part I, the author using as illustrations, eclampsia, incontinence, laryngismus stridulus, migraine, epilepsy, recurrent vomiting and chorea. He reiterates his belief in the kinship of migraine and epilepsy, citing cases in which the one has merged into the other. His classification of the different clinical forms of epilepsy, however, seems forced. He divides them into three groups: developmental (idiopathic), organic, toxic. The essential factor in the first group he regards as a lack of development of the higher inhibitory centers which control the lower convulsive centers, an hereditary predisposition. This is perhaps as good a conception of true or idiopathic epilepsy as any, considering our ignorance of its real cause and nature. His second group is not genuine epilepsy at all. The attacks in this class are "epileptiform" seizures and are due to some gross cerebral lesion, e. g., an old hemorrhage cyst, and should be given the name of this gross lesion. In the third group the essential factor is an autotoxin, which acting on an individual already predisposed produces epilepsy, but on one not so predisposed causes some other neurosis, e. g., migraine. Thus here as in group 1 the important factor is an hereditary predisposition without which the author believes the individual would not have epilepsy; hence it would seem better to class these so-called toxic cases under the first group, thus giving us (a) idiopathic, and (b) organic.

The author seeks to prove by citation of cases the principles already discussed, yet in these very cases we see illustrated the weakness of his work. Throughout the book, up to this point, he has laid great stress on the important rôle played by the xanthin and purin bodies in the causation of these neuroses, citing the frequent occurrence of these bases in the urine as proof of his theories; but in the 15 cases cited we find a report on the urine in only two! In these two cases the urine contained acetone and diacetic acid. This omission shows in a nutshell the weakness of the whole book. The work lacks sound foundation in facts. There is too much theory. "I believe" and "it is my belief" occur far too frequently; "it has been proved" far too infrequently. The author is dealing with conditions concerning which our actual knowledge is extremely limited and in which there is excellent opportunity for theorizing; of this opportunity he has availed himself to the full. This is, perhaps, proper to a certain extent, but we must not be carried away by the plausibility of the author and accept as fact what at present is unknown and purely theoretical. Nevertheless the book is valuable and well worthy of careful study both by the pediatrician and the general practitioner. Its chief value lies in the emphasis placed on the important rôle played in the nervous affairs of early life by anemia and malnutrition from whatever cause, and by intestinal poisoning and the vital importance of correcting these basic conditions. This writer, at least, is not blinded by the symptom which happens to loom largest at the moment, but he strives diligently to go to the root of things. And perhaps, after all, he is not far from the mark in emphasizing nerve instability (that is as good a term as any at present) and intestinal toxemia as the roots to be aimed at. Certainly his results are better than his theories, for his patients do well under the treatment he practices, even though the exact way in which these results are attained is somewhat obscure.

We regret exceedingly to see mentioned in a work by a man of such reputation such proprietary medicines as "Kutnow's powder," "eolchi-sal," etc., even though it be done unwittingly, as it undoubtedly is in the present instance.

A TEXT-BOOK OF PSYCHIATRY, for Physicians and Students. By L. Bianchi, M.D. Authorized Translation from the Italian by J. H. MacDonald, M.B., Ch.B. 106 Illustrations. Cloth. Pp. 904. Price, $6.00 net. New York: William Wood & Co.

The translator of this work expresses the opinion that it will prove a valuable addition to English psychiatric literature, which is a very moderate recommendation, considering that the work is one of the leading Italian treatises on mental disorders and the only one that has thus far been put in English for the benefit of the English-speaking public. Professor Bianchi's position among the active workers in this department is alone such as would insure his work a welcome. The size of the book may appear at first sight a little formidable, but it is fully justified by the author's handling of his subject. It is divided into three parts. Of these the first, comprising 175 pages, is devoted to an exposition of the physiology of the brain according to the later data. Bianchi does not appear to be an adherent of the neuron theory, but holds rather that the researches of Apathy and Bethe, confirmed by others, have reinstated the old nervous reticulum of Golgi though in a somewhat modified form.

Part second, comprising over 200 pages, is devoted to an examination of the pathologic modifications of the various psychic functions and is largely psychologic. The subjects of perception, attention, memory, ideation and feeling and volition are each interestingly discussed in their relation with abnormal mental phenomena and the author's wide acquaintance with psychologic theories and literature is very much in evidence.

Part three commences with a chapter on the methods and fields of clinical inquiry, followed by a chapter on classification, a subject which he treats respectfully though pointing out its difficulties and its theoretical futility. His classification is his own. He divides the mental affections into three great groups. The first comprises the affections due to original psychocerebral defect; the second includes the infective autotoxic and toxic psychoses occurring in individuals normally evolved; the third includes all the disorders due to a substratum of organic disease. The inclusion of epileptic insanity in the first class, when it is so largely non-evolutionary in its origin, may seem a little out of place, but that it often falls under this head can hardly be denied. Similarly, delinquency as a mental disorder may not be entirely acceptable to everyone, but in treating it here Bianchi is in accord with a large class of thinkers, especially of the Italian school. Hysteria, developmental paranoia, developmental neurasthenia and sexual psychopathies naturally fall under this head, with the phrenasthenias at the other extreme of the scale.

In the second group it is noteworthy that this text-book, while recognizing the work of the Germans, does not accept Kräpelin's conceptions of mania and melancholia or dementia præcox, but follows rather in the old lines based on the clinical experience of the majority of practitioners in the past. Pure mania and melancholia are recognized as independent of each other and dementia præcox Bianchi considers as only one clinical variety out of many of sensory or hallucinatory insanity. Mental confusion comes under the same class in the author's opinion, though he does not deny the possibility of a primary form. It is worth noting here also that Professor Bianchi does not altogether support the very commonly repeated opinion that the Italians, using only pure wine and very little other intoxicants, do not suffer from the abuse of alcohol. On the other hand, he attributes a very considerable portion of the mental disease and criminality in Italy to the abuse of alcohol.

In his third group paresis naturally calls for most attention, and Bianchi considers syphilis as only one out of a number of its possible causes, and gives considerable importance to heredity in its causation. A valuable feature of the work is the clearness of statement as to the author's views on the various controverted points, together with a fair statement of the opposite views. The descriptions are clear and the translation has apparently preserved the style and readableness of the original. The translator has done a favor to English-speaking readers in thus putting in their hands one of the very best of the foreign text-books of the day.

THE DYNAMICS OF LIVING MATTER. By J. Loeb, Professor of Physiology in the University of California. Cloth. Pp. 233. Price, $3.00. New York: The MacMillan Company, 1906.

Since 1894 Columbia University has been issuing from time to time books on the biologic sciences, based on the lectures given by distinguished biologists, both of its own faculty and from outside. The latest addition to the series, and of the

greatest interest to medical men, is this book by Professor Loeb. The author represents perhaps the foremost of the great school of physiologists who are endeavoring to solve the intricate problems of the vital phenomena by going to the bottom of the scale of evolution, and studying the effects of the simplest possible substances and forces on the simplest possible forms of living matter. There can be little room for question that this is the proper way in which to seek for a correct understanding of the so-called "vital processes," for if we can not interpret the phenomena that are observed in the multiplication of a single cell, such as the egg of an invertebrate or the processes of repair of the simple hydroids, what likelihood is there of our understanding the infinitely more complicated processes of the mammalian organism? Being based on a series of open lectures, these fundamental problems and the results so far obtained in their investigation are discussed by Professor Loeb in a broad and general manner, covering the essential principles of life phenomena as now understood by the biologist. Living organisms are considered "as chemical machines, consisting essentially of colloid material, which possess the peculiarities of automatically developing, preserving and reproducing themselves," and in every consideration of the phenomena exhibited by living organisms the attempt is made to bring them into a field of the simplest of chemical and physical processes possible. The physician who desires to acquaint himself with the recent advances in fundamental physiology, as well as to get a glimpse into the life processes of the simpler living forms, will find unending interest and stimulation in this book.

State Boards of Registration

COMING EXAMINATIONS.

INDIANA Board of Medical Registration and Examination, Indianapolis, May 22-24. Secretary, W. T. Gott, Indianapolis.

NEW YORK State Boards of Medical Examiners, Albany, May 22-25. Secretary, Charles F. Wheelock, Albany.

ILLINOIS State Board of Health, Collseum Annex, Chicago, May 23-25. Secretary, J. A. Egan, Springfield.

NEBRASKA State Board of Health, State House, Lincoln, May 29-30. Secretary, George H. Brash, Beatrice.

MINNESOTA State Board of Medical Examiners, Old State Capitol Building, St. Paul, June 5-7. Secretary, O. E. Linjer, Minneapolis.

WYOMING Board of Medical Examiners, State Capitol, Cheyenne, June 6. Secretary, S. B. Miller, Laramie.

MICHIGAN State Board of Registration in Medicine, Ann Arbor, June 12. Secretary, B. D. Harison, Sault Ste Marie.

TEXAS State Board of Medical Examiners, Dallas, June 12. Secretary, T. T. Jackson, San Antonio.

OHIO State Board of Medical Registration and Examination, Cincinnati, Cleveland and Columbus, June 12-14. Secretary, George H. Matson, Columbus.

BOARD representing the Medical Society of Delaware and Board representing the Homeopathic Medical Society of Delaware State and Peninsula, former held at Dover and latter at Wilmington, June 19. Secretary, P. W. Tomlinson, Wilmington.

NEW JERSEY State Board of Medical Examiners, Trenton, June 19-20. Secretary, E. L. B. Godfrey, Camden.

NEW YORK Boards of Medical Examiners, Albany, June 19-22. Secretary, Charles F. Wheelock, Albany.

PENNSYLVANIA State Board of Medical Examiners, Annex Hotel, Pittsburg, and North Building, Philadelphia, June 19-22. Secretary, Joseph E. Willetts, Pittsburg.

VIRGINIA State Board of Medical Examiners, Richmond, June 19-22. Secretary, R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, Baltimore, June 20-23. Secretary, J. McP. Scott, Hagerstown.

SOUTH CAROLINA State Board of Medical Examiners, Columbia, June 26. Secretary, W. M. Lester, Columbia.

Arizona April Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, April 2-3, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of applicants examined was 12, of whom 11 passed and 1 failed. The following colleges were represented:

PASSED.	Year Grad.	Per Cent.
College.		
Medical College of Ohio	(1901)	75
National Med. Coll., Mexico City	(1885)	75
Drake University	(1905)	89
Missouri Med. Coll.	(1899)	83.3
College of P. and S., San Francisco	(1904)	76.3
Kansas Med. Coll.	(1895)	75
McGill University, Montreal	(1900)	86
Rush Med. Coll.	(1899)	86
Barnes Med. Coll.	(1904)	75, 77.4
Harvard Medical School	(1894)	81

FAILED.		
Hospital Coll. of Med., Louisville	(1900)	49.5

Idaho April Report.—Dr. J. L. Conant, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Pocatello, April 3-4, 1906. The number of subjects examined in was 13; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 19, of whom 13 passed and 6 failed. The following colleges were represented:

PASSED.	Year Grad.	Per Cent.
College.		
College of P. and S., Chicago	(1904)	78.4, 85
Trinity Med. Coll., Toronto	(1883) 75.1; (1895)	85.8
University of Minnesota	(1902)	83.6
Rush Med. Coll.,	(1906) 75; (1906)	88.1
University of Michigan	(1901)	77.5
Baltimore Med. Coll.	(1893)	81.1
Northwestern University	(1901)	87.3
Columbian University	(1902)	85.5
University of Vermont	(1891)	77
Milwaukee Med. Coll.	(1905)	77

FAILED.		
Chicago Homeo. Med. Coll.	(1879) 70.5; (1880)	66.6
University of Iowa	(1895)	72.2
Barnes Med. Coll.	(1898)	51
Rush Med. Coll.	(1889)	73
Jefferson Med. Coll.	(1895)	67.8

The following questions were asked:

MATERIA MEDICA AND THERAPEUTICS.

1. State the average dose of the following: (1) fluid extractum aconiti, (2) allonum, (3) chloralum hydratum, (4) fluid extractum buchu, (5) hydrargyri chloridum corrosivum, (6) tinctura lobeliæ as an expectorant, (7) syrupus senegæ, (8) spiritus glyceryllis nitratis, (9) oleum picis liquidæ, (10) liquor potassii arsenitis. Dosage should be given according to the U. S. P. 1900. 2. Name ten anthelmintics. 3. Name five official preparations of ipecacuanha, and state the average dose of each. 4. What is cocain? Give the physiologic effect of cocain on (*a*) the conjunctiva, (*b*) the pupil of the eye, (*c*) respiration, (*d*) temperature. 5. Define: (1) Hemostatic, (2) styptic, (3) cebolic, (4) sialagogue, (5) myotic, (6) antihydrotic, (7) antizymotic, (8) cholagogue, (9) vesicant, (10) galactagogue. Give an example of each. 6. Name ten alkaloids and the drugs from which they are obtained. 7. Give the therapeutic uses of phenylis salicylas. 8. Mention five purposes for which diaphoresis is produced. 9. Give the dose and therapeutic uses of sparteinæ sulphas. 10. Give the therapeutic uses of guaiacol.

GYNECOLOGY.

1. Define: (*a*) Endometritis; (*b*) endocervicitis; (*c*) perimetritis; (*d*) salpingitis; (*e*) peritonitis. 2. How would you treat prolapsus uteri? 3. What is nymphomania, and how would you treat it? 4. Give symptoms, diagnosis and treatment of urethral caruncle. 5. Differentiate between suppression and retention of the urine. 6. What is the difference between menstruation and ovulation? 7. What is a vesico-vaginal fistula, and how would you treat it? 8. Mention two ways in which fistula is liable to result from ignorance or carelessness on the part of the obstetrician. 9. Give etiology, symptoms and treatment of vaginal cysts. 10. Name and describe four varieties of myoflbromata of the uterus.

THEORY AND PRACTICE.

1. Give etiology, symptoms, diagnosis, prognosis and treatment of pyelitis. 2. Give etiology, symptoms diagnosis and treatment of endocarditis. 3. Give etiology, symptoms, prognosis and treatment of acute intestinal atrophy. 4. Name the complications and sequelæ of scarlet fever and give preventative and curative treatment for each. 5. Give etiology, symptoms, varieties and treatment of stomatitis in children. 6. Cerebrospinal meningitis: Give etiology, symptoms, diagnosis, prognosis and treatment. 7. Give treatment for (*a*) acute ptomaine poisoning, (*b*) bronchial asthma, (*c*) acute catarrhal gastritis, (*d*) icterus neonatorum. 8. Give pathology, symptoms, diagnosis, prognosis and treatment of eczema. malnelia. 9. Give symptoms, varieties and treatment of eczema. 10. Give treatment for pneumonia and complications.

OBSTETRICS.

1. Define: Fetus; funis; placenta prævia; souffle; ballottement. 2. What evils may result to (*a*) child and (*b*) mother from prolonged second stage of labor? 3. How would you accomplish delivery where child's arm is displaced back of neck? 4. Give treatment of hemorrhage of third degree at close of labor. 5. Give symptoms, etiology and treatment of phlegmasia alba dolens. 6. What is the mechanism of labor in L. O. A. and L. O. P. position? 7. Give complete directions for, and five precautions to be observed in, applying the forceps. 8. How would you treat ophthalmia neonatorum immediately? 9. Describe the process of podalic version. 10. Give two distinct indications for podalic version.

DIAGNOSIS.

1. Give differential diagnosis between simple catarrhal laryngitis, spasmodic laryngitis, laryngismus stridulus and membranous croup. 2. Give diagnosis of mucous colitis. 3. Give differential diagnosis between glaucoma and iritis. 4. Give microscopic findings in examination of sputa in acute tuberculo-pneumonic phthisis and croupous pneumonia with full directions for staining and examining. 5. Differentiate bronchial asthma, cardiac asthma, hysterical dyspnea and uræmic asthma. 6. Differentiate nephritis, cholelithiasis and calculous cystitis. 7. What may we learn by a careful examination of the blood? 8. What may be learned by a careful examination of the tongue? 9. Explain the reflexes and name the principal ones. 10. Name four instances of referred pain and five location and character of the lesion producing it.

CHEMISTRY AND TOXICOLOGY.

1. Give formula for ammonia gas, ammonium hydroxid, water, dium chlorid, corrosive sublimate, potassium chlorate, carbon oxid, silver nitrate, hydrochloric acid, and nitric acid. 2. Carbon oxid: Give properties, occurrence, preparation, test, effects on ant and animal life. 3. Water: Mention properties, boiling point, eezing point, distillation, mention nature of substances removed by distillation. 4. What is aqua regia? valence? ozone? ombustion? element? 5. Give comparative composition of cow's nd breast milk. 6. Describe a reliable test for albumin. 7. What re some common drugs used in suicide? In accidental poisoning? 8. ive treatment for poisoning by each drug named above. 9. What s paris green? Mention its toxic symptoms. Give treatment of aris green poisoning. 10. Mention the dangerous drug in each f three patent or proprietary medicines. (You may use hive yrup, catarrh cure, cough medicines.)

PHYSIOLOGY.

1. What are carbohydrates? hydrocarbons? protelds? Meution a pecimen of each. 2. Describe the digestion of each. 3. Describe he process of absorptiou in the alimentary canal, stating the subtance absorbed in each division. 4. What is glycogen, chyle, hyme, myosin, epiphysis? 5. Describe human blood. 6. Describe he general circulation; the portal circulation. 7. What changes ire produced in the air by respiration? 8. Explain how the temperature of the body is maintained and regulated. 9. What are the functions of the white and gray matter of the brain? 10. What would be the effect of a transverse section of the anterior root of a spinal nerve? the posterior root? an efferent nerve? an afferent nerve? How is a divided nerve restored?

HYGIENE.

1. Give some directions for the care of a pregnant woman. 2. State how air becomes vitiated. How is vitiated air purified? 3. Name some diseases that are hereditary. How may they be prevented? 4. State the hygienic care and treatment for a person afflicted with tuberculosis. 5. What relation has food to good health? 6. What sanitary care should a state provide for its citizens? 7. What restrictions should the state impose on the marriage relation? 8. Give some directions for the hygienic care of public schools and school children? 9. Name some of the bad effects of feeding impure milk to children. Give direction for securing a supply of pure milk. 10. Name some contagious diseases. How can they be to a large extent prevented?

ANATOMY.

1. Give the origin, insertion, function, innervation and blood supply of the (*a*) biceps, (*b*) gastrocnemius, (*c*) quadriceps extensor. (*d*) occipito-frontalis, (*e*) sternocleidomastoid. 2. Define the terms: (1) Lien, (2) epiphysis, (3) cubitus, (4) collum. (5) volar, (6) syndesmology, (7) foramen, (8) hiatus, (9) teres, (10) antrum. 3. Describe the ulna and name the muscles attached to it. 4. Name the viscera wholly covered by peritoneum. 5. Number and name the laryngeal cartilages.

HISTOLOGY.

1. Name the elementary tissues and describe one of them. 2. Describe non-striated muscle and mention five places in which it may be found. 3. Describe a typical medullated nerve fiber. 4. Describe the histologic appearance of a cross section of the small intestine. 5. Define the terms: (1) Cell, (2) nucleus, (3) protoplasm, (4) sarcolemma, (5) axon, (6) reticulum, (7) cortex, (8) medulla, (9) neuroglia, (10) erythrocyte.

SURGERY.

1. Iridectomy: (*a*) Describe the operatiou for artificial pupil; (*b*) for closed pupil from iritis; (*c*) for glaucoma. 2. (*a*) In antrum operations for mastoiditis, what variations in anatomic relations should be kept in mind? (*b*) What two particular tissues should not be wounded? 3. Describe the amputation of the foot, when neither injury nor disease of the os calcis is present. 4. Nasal neoplasms: (*a*) Name three most common benign; (*b*) describe each separately; (*c*) name the most common malignant one. 5. (*a*) Name the varieties of bone fracture; (*b*) what are the especial features of gunshot fractures? 6. Complete backward dislocation of proximal phalanx of thumb. (*a*) What is the main obstacle to reduction? (*b*) what tissues are injured? (*c*) how would you reduce it by manipulation? (*d*) when by arthrotomy describe the procedure. 7. Femoral hernia: (*a*) Most common in males or females. Why? (*b*) Differentiate femoral from inguinal hernia; (*c*) when strangulated, where is the seat of constriction? (*d*) describe modern radical operation closing the entire canal. 8. End-to-end anastomosis of jejunum: Give technic, describing sutures used and how applied, instruments and other apparatus required. 9. Fibroid tumors of the uterus: (*a*) Is a fibroid a benign or malignant growth? (*b*) does it ever undergo transformation into another kind of neoplasm, if it does what is it? (*c*) from what locality of the uterus does fibroid usually start? (*d*) how are they classified with relation to normal uterine structures? (*e*) at what period of life are they most commonly observed? (*f*) are they more commonly found in multiparous or nulliparous women? (*g*) what are the symptoms of fibroids? (*h*) differentiate fibroids from pregnancy, ovarian cysts; (*i*) give treatment for fibroids. 10. What is your treatment for asphyxia? (*a*) during chloroform ether anesthesia, (*b*) in resuscitation of the apparently drowned?

PATHOLOGY.

1. (*a*) After death, how many hours supervene before rigor mortis is established? (*b*) In what order do the muscles become fixed, and in what order does rigor mortis disappear? (*c*) how long after rigor mortis is established before it disappears? 2. (*a*) What are the methods employed for preserving pathologic specimens, and preparing them for study? (*b*) give formulas for different processes of preparation. 3. (*a*) What is hemorrhage by rhexis, diapedesis? (*b*) what is understood by the term transudation, what is a hematoma? 4. Give the general methods and principles of artificial immunization of an animal susceptible of communicable diseases. 5. Paris green poisoning, suicidal intent, male, age 24, weight 165 pounds, apparently healthy, poison injested one hour after hearty meal, lived 18 hours, what were the macroscopic findings at postmortem, 6 hours after death. 6. Pathologic polynuclear leucocytosis occurs in how many of the following diseases: Typhus fever, pneumonia, diphtheria, malaria, scarlet fever, measles, tuberculosis, erysipelas, rheumatism, name them; under what conditions is physiologic polynuclear leucocytosis observed? 7. (*a*) In myocarditis what particular tissues are primarily involved? (*b*) describe the arterial anastomosis in the deep heart muscle; (*c*) from what source does the heart receive its nutrient supply, other than the corouary arteries? 8. (*a*) Is a so-called lymph gland, in the true sense of the word a gland? If not what is it? (*b*) what is its function? 9. Acute diffuse nephritis: (*a*) What structures are involved? (*b*) under what circumstances is the medullary portion of the kidney usually the first to be involved? (*c*) what do you understand by the word "diffuse," used to describe this form of nephritis? 10. (*a*) Describe one method of staining the bacillus tuberculosis, gouococcus; (*b*) define hypertrophy, hyperplasia, morphology, neuroglia; (*c*) how do wounded veins heal?

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Exophthalmic Goiter.

In the treatment of exophthalmic goiter MacKenzie, in the *British Medical Journal*, states that when there are signs of serious conditions, the patient must be given as nearly complete rest as possible of both mind and body, and that so long as the patient is losing in weight, rest must be absolute in order to maintain the strength at the best possible standard. All disquieting influences must be interdicted. These patients must be given words of cheer with the prospects of recovery; at the same time friends and relatives must be given to understand that recovery may be extremely slow. Good food and an abundant supply of fresh air are two important elements in the treatment of this disorder. The patients will do best when kept in the open air, and this open-air treatment is more easily carried out in this disease than in almost any other, as the patients are much more tolerant of cold and feel a great deal better in cool weather than in hot weather. They must be carefully fed and given an abundance of wholesome and nutritious diet. The weight must be observed frequently and, if necessary, the ordinary diet may be supplemented with milk in amounts ranging from two to four pints a day. An adequate amount of fat is also necessary in a great many of these cases. When vomiting is present this author recommends potassium citrate or some bismuth preparation to check it. In other cases it is necessary to suspend feeding for the time and to keep up the best nourishment possible by means of the bowels. In combating the diarrhea, which is frequently one of the most difficult complications to deal with in this disease, great care must be observed in the selection of the food. In excessive cases large doses of bismuth or preparations of tannin are necessary. [The latter preparation may be given in the form of an emulsion by high rectal injections.] Massage is of great benefit in patients who are confined to bed, but must be given very judiciously. Careful attention must be paid to the skin, remembering the great tendency to excessive sweating in these cases. Warm seawater baths or brine baths are sometimes of benefit. When patients are able to travel, a change of climate is of great value, but there can be no regularity as to the exact climate to be prescribed in these cases, as one patient will do better at the seaside, while another will do better inland, or at a higher or lower elevation. The chief object, however, is to place a patient where complete rest and quiet can be obtained, with freedom from noise and friends, where good, wholesome food can be procured, with pure air and pleasant surroundings.

In the medicinal treatment MacKenzie recommends potassium bromid, especially in cases in which the nervous symptoms predominate, and in which there is great restlessness, excitability and emotion. He advises giving the drug in doses of from 20 to 40 grains (1.30-2.65) at bedtime. Preparations of iodin are useful in cases in which the goiter is large or in which it is increasing in size. For this purpose he prescribes the syrup of hydriodic acid, as this is better borne than potassium iodid, and seems practically as effective. This syrup can

be given in doses of one dram each (4.00) three times a day, after meals. The tincture of iodin may be applied externally over the goiter, having the disadvantage, however, of producing a dermatitis.

As regards surgical treatment, he states that the operation is a dangerous one, and that the risks happen to be the greatest in that class of cases which respond least to medical treatment. In cases in which there has been little or no exophthalmos, MacKenzie has had good results from thyroidectomy. Thyroidectomy, however, often fails to cure the disease. Ligature of the thyroid arteries is another operation which has been frequently performed, and while it is less dangerous than thyroidectomy, it is less likely to effect a cure. In summing up, he considers the risk of thyroidectomy to be too great to justify the performance of the operation, except in unusual circumstances, and for the present medical treatment should be the line depended on. This should be carried out with extreme care and perseverance, and if this be done the chances of final recovery, he states, are very good.

Sprained Ankle.

H. G. Johnson, in the *New York Medical Journal*, in speaking of the treatment of sprained ankle, states that if the patient is seen soon after the injury, hot water should be applied to the injured part by pouring it from a pitcher, or bathing the foot in hot water for from five to ten minutes. The ankle should then be wrapped with a bandage, which should be kept moist for from twelve to eighteen hours, during which time the patient should be at complete rest. After the removal of this bandage a gentle massage should be applied to the injured ankle, followed by a strapping of surgical plaster, the technic of which is as follows: A number of strips one inch in width and thirteen or fourteen inches long, should be cut. Beginning at the instep, the middle of each strip of plaster is placed at the bottom of the foot; the ends are carried across the front of the foot to lap over. The second strip covers half the first strip, and so on, up the foot, to within two inches above the ankle. The ankle is then reinforced by two or three additional strips. In two or three days a fresh strapping is applied over the first dressing, and the whole allowed to remain a week or ten days, or until the tenderness and pain are relieved.

Littlejohn, in the same periodical, states that the limb should be thoroughly shaved from the knee downward, and cleansed with soap and water. Ether should then be applied, as this insures better adhesion of the plaster. The foot should be restored to its normal position as far as possible, put in the position of acute flexion, and held by an assistant while the dressing is applied. The correct relation to the foot and ankle are extremely important. A strip of plaster twenty inches long and two inches wide should be fastened about four inches below the knee on the inner side of the leg. This should extend down parallel to the long axis of the limb and along the posterior edge of the tendo Achilles, directed under the heel and up the corresponding outer side of the leg. A second strip of the same size is applied just in front of this and overlapping it about a quarter of an inch. In this way the foot is held in a rude stirrup. These strips limit the lateral mobility of the joint. Another strip an inch wide is started on the dorsum of the foot just behind the insertion of the middle toe, and should be carried back along the inner edge of the foot, around the heel, and back the outer side of the foot to the starting point. A similar strip should be applied higher up and overlapping this strip by a quarter of an inch. Beginning just above the internal malleolus, a strip one inch wide follows the first long strip applied down under the heel and up the outer side of the ankle, to just above the external malleolus. Other strips should be applied in order, until the whole foot and ankle are covered, except the small space at the heel. A light gauze bandage then may be applied, beginning at the toes and extending up the leg. An icebag should then be fastened over the injury, and kept in place for three out of four hours. These applications may be dispensed with at the end of the first day. The limb should be elevated and absolute rest enjoined. After forty-eight hours the patient should be urged to take a few steps, and gradually to increase this exercise until he is able to leave the house. After the second day massage and passive motion are practiced, lasting for about fifteen minutes each time. Patients are instructed to wear the adhesive strips for two or three weeks.

The advantages gained by treating a sprained ankle with adhesive strips, cold applications and rest are summed up by Littlejohn as follows: 1. Swelling and hyperemia are largely controlled by the firm pressure of the adhesive plaster and cold applications. 2. The pain is not nearly so acute nor of so long duration. 3. With less pain the patient is more willing to make early efforts in the use of the joint. 4. The confinement to one room is of short duration. 5. This method of treatment greatly lessens the tendency to painful stiffness and adhesion of the joint, while immobilization methods at times undoubtedly lengthen the convalescence into months of partial disability.

Erysipelas.

In the treatment of erysipelas Dr. I. S. Maximoff, in an abstract in the *Journal of American Medical Sciences*, recommends the following local and constitutional treatment. The local treatment consists of dressing the seat of the disease from two to four times daily with the following combination:

℞. Guaiacol
Tincturæ iodi
Spiritus etheris, āā.....3iss 6
Essentiæ menthæ piperitæ, q. s.....
M. Ft. lotio. Sig.: Apply locally.

Internally he recommends camphor, administered in the powdered form, and giving grs. ii (.12) every two hours during the day, or it may be given in solution in the following combination:

℞. Pulverized camphoræ.....gr. iss 09
Aquæ laurocerasi.....3ss 2
Syrupi simplicis 3iss 6
M. One such dose every two hours, followed by a draught of hot tea.

The administration of the camphor is continued until moderate diaphoresis is established, as this symptom marks the crisis, after which the disease usually subsides.

Castor Oil Made Palatable.

Dr. A. E. Midgely, Oshkosh, Wis., writes concerning his method of disguising the taste of castor oil. He combines it as follows:

℞. Alcoholis 3iii 12
Benzosulphinidi (saccharin).....gr. viii 5
Olei anisi.....m. xvi 1
Olei cinnamomi.....m. xii 8
Olei ricini q. s. ad.....3viii 240
M. Dissolve the saccharine in the alcohol, warming if necessary, then add the oils and shake well. Sig.: Dose the same as of the plain oil.

This mixture, he states, may turn cloudy if cooled, but does not suffer thereby, and again becomes clear on warming to room temperature. Other flavors may be used in place of those given, as, for instance, oil of peppermint, but that has the objectionable feature of causing disagreeable eructations in some individuals. The volatile oils serve the additional purpose of preventing, in a measure, the griping tendency of the plain oil. If the use of the oil is to be continued for any length of time the plain oil is better, as the saccharin in the mixture may cause some digestive disturbance. [The amount of saccharin present in Dr. Midgley's prescription would be likely to cause digestive disturbances and it would probably be better to decrease the amount to one-fourth of the quantity given (gr. ii-0.13). Ed.]

The following combination is said to be an almost tasteless emulsion of castor oil:

℞. Olei ricini . . . 3iv 15
Pulv. acaciæ . . 3i 4
Syr. aurantii . . . 3i 0
Aquæ cinnamomi q. s. ad. 3i 30
M. Sig.: To be taken at one draught.

In diarrheas brought on by undigested food irritating the

intestinal canal the following combination is recommended to cleanse the intestine and to check the diarrhea:

R. Olei ricini	5iv	15
Spiritus vini gallici	5ii	8
Tinct. opii	m. x	65
Aquæ cinnamomi q. s. ad	5i	30

M. Sig.: To be taken at one dose.

Medicolegal

Physician Not a Fellow Servant with Trainmen.

The Second Appellate Division of the Supreme Court of New York holds, in the case of Tingley vs. Long Island Railroad Co., an action brought to recover for the death of a physician struck by a train while attempting to cross in front of or board same, that it was error to allow the defendant railroad company to prove a contract by which the physician had agreed to attend surgically the employés and passengers of the company when called on to do so by its officers and agents. It says that clearly such employment did not make him a fellow servant, and besides at the time of the accident he was going to attend one of his own patients.

Proper Things for a Medical Expert.

The Superme Court of Indiana says, in the case of Swygart vs. Willard, that it is eminently proper that a witness dealing with scientific or technical terms, should, if possible, make his meaning more clear by reference to terms in common nse. It was not improper for the same reasons to permit a physician to explain in this case the meaning of "Monomania" as used by him. He was rightly permitted also to explain the distinctive peculiarities of a mind suffering from insane delusions; the symptoms of dementia, and, on a hypothetical statement of facts showing some form of mental unsonndness, to testify nnder what class of unsonndness of mind the testator should be placed. A medical expert may also explain the effect resulting to the brain, nervous system and body of a man from the excessive use of alcohol.

May Testify as to Statements and Observations.

The Appellate Court of Indiana, Division No. 2, holds, in Indianapolis & Martinsville Rapid Transit Co. vs. Reeder, that the statements of an injured party, made to a physician, expressive of his then present existing physical condition, may be given by the physician as a part of his examination. Again, a physician was asked: "To what extent has this woman suffered pain since this injury was inflicted on her, as you have observed it?" The answer was: "As I have observed it, she has suffered qnite a good deal." The objection was made that the question called for a conclusion. If so, the court says, it was one competent for an expert witness to give; but, while the fact might be more keenly appreciated by the person snffering than by an onlooker, it was nevertheless a fact relative to which the onlooker, and especially where he was a physician, might testify.

Damages for Hernia.

The Supreme Conrt of Washington says that in the personal injury case of Leeson vs. Cawmill Phoenix a jury brought in a verdict of $5,500 damages for an inguinal hernia on the right side caused by a blow in the abdomen from the handle of a chisel thrown back by an alleged defective machine. The plaintiff, who was abont 47 years of age, was said by all physicians who testified in the case to be in a healthy normal condition, with the exception of the hernia. There was also testimony that he could probably be cured by an operation which would cost in the neighborhood of $200 or $300. The Supreme Conrt holds the award under these circumstances excessive, and that $3,500 would be ample compensation. An excessive verdict in a case like this, it says, is not only an injustice to the defendants, but it is a menace to the welfare of the state, and shonld not be upheld.

Attitude of Court Toward Prescription of Whisky.

The Appellate Court of Indiana says, in De Tarr vs. State, that it is recognized in the medical profession that the use of whisky for medicinal purposes is in many instances salutary and useful. It is often prescribed and recommended by physicians. When there is a substantial compliance with the statute permitting its prescription, and parties act in good faith, this court would be derelict in judicial discretion if it applied the strict letter of the statute, instead of its spirit, and thus protect those who have done no legal wrong. But as against the pernicious habit which had grown up in the state of the indiscriminate sale by druggists of intoxicating liquors, to be nsed as beverages, under the false guise that such sales were for medicinal purposes, against which the statute was directed, the court nnalterably declares in favor of a strict enforcement of the statute.

Tea and Coffee Not "Provisions."

The Supreme Judicial Court of Massachusetts says that the first qnestion in the case of Commonwealth vs. Caldwell was whether tea and coffee are "provisions," within the meaning of a statute permitting the sale of provisions, by peddlers, without a license. The court thinks that they are not. The word "provisions" as used in the statute, it says, has been held to mean "food, victuals, fare and provender." Tea and coffee are not used as food, in the form in which they are sold by shopkeepers. They are used to make decoctions, to be taken as a beverage for their agreeable taste or their stimulating effect. In this respect they are not very different from wine and beer, which in many countries are in common use at meals. Therefore the court is of the opinion that they are not included in the term "provisions," in its ordinary sense, or in the meaning of this statute.

Liability for Medical Attendance on Wife.

The Second Appellate Division of the Supreme Court of New York says, in re Stadtmuller, that a husband died three weeks after his wife did, but a short time before his death he paid the physician who attended his wife during her last illness. Both husband and wife left estates. The will of the wife directed that all her jnst debts and funeral expenses be paid. Could his administratrix recover from his wife's estate the amount of the physician's bill so paid? No. So long as the wife lived with her husband, he, and he alone, was liable to the physician as for necessaries supplied to the wife, in the absence of agreement between the wife and the physician that credit should be extended to her. No such agreement was shown to exist. Under such circumstances neither the wife nor her estate would have been liable, in the absence of special direction in her will that such payment be made. It was different with regard to her funeral expenses.

Health Officer Entitled to Full Salary of Office.

The Second Appellate Division of the Supreme Court of New York says that the proceeding in People on the relation of Leitner vs. Sipple and others as town board of audit was to review and correct the action of the board in reducing the compensation of the relator as health officer of the town to $25 for the year 1904, from $100, as fixed by the board of health of the town in pursnance of the provisions of the statnte. It did not seem to be questioned that he held the office of health officer of the town, although there was some claim that he had not discharged the duties of his office. But, the court says that, as it views the case, this did not concern the board of audit. If he held the office, so long as he was not removed, he was entitled to the salary which had been affixed to the office by competent authority. The facts as they appeared from the return, in connection with the petition, showed that he was entitled to an audit of the remainder of his claim. The determination of the town board of audit should therefore be annulled and such claim remitted to the board, with instructions to audit the same at the rate of $100 a year for the period during which he acted as health officer.

What Constitutes the Loss of a Hand?

The Supreme Conrt of Nebraska had presented to it by the case of Beber vs. Brotherhood of Railroad Trainmen the question of whether a total loss of three fingers and an injury to the remaining finger and thumb, which materially interferes with their use, and a cutting away of a part of the palm

to the hand constitute a total loss of the hand within the meaning of a by-law of a mutual benefit association, which provides indemnity for any member in good standing suffering "by means of physical separation, the loss of a hand at or above the wrist joint." The District Court decided that it does not; that under such a by-law recovery of indemnity can be had only on proving that the entire hand was severed at or above the wrist joint. But the Supreme Court holds that the lower court erred in taking that position, and directing a verdict for the defendant. It holds that the question was one to be submitted to the jury for its determination, and there leaves it.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

May 5.

1 *Case of Heteroplastic Ovarian Grafting, Followed by Pregnancy, and the Delivery of a Living Child. R. T. Morris, New York.
2 Practical Significance of Our Knowledge of Bacteria in Their Relation to Pneumonia. A. Wadsworth, New York.
3 *Case of Syringomyelia with Partial Macrosomia. M. G. Schlapp, New York.
4 *Exercise. J. W. Wainwright, New York.
5 *Rheumatic Manifestations in Children. M. H. Sicard, New York.
6 *Formation of a Cul-de-sac for an Artificial Eye. F. Valk, New York.
7 Strangulation of Small Intestine Through a Slit in the Omentum. C. Goodman, New York.
8 *Foreign Body in the Orbit. T. A. Boot, Holland, Mich.

1. See abstract in THE JOURNAL, April 28, 1906, p. 1310.

3. **Syringomyelia with Partial Macrosomia.**—Schlapp's patient, a man aged 38, had been well up to two years ago. At this time he had an attack of indefinite illness followed by a swelling of the left shoulder, arm and hand to about twice their normal size. They have since been somewhat larger than the right arm and hand. There is complete loss of the pain and thermal senses over the whole of the left arm and hand, and on the surface of the back and chest, neck and back of head. There were attacks of total blindness in the left eye lasting about five minutes. The bones were involved as well as the soft tissues. They show greater opacity than do the normal bones. In this case there is a paralytic dilatation of the blood vessels with edema caused by a lesion lying remote from the hypertrophied tissue and in no way directly affecting it. Schlapp thinks it probable that the tissue hypertrophy is the result of the bioplastic as well as the kakabiotic process.

4. **Exercise.**—Wainwright states that every physician ought to understand something of the methods of "mechanico-therapeutics," and should avoid vague expressions such as "out-of-door life," "muscular exercise," and so on, when consulted as to the propriety of exercise in an individual case. For practical purposes the moderate use of dumb-bells, Indian clubs, developing machines, bicycling, horseback riding, walking and similar methods of exercise, will accomplish much in promoting the physiologic functions of organs, and thus assist in great part to ward off the ravages of disease.

5. **Rheumatic Manifestations in Children.**—Sicard gives the following résumé: Rheumatism in nursing infants is very rare; in childhood the disease is atypical, the joint signs being but little marked; the so-called complications are in children rather types of the disease, for they may occur without joint symptoms, either alone or associated with each other. The whole attack, while seemingly mild and subacute, is capable of causing severe damage to other structures, notably the endocardium, pericardium and the nervous system. Relapses occur and patients are often left invalids for life.

6. **Cul-de-Sac for Artificial Eye.**—Valk's patient, a woman, was injured by a rocket stick which fell, burnt end downward, passing through the brim of her hat. It lacerated the eyeball, tore out the lower part of the conjunctiva and the free border of the lower lid and passed down through the cheek and out below. The eyeball seems to have been torn out and probably also part of the muscular cone. The outer part of the orbital plate of the superior maxillary bone near the articulation of the malar seems to have been fractured, but the infraorbital nerve was not injured. The superior lid and cul-de-sac were intact and normal. Valk operated for the purpose of forming a lower cul-de-sac so that an artificial eye could be worn, following out the method of Weeks. He does not know what the complete final result in this case will be, but at present he considers the operation a success.

8. **Foreign Body in Orbit.**—Boot reports the case of a patient from whose eye he removed a fragment of clay pipestem one and five-eighth inches long, one-quarter of an inch in its widest diameter, and weighing 50 grains. It had been lodged in the orbit forty-nine days.

New York Medical Journal.

May 5.

9 Clinical Manifestations of the Toxemia of Pregnancy. (To be concluded). J. C. Edgar, New York.
10 *Experience with Downes's Electrothermic Angiotribe in Pelvic and Abdominal Surgery. J. W. Bovée, Washington, D. C.
11 *Use of Rubber Gloves in Medical Wards. T. W. Clarke, London.
12 *What Medical Subjects Can Be Taught Efficiently in the Literary Schools? F. S. Lee, New York.
13 Causes of Injuries Among the Insane. J. T. W. Rowe, New York.
14 Exploration of the Chest and Physical Signs in Beginning Pulmonary Tuberculosis. G. Mannheimer, New York.
15 Department of Pulmonary Tuberculosis (Out Patient) of the R. I. Hospital for Five Years, ending June 30, 1905. J. Perkins and P. Williams, Providence, R. I.
16 Multiple Wounds of Stomach and Intestine in a Child Five Years of Age. J. H. Jopson, Philadelphia.

10. See abstract in THE JOURNAL, Jan. 6, 1906, p. 65.

11. **Rubber Gloves in Medical Wards.**—Clarke advocates the use of rubber gloves in medical wards for the purpose of protecting the patient from the physician, the physician from the patient, and one patient from another. He has made use of rubber gloves in performing infusions, venesections, intravenous injections, paracenteses and lumbar puncture. He considers the use of rubber gloves during vaginal and rectal examination a great safeguard against syphilitic infection. The nurse, too, is protected against infection by the use of the gloves to be worn while handling specific cases, giving inunctions, douches, enemata, etc. Their use also prevents the spread of infectious diseases and suppurative conditions in general from one patient to another. The technic of caring for the gloves consists of washing them immediately after use, boiling for a few minutes, drying thoroughly and powdering inside and out with talcum powder.

12. See abstract in THE JOURNAL, March 31, 1906, p. 982.

Boston Medical and Surgical Journal.

May 3.

17 The Physician's Duty to His Fellow-Practitioner and to Himself. W. Lindley, Los Angeles.
18 *Treatment of Joint Disease by Passive Congestion. H. F. Hartwell, Boston.
19 *Some Etiologic Suggestions. F. C. Wellman, Benguella, Angola, West Africa.
20 Supplementary Note on a Spirochete Found in Yaws Papules. F. C. Wellman, Benguella, Angola, West Africa.
21 *Influence of Dampness of Soil, and Climate on the Diseases of Respiration. H. J. Barnes, Boston.
22 *A Consideration of the Treatment of Autointoxication or Auto Infection When They Are the Cause of Mental Disturbance (Concluded). L. V. Briggs, Boston.

18. **Treatment of Joint Disease by Passive Congestion.**—Hartwell reports the results obtained in the treatment of ten cases of joint disease by passive congestion. He says that the treatment must be considered an adjuvant to mutilating operations rather than a substitute. Its success depends on the quality of the blood which the individual presents to combat the disease. In acute or subacute inflammations the best results are obtained in gonorrheal joints, especially in those which tend to anchylosis or in which the inflammation leads to bad stiffness. The duration of the congestion in acute or subacute joints other than tuberculous depends on the effect it produces. If the patient states that after one or two hours' congestion the pain is relieved and motion is increased, this length of time is sufficient, but if the pain soon returns a longer period of congestion must be maintained.

Most of the cases treated by Hartwell represented well-advanced types of the disease so that they presented a most discouraging outlook when treatment was commenced. In each case, however, the passive congestion shortened the course of treatment of these diseased joints and by its means excellent results were obtained where in some the only outlook seemed to be in operative interference.

19. Some Etiologic Suggestions.—Wellman discusses the significance of an embryo intestinal worm found in the blood stream and the possible connection between chiggers and ainhum. He is of the opinion that *S. penctrans* plays a part in the production of ainhum.

21. Influence of Damp Soil and Climate on Respiratory Diseases.—Barnes believes that the conclusions to be drawn from the evidence at hand is that all diseases of respiration are common enough regardless of dry or damp soils, in hot or cold, moist or dry, climates to at least raise a doubt if these conditions have any influence whatsoever as a cause of the diseases of respiration. An excessively dry air, he states, which Nature nowhere provides, but which we create in winter by raising the temperature of air holding a very small volume of watery vapor, and thus lower the relative humidity to an extent sufficient to impair the resisting powers of the mucous membrane lining the respiratory tract, may be a factor in the increased prevalence of respiratory diseases in cold weather.

22. Treatment of Autointoxication or Autoinfection.—The treatment employed by Briggs in an average case of mental disease in which the cause is autointoxication or autoinfection includes a tonic before meals, antiseptic with meals and two hours after meals, daily colonic flushings with normal salt solution, and baths of salt water lasting from twenty minutes to an hour at night. The diet is regulated and consists entirely of milk at first. If there be much decomposition in the stomach, lavage is resorted to. The antiseptics and tonics are varied in quantity and kind according to the individual or the results obtained of antiseptics. In cases in which there has been actual damage to the brain, the treatment has shown that the progress of the disease can be stopped, though damaged areas can not be replaced. Almost every case of mental disease begins with insomnia, and while this is not the cause of the disease, it retards repair, and until normal sleep is established, permanent results can not be obtained. With the elimination of the toxins by antiseptics, sleep usually comes without sedatives. Briggs believes that the treatment of selected cases of mental disturbance with antiseptics and correcting the habits of the various organs, proves that toxins do exist and are the most potent factors in many disorders of the brain.

St. Louis Medical Review.

April 28.

23 Pharmacology of Iods. (To be Continued). O. H. Brown, St. Louis.
24 Scopolamin-Morphin as an Adjuvant to General Anesthesia. V. Pleth, Crookston, Minn.

New York State Journal of Medicine, Brooklyn.

April.

25 *Resections of the Bladder in Rebellious Cystitis. H. A. Kelly, Baltimore.
26 *Exophthalmic Goiter. W. G. Thompson, New York.
27 *Immediate and Early Treatment of Ocular Injuries. A. A. Hubbell, Buffalo, N. Y.
28 Factors Which Further Convalescence Following Abdominal Section. F. H. Wiggin, New York.
29 Therapy of Carcinoma. S. Lloyd, New York.
30 Pathologic Clinical Consideration of Arteriosclerosis. J. M. Van Cott, Brooklyn.
31 Oration on Surgery. (Concluded.) R. Park, Buffalo, N. Y.
32 History of the Medical Society of the State of New York. (Continued). J. J. Walsh, New York.

25. Resection of Bladder in Rebellious Cystitis.—For the management of intractable cases Kelly lays down the following rules: First, to determine the infecting organism or organisms, note how numerous are the colonies which grow out within a given time from say three platinum loops distributed on agar. Second, note exactly the extent of the disease in the urinary tract as a whole, in kidneys, ureters and bladder. Third, it is important to determine and to make carefully written notes describing the exact condition of the bladder. Fourth, in beginning a course of treatment, clear up the disease as far as possible, according to the milder measures, thus rendering the active surgical intervention when undertaken far less aggressive. Fifth, having cleared up the disease to a particular area which is rebellious to further treatment, it should then be excised in toto by a resection of the bladder walls. Kelly urges that many cases of advanced vesical inflammation, even of a tuberculous character, which heretofore have been counted hopeless, are amenable to surgical treatment, which may go so far as to excise half or two-thirds of the bladder.

When the kidney is involved, this organ must be attended to first if the disease is extensive, after the bladder if the infection is mild. He thinks the best method of suturing is to use a row of catgut sutures, including the entire thickness of the bladder walls, for the first row, and to reinforce this with a second row of fine silk sutures. He has experienced no trouble from tying catgut sutures in the bladder, and dropping them when it was easier to pass and to tie the sutures in this way at the base.

26. Exophthalmic Goiter.—Thompson reports the results of a study of 42 cases. He emphasizes the fact that in addition to possessing the four cardinal symptoms of tachycardia, tremor, enlarged thyroid gland and exophthalmos, this disease is subject to exacerbations which are of a distinctly toxemic character, with active fever, acute cardiac dilatation with murmurs, and a variety of symptoms constituting a definite clinical syndrome. In some instances the most serious toxemic attacks have been completely checked by the cytotoxic serum of Dr. Rogers, prepared from the diseased human glands through animal inoculation. In a large proportion of cases the agency which appears to initiate the acute toxemic seizure, is some intercurrent mild infection, such as an attack of tonsillitis, pharyngitis, bronchitis, influenza or similar acute ailment.

27. Treatment of Ocular Injuries.—Hubbell claims that the experience of most ophthalmologists shows that practitioners who are first consulted in these injuries approach them with more or less unconcern, and fail to give the attention and relief demanded. On account of the complexity of the organ of vision, the difficulties of diagnosis, the importance of the results and the technicality of treatment in so many of these cases, Hubbell advises that they should be referred to a specialist as early as possible, and especially when there are penetrating wounds of the eyeball. Injuries of the eyelids and other ocular appendages seldom affect vision, infection rarely follows, wounds heal rapidly, and they are to be treated simply in accordance with the ordinary rules of surgery. This treatment may be carried out by any intelligent practitioner. Superficial injuries of the cornea are more important. Infection frequently takes place, and then there is danger of a suppurative process, which may extend throughout the cornea or even involve the whole eyeball. The early treatment consists in removing foreign bodies and using applications to prevent infection.

Penetrating wounds of the eyeball should always be approached with more or less concern. If not already infected at the time of the injury, they easily become infected afterward. Moreover, a foreign body may have been driven into the eye, which not only carries infection with it, but which in itself becomes, with rare exceptions, a certain cause of destructive inflammation. In every punctured wound of the eyeball inflicted by a small, unseen object, there should always be a suspicion of the introduction of a foreign body. The diagnosis is often most difficult, and requires special appliances and experience. The removal of a foreign body from the interior of the eye is almost imperative to its salvation. Here, too, special equipment and special skill are demanded. Infection, by whatever means it may be introduced, is the agent which destroys the injured eye, both by suppurative processes and by non-suppurative uveitis. In non-suppurative traumatic uveitis, the infection seems to be of a specific kind and is transmissible to the uninjured eye, producing there a sympathetic uveitis, which is also destructive in its course. Sympathetic inflammation does not develop until at least two weeks after the injury of the first eye.

In the absence of a foreign body, or after its removal, the

immediate treatment of a perforating wound consists in sterilizing the eye and its surroundings, freeing the wound of all incarcerated tissues and closing it as perfectly as possible, or touching the opening with carbolic acid. Subsequently sterilization should be kept up as effectually as the circumstances will permit. Infection should be combated by intraocular disinfectants and rendered dormant by the persistent and methodical application of cold over the eye. An eye that is hopelessly lost at the time of the injury should at once be excised, an operation which may be performed by any well-informed practitioner. When an eye is affected with active traumatic uveitis, it should be enucleated within two weeks from the time of the injury, unless the eye has useful vision or many may be given useful vision by some operative measures. In wounds of the eyeball of all varieties delays are dangerous, and if there is the slightest possibility of a foreign body being lodged within the eye, or if infective processes begin, the dangers to sight are so great that the services of a specialist should always be secured, if possible.

Journal of the Medical Society of New Jersey, Newark.

May.

33 Possible Dangers of Water Gas. W. S. Disbrow, Newark.
34 *Effects of Muscular Exercise on the Heart. G. L. Meylan, New York.
35 Some Points in Infant Feeding. A. Hand, Jr., Philadelphia.
36 Syphilitic Affections of the Eye. A. Cramer, Camden, N. J.
37 Practical Application of Disinfectants. R. J. Wilson, New York.
38 *Proprietary Medicines and State Medical Society Journals. R. C. Newton, Montclair, N. J.

34. **Effect of Muscular Exercise on the Heart.**—Meylan claims that muscular exercise judiciously prescribed and practiced is a valuable agent in the cure of many forms of cardiac inefficiency. Athletic sports when practiced without medical supervision produce more or less permanent cardiac injuries in weak and untrained individuals. The difference in pulse between the horizontal and the vertical position is a useful sign in the physical diagnosis of cardiac conditions. The adaptability of the heart to suddenly increased work, as measured by the change in pulse rate after muscular exercise, is a valuable indication of cardiac efficiency.

38. **Proprietary Medicines and State Journals.**—Newton says that only the journals really owned and controlled by the state societies are independent enough, honest enough and brave enough to attack this evil of the advertisement of nostrums in the medical press and to keep up the fight. When the medical press has cleared its own skirts it can and will force the lay press and the religious press to follow suit. The average of intelligence both in and out of the profession is gradually rising. It has at last risen to the point where this question is understood in its true bearings. The fact that the majority of the privately owned medical journals are controlled by the nostrum interests, he states, is apparent to everyone, and although the fight may be a long and a hard one, honesty and decency in the medical press will assuredly be exacted at last by the profession. Newton claims that the credit for the inauguration and prosecution of this beneficent work belongs to the state medical journals.

St. Paul Medical Journal.

May.

39 *Dilatation of the Stomach. G. D. Head, Minneapolis.
40 *Relation of Dislocated Kidney to Disease of the Vermiform Appendix. H. J. O'Brien, St. Paul.
41 Preparation and After-Treatment of Operative Cases. A. A. Matthews, Spokane, Wash.
42 Feces a Secretion as Well as an Excretion. A. C. Peterson, Dassell, Minn.
43 *Diagnostic Significance of Albumin and Casts in the Urine. T. W. Stumm, St. Paul.
44 Significance of Casts and Albumin in Urine, with Special Reference to Its Pathology. F. C. Schuldt, St. Paul.
45 *Significance of Albumin and Casts in the Urine of Infants. W. R. Ramsey, St. Paul.
46 *Significance of Albumin and Casts in Pregnancy. A. R. Hall, St. Paul.
47 Diagnostic Value of Albumin and Casts in Urine as Related to Life Insurance. C. N. McCloud, St. Paul.

39. **Dilatation of Stomach.**—An examination of 37 cases has convinced Head that no one etiologic factor lies at the bottom of all cases of dilated stomach, and the cases seem naturally to divide themselves into groups depending on the factor which played the most prominent part in producing the dilatation. In 5 of the cases, ulcer either of the stomach or duodenum, with resulting stenosis at the pyloric end of the stomach, was the cause of the dilatation. Three of these cases were in men and two in women. All were in individuals over 30 years of age. All had complained of stomach trouble for many years; one patient 20 years, another 10 years, a third 25 years and a fourth 6 years. All complained of vomiting after meals and of pain after eating. In 2 the stomach was much enlarged, the lower border reaching in one case to 10 cm. below the umbilicus; in another to 12 cm. below the umbilicus. In the other two the lower border reached to the umbilicus. In 4 cases of the 37 the cause of the dilatation was a carcinoma of the stomach. Three were in men and one in a woman. In another group of cases, five in number, the etiologic factor was a lesion in or around the gall bladder.

In two of the cases the enlargement was caused by an obstruction at the pylorus due to adhesions between the gall bladder and the duodenum or pyloric end of the stomach. In one case of this group the dilated stomach was caused by a distended gall bladder filled with gallstones which, lying over the duodenum, acted as an obstruction to the outflow of chyme. In all the cases of this group the lower border of the dilated stomach reached below the umbilicus. In all the abdominal pain was referred to the upper abdomen in the pyloric region of the stomach. In all there was epigastric tenderness of mild degree and not well localized. In two of the cases the abdominal distress complained of came at regular intervals after eating. In the other three the pain came irrespective of the taking of food. None complained of vomiting. In four there were large amounts of free HCl in the gastric contents after a test meal. A stomach analysis in the fifth case was not made. In two there was marked hyperacidity after a test meal.

In a fourth group of cases, three in number, the dilatation of the stomach was associated with tuberculosis of the lungs. One case was in a man 41 years, the other two in women, 28 and 55 years of age, respectively. In a fifth group of cases, 14 in number, the enlarged stomach was associated with pronounced nervous symptoms and assumed a position low in the abdomen. In most of them the abdominal wall was loose and flabby, one or both kidneys were out of position and could be palpated, as could also, in some cases, the edge of the liver and spleen. The abdominal aorta pulsated forcibly. The remaining cases, four in number, are classed together as the mucus colitis group. These were cases of dilated stomach associated with the passage of masses of mucus in the stools, the passages usually being accompanied by attacks of colicky pains in the abdomen. Two of these cases were in women and two in men. All were young individuals under 25 years and all had moderately dilated stomachs.

40. **Relation of Dislocated Kidney to the Appendix.**—O'Brien believes that one of the great reasons why many cases of nephrorrhaphy are not attended with relief of the symptoms is because an accompanying appendicitis is overlooked. He insists on the necessity of the removal of the appendix in all cases in which a right nephrorrhaphy is undertaken for the relief of abdominal symptoms.

43. **Significance of Albumin and Casts in Urine.**—Stumm points out that there are instances in which the presence of albumin and casts in the urine have no grave diagnostic significance. He urges, however, that if they are found present the patient should be observed closely and the diagnosis of physiologic albuminuria made with great caution, for once it is impressed on the mind of the patient that the presence of albumin in his urine is of no grave significance he may lead a life that will be of the greatest detriment to him if the physician has erred in his diagnosis.

45. **Albumin and Casts in Urine of Infants.**—Ramsay has found that when systematic examination of the urine of infants is made, albumin and casts are found frequently, especially when the infant is suffering from disturbances of the intestinal tract.

46. **Albumin and Casts in Pregnancy.**—Hall points out that albumin and casts occur in a large percentage of pregnant women and that in most cases it signifies the presence of the

so-called kidney of pregnancy. Most of these cases return to an apparently normal condition after labor, but the presence of pregnancy indicates a danger of eclampsia. About 2 per cent. of these women develop eclampsia, and eclampsia never develops except in these cases.

Albany Medical Annals.

May.

48 *Uterine Myomata Simulating Pregnancy; with Special Reference to the Submucous Variety. J. A. Sampson, Albany.
49 Methods and Indications for the Use of Spinal Anesthesia. A. W. Elting, Albany.
50 Treatment of Acute and Chronic Maxillary Sinusitis. C. F. Theisen, Albany.

48. **Uterine Myomata Simulating Pregnancy.**—Sampson calls attention to some of the more common conditions causing difficulties in the differential diagnosis, and also emphasizes the important part played by uterine myomata in the simulation of pregnancy, and, therefore, the importance of carefully studying these cases. Uterine myomata through the alterations in the form of the uterus caused by the tumor, the increased vascularity in that organ and surrounding parts necessary to nourish the uterus and tumor, and the stimulus due to a submucous myoma, thus giving rise to uterine contractions, may cause symptoms which may simulate any or all of those caused by pregnancy, except the actual heart-beat of the living child. These simulations, however, nearly always lack the stamp of genuineness, and, if they alone are carefully studied, should teach that they are, in the particular case under study, much more characteristic of a myomatous uterus than a pregnancy; the above, together with a history of the case, should make the diagnosis clear in nearly every instance. Sampson concludes that when mistakes are made it is nearly always the physician's fault; the signs were all there, only he would not see or heed them, or would insist in incorrectly interpreting them.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

May.

51 Consideration of the Gunshot Wounds Inflicted with the Japanese Small Caliber Mantle Bullet. R. R. de Wreden, St. Petersburg, Russia.
52 *Medical and Surgical Observations During a Three Years' Tour of Duty in the Philippines. J. M. Banister, Ft. Riley, Kansas.
53 *Disability from Hernia in Men Engaged in the Marine Services; the Operation for the Radical Cure. H. W. Austin, U. S. P. H. and M.-H. S.
54 Military Headgear and Its Relation to the Health of the Soldier. H. D. Corbusier, U. S. A.
55 James Markham Marshall Ambler. J. C. Wise, U. S. N.

52. **Observations in the Philippines.**—The remarks on surgery in the Philippines made by Banister are founded on his experiences in the surgical department of the First Reserve Hospital, Manila, during a period of twenty-three and one-half months. Of 775 operations noted by Banister, 181 involved the peritoneal cavity, and 240, counting four cataract extractions, may be easily accounted major operations. Following this amount of operative work there occurred 16 deaths, a mortality rate of 2.06 per cent. Most of these 16 fatalities occurred in patients who were moribund when brought to the hospital, and who were subjected to immediate operation in the forlorn hope of saving life, and the remainder were in hopeless conditions when placed on the operating table, with one exception, and in the latter case death from tetanus was due to infection from dust blown into the operating room during the operation. In this mortality list there is not a death, Banister says, which would not have occurred under the best auspices in any climate, except the fatality from tetanus. The soil of the Philippines is rich in tetanus spores.

For the radical cure of inguinal hernia by the Bassini method 96 operations were performed, there having been first union in every case, and not a single instance of recurrence. Fifty-five operations for appendicitis were performed, with one death. These operations were undertaken for every variety of disease and there was no selection of favorable cases for operation. Eight operations for liver abscess were performed on seven patients, one patient having been aspirated prior to a subsequent operation by abdominal section. These cases of hepatic involvement occurred in patients who had been affected with amebiasis, and were directly due to amebic invasion of the liver. Three deaths occurred; two of these patients had multilocular abscesses and one a large single abscess. Banister says that bone surgery is followed by excellent results in the Philippines, and no one need hesitate to operate on joints, or the osseous tissues generally, on account of any supposed detrimental climatic influence. For the radical cure of ventral hernia five operations were performed. Of these, four patients were radically cured, the wounds healing by first union, and one fatality resulted from tetanus, as before described.

A perfect result followed every operation for varicocele and hydrocele, of which there were 69 for the former and 16 for the latter condition. The suprapubic incision was invariably used in the operation for varicocele, and the excision of the tunica vaginalis, with drainage, was employed in the radical treatment of hydrocele. Seven perineal sections were performed, four with and three without a guide. All were successful. In the case of a patient with extensive adhesions of the cecum and omentum to the parietal peritoneum, which condition had existed for two years as the result of an old suppurative appendicitis which had been subjected to operation with drainage, the patient being an invalid in consequence, a perfect cure was secured by laparotomy with separation of the adhesions, a portion of the omentum being removed.

53. **Hernia in the Services.**—Austin believes that all adults under 55 years of age whose vocation necessitates severe physical exertion, as that of the sailor or the soldier, suffering from inguinal hernia are best treated by an operation for the radical cure, such as the Bassini or Halsted, and that it should be recommended in all such cases, unless there is some special contraindication that would prevent the patient undergoing any surgical operation requiring an anesthetic. Each case of irreducible hernia is a law unto itself, but if the hernia is not very large, and if the patient is in fair health, not over 60 years old, and especially if the bowel comes down at times, Austin recommends an operation. The liability to strangulation in these cases is greater than in any other except in enterocele, in which the opening in the ring is very small. Immediate operation in all strangulated hernia without temporizing is the safest procedure, and the operation should be for radical cure when possible.

New Orleans Medical and Surgical Journal.

April.

56 Case of Black-Water Fever. E. D. Newell, St. Joseph.
57 The Doctor's Salary. E. D. Newell, St. Joseph.
58 New Method of Treating Swamp Fever. E. D. Newell, St. Joseph.
59 Treatment of Complete Prolapse of the Rectum by Rectopexy. S. P. Delaup, New Orleans.
60 Bites of Insects. I. Dyer, New Orleans.
61 Abscess of the Liver. L. Sexton, New Orleans.
62 The Insanity of Epilepsy. D. E. M. Hummel, Jackson.
63 Hemostatics. P. A. Boykin, Jeanerette.

May.

64 The Third Stage of Labor. E. S. Matthews, Bunkie, La.
65 Impotency in the Male. C. W. Allen, New Orleans.
66 Case of Tetanus Treated by the Intraspinal Injection of Twenty-five Per Cent. Solution of Magnesium Sulphate. S. Logan, New Orleans.

Medicine, Detroit, Mich.

April.

67 Observations on the Phagocytic Power of the Blood of Supposedly Normal Human Beings. J. McFarland and E. M. L'Engle, Philadelphia.
68 *African Poison Test as Observed in the Portuguese Colony of Angola, West Africa. F. C. Wellman.
69 Eyes and Ears of School Children. F. Allport, Chicago.
70 Laws and Teachings of the Ancient Hindus in the Art of Love. W. L. Howard, Baltimore.
71 Is Jugulation of Acute Disease Possible? W. C. Abbott, Chicago.
72 Pneumococcic Infection in Relation to Hemorrhage in Tuberculosis. L. F. Flick, Philadelphia.
73 Sudden Epilepsy and Epileptic Self-Inflicted Injuries. W. F. Howat, Hammond, Ind.

68.—See abstract in THE JOURNAL, Dec. 23, 1905, page 1979.

Albany Medical Annals.

April.

74 Points in the Diagnosis and Treatment of Pulmonary Tuberculosis. L. Brown, Saranac Lake.
75 History of the Medical Society of the County of Rensselaer, New York. R. B. Bontecue, Troy.
76 *The Flat-foot Series of Disabilities and Deformities of the Foot. J. M. Berry, Troy, N. Y.

76. See editorial in THE JOURNAL, April 28, 1906, page 1290.

Journal of the Minnesota State Medical Association or Northwestern Lancet, Minneapolis.

April 1.

77 Present Prostatic Surgery. J. W. Little, Minneapolis.
78 Practical Utility of Cystoscopy. M. C. Millet, Rochester, Minn.
79 Intestinal Perforation in Typhoid Fever. W. Courtney, Brainerd.

Bulletin of the Johns Hopkins Hospital, Baltimore.

April

80 Some Recent Text-books of Anatomy, with Special Reference to the New American Edition of Gray. F. P. Mall, Baltimore.
81 Variation in the Soleus and Plantaris Muscles. D. H. DuPree, Baltimore.
82 The Pancreatic Ducts in the Cat. G. J. Heuer, Baltimore.
83 Schultze Clearing Method as Used in the Anatomic Laboratory of the Johns Hopkins University. E. C. Hill, Baltimore.
84 Embryonic Development of a Case of Fused Kidneys. E. C. Hill, Baltimore.
85 Review of Some Recent Work on the Musculature of the Heart. W. A. Baetjar, Baltimore.

Journal Missouri State Medical Association, St. Louis.

April.

86 An Historical Sketch of the Movement to Establish a State Sanatorium in Missouri for Persons Having Incipient Tuberculosis. G. Homan, St. Louis.
87 Ocular Manifestations of Syphilis. C. Barck, St. Louis.
88 Are We Not Conservative in Removing Bony Structure in the Foot to Favor Drainage in Septic Infection. J. F. Meuestrina, St. Louis.
89 Duties of the Practicing Physician to the General Public, in Infectious Diseases. A. S. Bleyer, St. Louis.
90 Obligations of the Practicing Physician to His Patient and the Patient's Family in Infectious Diseases. C. H. Powell, St. Louis.
91 Municipal Control of Infectious Diseases. C. A. Snodgrass, St. Louis.
92 Duties of the Board of Education in the Control of Infectious Diseases. W. G. Moore, St. Louis.

Journal of the Medical Society of New Jersey, Newark.

April.

93 Alcoholic Psychoses. F. C. Horsford, Morris Plains, N. J.
94 Uncinariasis. J. H. Harris, San Juan, Porto Rico.
95 Acute Articular Rheumatism. M. J. Synnott, Montclair.

Journal of the Mississippi State Medical Association, Vicksburg.

April.

96 A Few Facts About Hydrotherapy. W. D. Beacham, Felder.
97 Cacodylic Acid: Its Use in Remittent Fever and Allied Conditions. M. F. Wilson, Sardis.
98 Valentine's Apparatus Modified to Suit My Convenience. R. M. Donald, Inverness.
99 Malarial Fever. H. C. Duck, Friars Point.

Texas State Journal of Medicine, Fort Worth.

April.

100 Medicolegal Aspects of Traumatic Ulcers of the Cornea. J. H. Beil, San Antonio.
101 Considerations in Curettage of the Uterus. W. F. West, Waxahachie.
102 Encroachment of the Surgeon on the Field of Internal Medicine. E. Lanphear, St. Louis.
103 Removal of the Uterus, Ovaries and Tubes for Epilepsy. C. E. Cantrell, Greenville.
104 The Insanity of Adolescence. R. B. Sellers, Comanche.
105 Education of Employés in First Aid to the Injured. W. H. Blythe, Mt. Pleasant.
106 Case of Galloping Consumption. W. Shropshire, Yoakum.
107 Rupture of the Uterus. W. A. Bedford, Franklin.
108 A Method of Abdominal Palpation. A. E. Thayer, Galveston.
109 Gonorrheal Affections in Gynecologic Work. C. R. Johnson, Gainesville.
110 Psychology as a Therapeutic Agent. J. T. Benbrook, Rockwall.
111 Typhoid Perforation of the Bowel with Obstruction: A Plea for Exploratory Abdominal Incisions. A. E. Spohn, Corpus Christi.
112 Uterine Retrodisplacements. J. S. McCelvey, Temple.

Journal of the Kansas Medical Society, Lawrence.

April

113 Typhoid Fever. N. Olsen, Clay Center.
114 Id. J. H. Green, Galena.
115 Electrolytic Dissociation; Ion Action of Chemic Salts. B. D. Eastman, Topeka.

Indiana Medical Journal, Indianapolis.

April.

116 Gonococcic Infections and the Physician's Responsibility. A. F. Clark, New York.
117 Lupus Vulgaris. C. J. White, Boston.
118 Simple Fractures of the Shaft of the Femur. H. C. Robinson, Martinsville, Ind.

Oklahoma Medical News-Journal, Oklahoma City.

April.

119 The Best Method of Anesthesia. J. A. Matlock, Bee, Wash.
120 Accuracy in Diagnosis. R. N. Pearce, Howard, Kansas.
121 A Question of Dosage. J. R. Landers, Bernadotte, Ill.

St. Paul Medical Journal.

April

122 Harvard Medical University. T. F. Harrington, Lowell.
123 Cancer of the Rectum. W. J. Mayo, Rochester, Minn.
124 Indications for the So-called Radical Mastoid Operation. J. Allport, Chicago.
125 Macroscopic, Microscopic and Radiographic Evidences of Bone Sarcoma. A. R. Colvin, St. Paul.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

April 21.

1 *Enuresis and Its Treatment. H. Thursfield.
2 Causes and Treatment of Enuresis. P. G. Lewis.
3 *Properties of an Antityphoid Serum Obtained from the Goat. A. MacFadyen.
4 Bacteriology of the Summer Diarrhea of Infants. H. de R. Morgan.
5 Influence of Increased Barometric Pressure on Man. M. Greenwood.
6 *Case of Exophthalmic Goiter. H. T. Dutton.
7 Widespread Motor Paralysis Due to Multiple Symmetrical Peripheral Neuritis. F. W. Price.
8 Pneumococcic Arthritis. W. B. Secretan, and W. Wrangham.
9 Vasodilatation in Hemoptysis. E. T. Smith.
10 Mycetoma (Madura foot) in the Yemen. F. G. Clemow.

1. **Treatment of Enuresis.**—Atropin, used in the form of an extract, or the tincture, or as liquor atropinæ, is the only drug from which Thursfield has derived any good results in the treatment of enuresis. He usually gives 10 minims of the tincture three times a day as the initial dose, and raises the dose week by week up to a dram three times a day. He says it is essential that the dose should be sufficient to produce evidence of its action, and that it be used over a long period. The dose should be diminished slowly until the drug can be dispensed with safety. A period of from three to six months will usually be required to obtain permanent relief. Thursfield employs the belladonna in conjunction with potassium citrate in the majority of cases, and in a few instances, in which he believed that hyperacidity of the urine was the chief cause, he found potassium citrate alone to be efficacious. Another drug which he has found useful, especially in cases of bacteriuria is urotropin (hexamethylenamin, U. S. P.). He says it must be given well diluted. He has used it in a series of thirty consecutive cases with good results in nine instances.

3. **Antityphoid Serum.**—MacFadyen gives an account of the results obtained by the immunization of the goat with the cell juices of the *Bacillus typhosus*. Virulent typhoid bacilli isolated directly from the peritoneal cavity of the guinea-pig were cultivated on nutrient agar in Roux bottles for eighteen hours at blood heat. The growth was brushed off and washed with distilled water in a centrifuge for half an hour. The living bacilli were then triturated at the temperature of liquid air in the author's grinding pot. The time allowed was thirty minutes per gram of bacilli. The resultant mass was taken up in 1 in 1,000 solution of caustic potash and spun for two hours. The fluid obtained represented a 10 per cent. extract of the typhoid cell plasma, along with such bacilli as had not been removed by the two hours' centrifugalization. This was treated with chloroform vapor for half an hour. The cell juices obtained under these conditions were sterile and toxic on intravenous injection into the test animals employed: goats and rabbits.

A goat after receiving doses of 0.05 and 0.1 c.c. died, whilst another after the injection of 0.05, 0.1, 0.5 and 1 c.c., died within four hours after the last dose. The subsequent animals consequently received small sublethal doses which were raised very gradually at duly spaced intervals. One injection weekly proved to be the safest procedure, and the same dose was repeated until it failed to produce any toxic action on the animal. A slightly higher dose was then given and repeated in the same manner. This method proved ultimately successful, as only in this way was tolerance established to otherwise fatal doses of the typhoid endotoxin.

6 **Exophthalmic Goiter.** Dutton suggests that the hypertrophy and overactivity of the thyroid, the exophthalmos, the persistent thymus, the enlarged lymph glands, the increased connective tissue in the neck, the tachycardia, palpitation and tremor, besides the other subjective symptoms of the disease

are symptoms of a lesion of some of the chain of sympathetic ganglia. He sees no reason why ordinary simple goiter and the exophthalmic form should not be varieties of the same disease.

The Lancet, London.

April 21.

11 *The Arterial Pulse: Its Physiology and Pathology. S. W. Curl.
12 The Acute Abdomen. W. H. Battle.
13 *Vaccine Treatment in Surgery. H. M. W. Gray.
14 *Treatment of Malignant Endocarditis by Rectal Administration of Antistreptococcic Serum. N. Raw.
15 Training of Nerve Centers in Children. G. E. C. Pritchard.
16 Case of Ascites Tapped Sixty-nine Times. F. H. Maberly.
17 *New Method of Operating in Pannus. W. Primrose.

11. The Arterial Pulse.—According to Curl the arterial pulse represents in the main the sudden increase of pressure occurring in the arteries as a result of the ejection into them of the contents of the left ventricle, and it travels from the heart to the peripheral parts in the form of a wave, diminishing in size as it passes along. The pulse curve represents the changes occurring within the artery at the part under examination. Its form varies according to the force of the contraction of the ventricle, to the blood pressure, to the condition of the vessel wall, and to the distance of the vessel from the heart. This sudden increase of pressure in the arteries having reached its maximum is followed by a fall, the fall, however, being interrupted by a slight increase of pressure as the dicrotic wave appears; it then returns to the normal.

Of pathologic pulses he found few, if any, characteristic of the diseases producing them; in the large majority of cases no specific alterations are produced. Alterations in the tension occur in arteries which are either naturally small or are so abnormally retracted that one is apt to overlook high tension, and he thinks that in such cases as these the sphygmograph is especially useful, since it may demonstrate high tension hardly appreciable to the finger.

13. Vaccine Treatment in Surgery.—Gray has employed the vaccine treatment, according to the method advocated by A. E. Wright, with excellent results in the treatment of tuberculous glands, tuberculous joint affections, tuberculous peritonitis, psoas abscess, genitourinary tuberculosis, tuberculous disease of the upper air passages, and tuberculous tenosynovitis.

14. Antistreptococcic Serum in Malignant Endocarditis.—From a prolonged use of polyvalent antistreptococcic serum per rectum, Raw is satisfied of its greater efficacy and personal comfort than by injecting it under the skin. He reports three cases of malignant endocarditis in which this treatment was of immense benefit when other methods had failed. During the past eight years Raw has used this serum in more than 200 cases of septic infection of various kinds, such as puerperal septicemia, pyemia, erysipelas, and septicemia complicating typhoid, pneumonia and endocarditis, and he has come to the conclusion that in purely streptococcal infections the serum is of great value, especially when administered by rectum.

The method adopted is as follows: The bowels are freely cleared by aperients and the rectum is gently washed out with a little warm saline solution. The formula for injection is as follows: antistreptococcic serum, 20 c.c.; normal saline solution, 100 F., 40 c.c.; to be gently injected into the rectum morning and evening, or as required. It is found that there is no pain nor discomfort; the serum is rapidly absorbed and seems to exert the same bactericidal influence as when given under the skin; skin rashes are rarely seen and the thirst and dry tongue are relieved. When given in such a small amount there is no difficulty on the part of the patient retaining it and it is rapidly absorbed.

17. New Operation for Pannus.—The operation described by Primrose consists in causing an extravasation of blood into the subconjunctival tissue around the cornea. This by its mechanical pressure and by acting as an irritant foreign body setting up a localized inflammation, causes the obliteration of the vessels which vascularize the cornea. The only instrument required is a small sharp-pointed knife—a Beer's cataract knife does very well for the purpose. The point of the knife is passed through the conjunctiva at a distance of 2 to 3 mm. from the cornea and made to puncture one of the larger blood vessels. The knife is then withdrawn. The conjunctival wound should be as small as possible and made obliquely by holding the knife at an acute angle with that part of the surface of the eyeball which is being operated on. In this way there is no external hemorrhage; but bleeding takes place into the subconjunctival tissues and is arrested automatically by the pressure of the extravasated blood on the blood vessel walls. In like manner, many of the smaller vessels in the vicinity are mechanically closed. The mechanical action is increased by the formation of a coagulum, the fibrinous part of which shrinks and makes the whole mass smaller. By the time the blood clot has disappeared, the blood vessels in the cornea affected by the operation have shriveled up and the cornea has regained much of its transparency. The whole pannus may be treated in this way at one time, or the operation may be repeated from time to time, only a part of the pannus being treated each time. The latter is always advisable when the pannus is marked, as the inflammatory reaction is sometimes very severe and accompanied by a good deal of pain. Although the structures in the anterior part of the eyeball are all more or less affected by the inflammation this is easily controlled and subsides in a few days with the application of suitable remedies.

Journal of Tropical Medicine, London.

April 16.

18 An Insect Enemy of the Disseminator of Human Tick Fever in Angola. E. E. Austen.
19 *Suggestions for the Maintenance of Health by Women in the Mission Field. M. A. D. Scharlieb.
20 Some Striking Facts About Bangkok. R. H. Bremridge.

19. Maintenance of Health by Women in Mission Field.—Scharlieb discusses this subject under the following heads: 1, Preparation for work in the mission field; 2, selection of candidates; 3, allocation of candidates for special work; 4, care of health on active duty, and 5, care of health when on furlough. She advises that in the case of young women proposing to go out as the wives of missionaries there should be a special investigation as to their fitness for maternity. The external measurements of the pelvis should be carefully taken with calipers, and, if any obvious deformity exists, a further examination under anesthesia may sometimes be proposed: loss of valuable lives and much hindrance to work being saved if it is clearly understood that in any given case the wife of a missionary is likely to need specially skilled assistance, and must, therefore, go for confinement to some center where such assistance can be secured. The paper contains many excellent suggestions, but space does not permit of a full abstract.

Indian Medical Gazette, Calcutta.

April.

21 Extraction of Cataract in the Capsule. H. Smith.
22 Intracapsular Irrigation in Cataract Extraction. W. J. Wanless.
23 Insanity, with Illustrative Cases. C. J. Robertson-Milne.
24 Prevalence of Hill Diarrhea in Maymyo. C. C. Barry.

Bulletin de l'Académie de Médecine, Paris.

25 (Year LXX, Nos. 13-14.) *Maladies endémiques, epidémiques et contagieuses qui ont régné dans les colonies françaises en 1904. Kermorgant.
26 *Des verres jaunes dans l'hyperesthésie rétinienne. Leurs indications cliniques. (Yellow glasses in ophthalmology.) Motais.
27 End of Discussion on Statistics and Prophylaxis of Tuberculosis.
28 *6 cas d'inversion utérine traitée avec succès par l'application du ballon de M. Champetier de Ribes, gonflé avec de l'air. P. Mantel and Pinard.
29 *De la déeapsulation rénale et de la néphrotomie dans le traitement des formes graves de l'eclampsie. Chambrelent, Pousson and Pinard.

25. Morbidity in French Colonies.—Kermorgant's official report states that sleeping sickness was noted in all the French colonies in western Africa during 1904, and has depopulated entire villages in the Congo region. Plague was observed only in the Indian possessions, but malaria prevails in nearly all the colonies; it is most serious in Madagascar and Tonquin. It averages about 56 per cent. of the total mortality among the Europeans there. In the Soudan it is endemic throughout the year. All the children, the report states, have enlarged spleens, and the malarial parasite is found in the blood of nine out of every ten children.

26. Yellow Glasses for Sensitive Eyes.—Motais has been prescribing for fifteen years, in cases of ultra-sensitiveness to light, glasses of a yellowish tint, slightly orange, with a

brownish tint on reflection. They increase the perception of light while soothing the eyes. The yellow tint evidently prevents the passage of the chemical rays to some extent. These yellow glasses, he states, will be found far superior to smoked or blue glasses, while they do not impair the vision. When they are taken off even the most brilliant sunlight seems dead and lifeless in comparison.

28. **Inversion of Uterus Reduced with Champetier de Ribes Balloon.**—Mantel has had the unusual experience of 6 cases of complete inversion of the uterus which he was able to reduce with the aid of the inflated bag. In his latest case the inversion occurred during delivery and was easily reduced. Four days later it recurred and reduction then did not seem practicable. After thorough cleansing of vagina and uterus with hydrogen dioxid he introduced the Champetier de Ribes balloon into the vagina and inflated it with air, leaving it in place for twenty-four hours, when conditions were found restored to normal. The balloon was left as a precautionary measure for a week, and no further disturbances occurred.

29. **Decapsulation of Kidneys Plus Nephrotomy in Eclampsia.**—In a case of severe eclampsia, with anuria for forty-eight hours, the kidneys were decapsulated according to Edebohl's technic. Macroscopic and microscopic evidences of acute parenchymatous nephritis were found, and the decapsulation was supplemented by nephrotomy of the right kidney. The nephritic process was manifestly arrested by these measures, and the secretory functions were restored at once. The patient was a primipara of 21. In commenting on this and on Edebohl's cases, Pinard says that many women who die after having presented eclamptic attacks never exhibit anuria, and their kidneys show few if any signs of anything pathologic. In certain cases of eclampsia, however, the symptoms point to a condition which might be called "glaucoma of the kidney." Surgical intervention on the kidneys should be restricted to such cases.

Semaine Médicale, Paris.

30 (XXVI, No. 14.) Les troubles de la sensibilité objective dans la paraplégie spasmodique syphilitique. Noica and S. Marbé.
31 (No. 15.) Le traitement de la tuberculose pulmonaire par le pneumothorax artificiel.
32 (No. 16.) *Etude de l'histologie et de la pathogénie du tabes. G. Marinesco (Bucharest).
33 *Méthode très simple pour déjister la stomatite menaçante, l'intolerance ou la saturation médicamenteuse dans une cure mercurielle. J. Severino (Treviglio).

32. **Pathogenesis of Tabes.**—Marineseo was unable to find the treponema in any of the numerous cases of tabes examined, the findings in the cerebrospinal fluid and in the sections of the spinal cord and posterior roots being invariably negative. In this profusely illustrated article he describes the results of his study of these parts in tabetics with the Cajal staining technic. He found that the nerve elements showed evidences of injury and also of attempts at regeneration. The tabetic lesions are twofold, a degenerative atrophy proceeding from the spinal cord toward the spinal ganglia, and a process of regeneration working in the opposite direction. The latter resembles the regeneration which occurs after section of a nerve. The absence of the treponema in the tabetic lesions and the occasional coexistence of syphilids on the skin or of other manifestations of syphilis with the tabes sustains the hypothesis that tabes is not due directly to the agent of syphilis, but is the result of toxins generated by it.

33. **Simple Test for Impending Mercurial Intoxication.**—Severino has found that existing or impending mercurial saturation can be revealed by touching one or more of the teeth with fresh tincture of iodin. As the patient then wets the teeth with saliva, they turn pink in case of intolerance or saturation, while this does not occur when the mercurial treatment is being well tolerated. The mercury eliminated in the saliva combines with the iodin to form the red bi-iodid if the proportion in the saliva is excessive. The proportion eliminated in the saliva is minimal when the kidneys and other emunctories are working properly, and the test gives negative findings, but when the mercury is accumulating unduly in the system this is revealed by the pink stain of the teeth after they have been touched with iodin.

Archiv f. klinische Chirurgie, Berlin.

Last indexed, page 1482.

34 (LXXVIII, No. 3.) Die Epityphlitis in Wechselbeziehung zu ihren bakteriellen Erregern (appendicitis in mutual relations to its bacterial agents). E. Haim.
35 Experimentelle Unterbindung der Leber-Arterie (of liver). H. Haberer.
36 Ein neuer operativ behandelter Fall von intermittierender cystischer Dilatation des vesicalen Ureter-Endes. C. Adrian.
37 *Ueber Thymus-Exstirpation bei Asthma thymicum. O. Ehrhardt.
38 Gastroenterostomie oder Resection bei Ulcus callosum ventriculi. A. Breoner.
39 *Ueber die Moglichkeit, der Niere einen neuen collateralen Blutzufluss zu schaffen (possibility of supplying kidney with new collateral blood supply). E. Martini (Turin).
40 Microscopic Study of Tumors Treated at Berlin Polyclinic.—Bericht über die vom 1 April, 1903, bis 1 September, 1904, in der Poliklinik der K. U.-Klinik zu Berlin behandelten Geschwülste. H. Coenen.
41 Ueber den Werth der Blut-Kryoskopie für die Nieren-Chirurgie (value of cryoscopy of blood in surgery of the kidneys). A. Kock.

37. **Removal of Thymus to Relieve Asthma.**—Ehrhardt removed the enlarged thymus in a girl of 2 whose trachea was flattened by the thymus. The organ was easily removed, freeing the child at once from her suffocation. He felt justified in removing the thymus, as experimental research has shown that dogs tolerate its removal without disturbances. The child has not apparently suffered any inconveniences from the operation and has been entirely well since; the blood findings are entirely normal. The operation was performed last September. He left the incision open to see whether or not the flattened trachea would resume its normal shape, as it soon did spontaneously. The diagnosis of compression of the trachea was rendered certain by the findings when intubation was attempted.

39. **Possibility of Supplying New Collateral Circulation for the Kidney.**—Martini's numerous experiments on dogs treated by decapsulation of the kidney demonstrate anew that the circulation through the kidney becomes much more extensive after collateral circulation has developed in consequence of the decapsulation. He found that it was possible for dogs to survive after nephrectomy and ligation of the vein of the remaining kidney when the collateral circulation had developed after its decapsulation. This condition was always fatal for dogs with normal, that is, undecapsulated kidneys. The development of new anastomotic routes after decapsulation was unmistakably shown by the passage of gelatin into the kidney through the circulation after all the normal vessels of the kidney hilus had been tied off.

Centralblatt f. Chirurgie, Leipsic.

Last indexed, page 1062.

42 (XXXIII, No. 10.) *Treatment of Acute Suppurative Affections with Passive Congestion.—Zur Behandlung der akuten eitrigen Entzündungen mit Stauungshyperämie nach Bier. N. Kaefer (Odessa).
43 (No. 11.) Der kleine Bauchschnitt als Methode für die Appendix-Exstirpation (small incision). von Eiselsberg.
44 *Zur Operationstischfrage (best operating table). F. de Quervain (Chaux-de-Fonds).
45 (No. 12.) *Treatment of Fractures with Passive Congestion.—Die Behandlung der Knochenbrüche mit Stauungshyperämie. C. Deutschlmender (Hamburg).
46 (No. 13.) *First Aid Dressings and Arrest of Bacteria.—Der erste Verband auf dem Schlachtfelde und die Bakterienarretierung. W. von Oettingen.
47 Suture of Palate.—Gaumennaht. J. Dollinger (Budapest).
48 (No. 14.) *Zur Technik der Rückenmarks-Anälgesie (spinal analgesia). Hackenbruch (Wiesbaden).

42. **Passive Congestion as Postoperative Measure.**—Kaefer states that he gave Bier's artificial hyperemia a thorough trial soon after it was first announced, and was early convinced of its great value. He has used it now in more than 150 cases and always with increasing satisfaction. He makes a practice of applying the passive congestion after operations when the slightest indications develop suggesting the possibility that healing may not be by primary intention. The prompt application of the constricting band or of the suction cup is invariably followed by the subsidence of symptoms of irritation when the wounds are in tissues that had not suppurated before the operation. In the frequent operations for crushed fingers of factory operatives, the wounds are much soiled, but they heal by primary intention when passive congestion is energetically applied.

44. **Operating Table.**—De Quervain expresses surprise that in all the countless operating tables of which he knows no

provision has ever been made to take advantage of the peculiarly favorable conditions for abdominal surgery which are offered when the spine is bent over backward, the lumbar vertebræ in lordosis, and the hip joints in hyperextension. He gives illustrations of an operating table constructed to bring out these points. He has found it a great help in operating.

45. **Passive Congestion for Fractures.**—Deutschlaender is much pleased with the results of the application of Bier's artificial hyperemia in the treatment of fractures. It is, he states, simple and easy and materially shortens the entire process of the healing of the fracture. The callus forms much more rapidly, and, as the painfulness is very much diminished by the passive congestion, functional use of the parts can be commenced much earlier and be much more extensive than under ordinary conditions; this also prevents atrophy after a fracture. The ordinary methods of treating fracture did not aim to promote directly the healing process, until massage was introduced into the treatment. Massage is merely a mild method of inducing hyperemia; the same purpose is accomplished much more easily and effectually by the artificially induced hyperemia according to the method of Bier.

46. **Dressings for Wounds.**—Oettingen had charge of a Red Cross relief corps during the war in Manchuria and made extensive use of a kind of varnish for dressing wounds. He thinks that the chief aims of a dressing should be to carry off the bacteria in the wound by sucking them into an absorbent material and to prevent other bacteria from getting into the wound. He never washed, shaved nor disinfected the surroundings of the wound, but applied this varnish with a brush all around it. A pad of cotton was then laid over this, and it stuck at once immovably to the varnish. The bacteria in the skin around the wound were arrested by the varnish and could not get into the wound. The simplicity, cheapness and rapidity of this technic commend it, he believes, for general adoption. The results surpassed his anticipations. The varnish is applied with a brush suspended from the stopper of the varnish can, and the pads of cotton are provided in separate parchment wrappers so arranged that they are handled only on the outside. The fingers do not come in contact with the wound in any way. The formula for his varnish is: Mastic 20 parts, with chloroform 50 parts, and 20 drops of linseed oil. A more convenient formula is a heaping tablespoonful of mastic with 3 tablespoonfuls of chloroform and 20 drops of any oil. This varnish will be found excellent whenever it is desired to make dressings, flannel and bandages adhere to the skin.

48. **Technic of Spinal Analgesia.**—Hackenbruch advocates making a small incision before attempting to insert the needle for lumbar puncture and analgesia. This renders the procedure very much easier, while the minute hemorrhage from the incision, 0.5 cm. long, washes out any germs that might be introduced by the needle and also the last traces of the antiseptic used in disinfecting the field.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed, page 1062.

49 (XXX, No. 10). 2 Fälle rascher Entbindung mit meiner Methode (rapid delivery with instrumental dilation). L. M. Bossi (Genoa).
50 Zur Eklampsie ohne Anfälle (without convulsions). Esch.
51. Fall von Sectio caesarea in agone. R. Lumpe. Id. W. Nacke.
52 Ein im Privat-Hause ausgeführter vaginale Sectio caesarea bei Eklampsie. Uthmoeller.
53 *Der Magnet als diagnostisches Hilfsmittel und Heilmittel in der Gynaekologie. H. Sellheim.
54 Ein verkalktes Fibrom des Septum recto-vaginale als Geburts-Hindernis (calcified fibroma obstructing delivery). V. Rubeska.
55 (No. 12.) Models of Four Sections of the Pelvis to Demonstrate the Normal Topographic Relations of the Pelvic Connective Tissue.—Modelle von vier Beckenschnitten, etc. W. A. Freund and A. v. Rosthorn.
56 Zur subkutanen Pubiotomie. M. Reeb.
57 Zur Indikation und Technik der Pubiotomie. K. Reifferscheid.
58 *Versuch mit dem Bier'schen Verfahren bei Endometritis chronica (trial of passive congestion). F. Turan.
59 (No. 13.) Fall von Ureterocysto-Neostomie. C. Hein (St. Petersburg).
60 *Ueber die Gefahren der Atmokausis und Zestokausis (dangers). L. Pincus.
61 *Rubber Tube for Breech Extraction.—Ein neues Hilfsmittel bei der Extraktion am Steiss. O. Wienskowitz.
62 (No. 14.) Fall von puerperalem Tetanus nach Abort. P. Seegert.
63 *Postoperativer Tetanus. E. Martin.
64 Extraktion des in partu abgerissenen und in der Uterus-Höhle zurückgelassenen Kopfes (extraction of detached head). H. Rotter (Budapest).

53. **The Magnet as a Diagnostic and Therapeutic Measure in Gynecology.**—Sellheim comments on the diagnostic value of the information derived from the movements of the uterus. He has been studying the movements of the uterus under the influence of a powerful magnet applied outside, with a large soft iron catheter introduced inside the uterus. The iron inside the uterus follows the movements of the magnet outside, and the organ thus changes its position at the will of the examiner. The procedure is not more difficult or serious than the introduction of any ordinary sound into the uterus. The rod has a projecting rim which prevents its slipping in too far; it is a little more than two inches long by nearly half an inch in diameter. The large electromagnet is mounted vertically on a standard with a horizontal rod and weight to balance it, so that it can be adjusted and moved around readily. The physician palpates with his right hand through the abdominal walls while with his left he explores simultaneously the rectum and vagina. The tip of the intranterine rod is kept pointed toward the center of the magnet, thus utilizing the maximum of attraction. The force is sufficient to straighten the retroflexed uterus with no danger of by-effects. It is particularly useful as a means of familiarizing the novice with the uterus, giving the organ into his hands, as it were, for him to study. It is also useful as a means of mobilizing the uterus and preventing the development of adhesions after inflammatory processes and displacements. The alternate lifting and dropping of the uterus can also be utilized as a kind of massage. The moral effect on the patients is also an important factor, as they can feel the displaced organ return to its normal place under the mysterious influence of the magnet. The details of the technic are illustrated.

58. **Passive Congestion in Treatment of Chronic Endometritis.**—Turan gives an illustration of an instrument which he has devised for the purpose of applying suction to the lining of the uterus, according to Bier's technic. It is like a large uterine catheter with four wide slits, 3 cm. long, near the tip. A tube is applied to the outer end, connected with a suction pump. He has applied this method of treatment in 4 cases of chronic endometritis in sterile women. Their affection had lasted for from four to twelve years, and various other methods of treatment had given no permanent relief. He applied the suction on alternate days, for from five to twenty minutes at a time, repeating about twenty-one times. The discharge became less after the first sittings, and grew constantly less until it became minimal. The subjective disturbances subsided also, and the improvement obtained has persisted to date. He practices at Franzenbad and the patients were taking at the same time the regular course of bath treatment there.

60. **Dangers of Application of Superheated Air and of Steam to the Interior of the Uterus.**—Pincus states that an exact diagnosis, exact indications and exact technic are necessary to avoid dangers from atmocausis and zestocausis. Properly done, under proper conditions, the procedure is harmless, painless and effectual, but it should never be attempted unless malignant disease can be absolutely excluded. He preaches that total extirpation of the uterus on account of uncomplicated bleeding is unjustifiable unless atmocausis has been given a thorough trial. He advises it as an adjuvant to curettement, allowing an interval of about seven days to elapse between. The cavity of the uterus must be entirely free from relics of tumor, ovum, placenta, etc., and also of clots, mucus and fluids, with the mucosa anemic. The interior can be prepared for atmocausis with hydrogen dioxid and suprarenal extract. Stenosis or atresia or unintentional obliteration do not belong to correct atmocausis or zestocausis any more than a perforation is a part of correct curettement.

61. **Aid in Delivery with Breech Presentation.**—Wienskowitz uses a rubber tube to slip over the thigh of the child to aid in its extraction. It is easily pushed in and works its way around the thigh and out again without injury to the child or mother. Gentle traction is spread over a large surface and has an

astonishing effect in facilitating delivery. The rubber tubing he uses is strengthened with some linen fibers woven in it.

63. Postoperative Tetanus.—Martin reports a case of fatal tetanus developing after an operation in the Greifswald gynecologic clinic. It had been undertaken on account of perimetritis, endometritis, rupture of cervix and prolapse of the vagina. The first symptoms of the tetanus were observed five days afterward, proving rapidly fatal. Tetanus germs were cultivated from the secretions of the vagina and uterus. Secretions from vagina and uterus of a large number of other patients were tested at the time for tetanus germs, but none was found.

Deutsches Archiv f. klinische Medizin, Leipsic.

Last indexed, page 1563.

65 (LXXXVI, Nos. 4-5.) *Ueber eine typische Erkrankung des verlängerten Markes (of medulla oblongata). L. R. Müller.
66 *Formation of Lactic Acid in Case of Cancer of Stomach.—Milchsäurebildung bei Magenkrebs. K. Sick.
67 Ueber Atropin-Eumydrin-Wirkung bei Magendarmerkrankungen (in gastrointestinal affections). Hagen.
68 *Experimentelle-Untersuchungen ueber die Tuberkulin-Reaktion. H. Bahrdt.
69 Zur Pathogenese des Streptococcus mucosus. M. Otten.
70 Ueber Infusorien im Typhus-Stuhl nebst Beschreibung einer bisher noch nicht beobachteten Art (Balantidium gigan-teum). P. Krause.
71 Zur Lehre von der Adams-Stokes'schen Krankheit. W. Leuchtweis.
72 Ueber Dissoziation von Vorhof- und Kammer-Rhythmus (of auricle and ventricle). R. Finkelnburg.
73 Ueber die Abhängigkeit der Wirkung der fluorescierenden Stoffe von ihrer Konzentration (dependence of fluorescent action on concentration). A. Jodlbauer and H. v. Tappeiner.
74 Ueber die photochemischen Wirkung der Stoffe der Fluorescein-Reihe zu ihrer Fluorescenz-Helligkeit und ihrer Licht-Empfindlichkeit. H. v. Tappeiner.
75 *Zur Klinik der umschriebenen Entzündungen des Dickdarms und seines Peritoneums (circumscribed inflammation of large intestine, etc.) A. Bittorf.
76 Changes in Shape of Heart Muscle Nuclei-Formveränderungen der Herzmuskelkerne. E. Förster.
77 (No. 6.) Studies of Metabolism of Albumin.—Ueber den zeitlichen Ablauf der Eiweisszersetzung im tierischen Organismus. W. Falta (His' clinic, Basle).
78 *Ueber die Behandlung der Angina pectoris und verwandter Zustände durch Heil-Gymnastik und Massage des Thorax. K. Hasebroek.
79 Albuminoids in Albuminous Urine.—Eiweisskörper des eiweishaltigen Harns. O. Gross.
80 *Fall von Morbus Addisonii infolge entzündlich-hyperplastischer Wucherung beider-Nebennieren auf traumatischer Grundlage. R. Börrmann.

65. Typical Affection of Medulla Oblongata.—Müller's patient was a man of 46 who used alcohol and tobacco freely and worked constantly under intellectual strain; he had suffered for ten years with paroxysmal headaches and brief attacks of vertigo. After a severe headache of several days' duration, ataxia of the right arm and right leg developed, with crossed sensory disturbances, and right paralysis of the vocal cords. The mind was not affected. The patient succumbed not long after to aspiration pneumonia. The autopsy revealed considerable arteriosclerosis and thrombosis of the right vertebral artery from the first cervical segment to its junction with the basilar artery. The consequence was a focus of softening running through the right half of the medulla oblongata. Crossed hemianalgesia can thus be produced by a narrowly circumscribed lesion in the medulla oblongata, and always indicates a bulbar affection. The parts affected are those which remain intact in case of glosso-labial paralysis.

66. Lactic Acid Formation in Gastric Cancer.—Sick has been investigating 31 cases of cancer of the stomach in which the diagnosis was dubious. He summarizes the conclusions of his findings in the statement that the long lactic-acid bacilli do not flourish in the stomach unless there is a more or less complete lack of free hydrochloric acid in the gastric juice. Disturbances in the motor function also favor their proliferation, but the most important factor for their growth and for lactic acid fermentation is the product of the autodigestion (autolysis) of a cancer, that is, the soluble albuminoids produced by the cancer. The long bacilli are found in patients with lacking or insufficient acidity, and even in the mouths of healthy persons, but they never flourish so luxuriantly as in case of an ulcerating cancer. If there is very little albumin in the stomach, or if it has been coagulated by boiling, very little lactic acid is formed; the volatile fat acids predominate. Addition of albuminoids in the form of extracts of carcinoma or of the thymus or other organ particularly rich in cells, is followed by a rapid increase in the production of acids, with the ether-soluble acids predominating, especially lactic acid. This action of the tissue extracts on the metabolism of the bacteria is probably a fermentative action. The determination of the volatile fat acids is, therefore, not so decisive as the evidence of lactic acid.

68. Study of Tuberculin Reaction.—Bahrdt writes from Marburg to describe some of the points learned in regard to the experimental tuberculin reaction in the course of von Behring's researches. The most important, perhaps, is the fact that a progressive tuberculosis of moderate virulence in a guinea-pig is paralleled by a progressively increasing susceptibility to the action of tuberculin.

75. Circumscribed Inflammation of Large Intestine and Its Peritoneum.—Bittorf called attention some time ago to acute inflammation of the sigmoid flexure, and later experience has confirmed his statements. He has now had occasion to observe 20 such cases, including 3 or 4 with exudation. In 23 cases of pericolitis, 19 were accompanied by exudation, which is much more common when the colon is involved. He gives here a number of histories to show the varying syndromes in case of circumscribed inflammation of the large intestine and its peritoneum. Stomach symptoms may predominate and be the only subjective ones. In one case, a scrofulous boy of 7 exhibited a typical epileptic seizure, his first and last. Extremely painful resistance was found in the region of the sigmoid flexure. Bittorf regards the case as one of true epilepsy. The transient intoxication from the inflammatory intestinal process induced a condition of the brain similar to that which is assumed to be the foundation for epilepsy. In another case there were icterus, cramps in the calves, and enlargement of the spleen, with the characteristic tumefaction and sensitiveness of the region of the sigmoid flexure. The enlargement of the spleen persists in the cases with a chronic tendency.

78. Treatment of Angina Pectoris with Swedish Gymnastics and Massage.—Hasebrock has been treating angina pectoris for years at his Zander Institute in Hamburg. The results have been very gratifying in a number of cases, the frequency and severity of the attacks being evidently much modified. In others the results were negative. Even when the heart and its arteries are not intact the exercises were liable to improve the condition, restoring the pulse to normal and the patient feeling generally very much better. He remarks that the mechanical treatment of the circulatory system is still in the empiric phase, both in practice and in theory. The gathering of material is the main point now. The advantages of mechanical gymnastics are being appreciated more and more; especially in angina pectoris they have proved most valuable adjuvants. His experience has demonstrated that the cases amenable to this treatment are those in which the trouble is probably a sensory reflex neurosis. This can be determined by the discovery of a pronounced sensitiveness to pressure on palpating the left thorax, most intense in the region of the apex beat, extending in the interspace from here to the axilla, or else the finding of tender points at some of the emerging points of the intercostal nerves to the left, close to the sternum, between the second and fourth ribs. In the obese, especially in women, there may be a striking sensitiveness to pressure in the left mamma or its base while the right side is free from this tenderness. The presence of these tender points renders plausible the assumption that the attack of angina pectoris is due to a sensory reflex neurosis. If the sensitiveness of these points can be reduced the angina pectoris will be favorably influenced and possibly the attacks may be banished altogether. The peripheral vasomotor system is acted on, and the blood is drawn to the periphery by suction, not by central propulsion. The effect of the gymnastics is not on the heart directly; it acts on the periphery, outside of the heart. He gives the details of 8 cases showing marked improvement. The patients were men from 43 to 55 years of age, and one woman of 49. He describes also other cases in which remarkable relief was obtained and the general health much improved by the exercises, although when the patients finally succumbed, months afterward, the autopsy disclosed pronounced arteriosclerosis and atheromatosis. He gives the details of these cases to show that there is no immediate danger from the exer-

cises even in these serious conditions. He always noticed that the success of the treatment was marked, both subjectively and objectively, as soon as the pulse was restored to normal and the arterial tension reduced. The exercises do not interfere in any way with simultaneous internal treatment.

80. **Addison's Disease on Traumatic Basis.**—Börrmann reports a case which he had opportunity to observe for four years with the postmortem findings. There was not a trace of anything to suggest either tuberculosis or syphilis. The patient, a man, had fallen on the edge of an open trunk, hitting the region of the right suprarenal. He never quite recovered from the accident, and in the course of a year developed symptoms of Addison's disease, to which he succumbed three years later. Both suprarenals were found transformed into large, hard tumors with necrosis in the center, and no trace of suprarenal substance could be discovered. The solar plexus was mostly included in the tough, fibrous mass forming the tumors. It is the first case on record, he says, of true Addison's disease of unmistakable traumatic origin. The article is illustrated with two colored plates.

Muenchener medizinische Wochenschrift.

Last indexed, XLIV, page 1571.

81 (LIII, No. 9.) *Das Verhältnis zwischen Spirochæten und den Organen kongenital syphilitischer Kinder. E. Gierke.
82 *Neurologische Beobachtungen und Untersuchungen bei der Rückenmarksanästhesie mittelst Kokain und Stovain (spinal anesthesia). R. Finkelnburg.
83 *Ueber die hohe Mortalität der Perityphlitis während der Gravidität. H. Füth.
84 Die Autolyse in menschlichen fettig degenerierten Organen. Waldvogel.
85 *Die Erfolge der Desaultschen Operation des Kieferhöhlen-Empyems (maxillary sinusitis). W. Koellreutter.
86 Ueber isolierte, subkutane Fissuren der langen Röhren-Knochen (of long bones). Giese.
87 Zur weiteren Kasuistik der Bauch-Kontusion (of abdomen). A. Riedel.
88 Fatal Benzin Intoxication and Postmortem Findings.—Ueber tödliche Innere Benzinvergiftung un Insbesondere den Sektionsbefund bei derselben. G. Burgl.
89 Eine neue Inhalations-Vorrichtung. Gernsheimer (Mannheim).
90 Instrument for Threading Needles.—Fingerfreies Einfädeln. J. Hertzka (Beneschau).
91 Behrings Diphtherie-Serum und Homöopathie. R. Stüve.
92 Zur Behandlung des Schweissfusses in der Armee (sweating feet). Fischer.
93 Die Pest auf Madeira. J. Goldschmidt.

81. **The Treponema Pallidum and Congenital Syphilis.**—Gierke remarks that the question of the etiologic importance of the treponema has entered a new phase since the positive findings in sections of tissues. The best results were attained with the Cajal stain for axis cylinders: Saturation with a 1.5 per cent. solution of silver nitrate for three days in the incubator at 38 C.; then rinsing several times briefly with water and placing for forty-eight hours in a mixture of 4 parts pyrogallic acid, 5 parts formol and distilled water to 100 parts in a brown vial; after brief rinsing, then dehydration in alcohol, then xylol and celloidin or paraffin imbedding. Gierke reports his various positive findings in 11 cases of congenital syphilis. He obtained positive findings in tissues that had been preserved for years, especially those kept in formol. His findings also prove that the treponema long resists the effects of maceration.

82. **Neurologic Study of Spinal Anesthesia.**—Finkelnburg regards the present technic of lumbar analgesia as a great improvement over the first methods. Cocain spares the tracts which serve for reflex action, while these are affected first and most prominently by stovain. With stovain the tendon reflexes first feel the effects of the drug and are the last to recover, while the effect on the sensory and motor tracts is felt last and is the first to pass away. This different action of cocain and of stovain on the tendon reflexes demonstrates anew that these differ from other nerve tracts. They are evidently more sensitive to mechanical and toxic influences. Individual variations seem to play a subordinate rôle, although the period of extinction of the reflexes may vary in length, probably from differences in the circulation of the cerebrospinal fluid, as it takes a longer or shorter time to wash away the drug from the nerve elements.

83. **Appendicitis During Pregnancy.**—Füth states that out of 42 cases on record 22 of the women died, a mortality of 52.3 per cent. He ascribes the gravity of appendicitis during pregnancy to the displacement of the cecum by the enlarging uterus, bringing the appendix close to the liver or uterus. In the cases on record, 10 of the patients were in the second or third month of the pregnancy and 3 died; of the 32 cases in which the pregnancy was in the fourth to the ninth month, 19 of the patients died. Out of the total 42 cases, an operation was undertaken in 37, and in 4 it was done within forty-eight hours of the first symptoms. In only one instance in this last group the pregnancy proceeded undisturbed and the patient recovered. Abortion and death ensued in all the others. The abortion possibly may have rendered conditions more serious. If the tendency to abortion in these cases can be controlled with opium or other measures, it may be possible to save more of the patients with appendicitis occurring during pregnancy.

85. **The Desault Operation for Maxillary Sinusitis.**—Koellroetter expatiates on the superior simplicity and convenience of the Desault technic. It is the only one, he states, that allows adequate after-treatment and absolute restitution of the relations between the sinus and the nose and mouth. The main point is careful after treatment.

Grèce Médicale, Syra, Greece.

Last indexed, XLIV, page 1571.

94 (VI, Nos. 7-10.) *Prophylaxie des fièvres palustres. J. P. Cardamatis.
94 (VI, Nos. 7-10.) *Prophylaxie des fièvres palustres. J. P. rhée. A. Gioumoucopoulos.
96 Histoire de la médecine. C. Smyrniotis.
97 (Nos. 15-20.) *De quelques types de fièvres dites paludéenes sans plasmodies (malarial fevers without plasmodia). T. Triantaphyllides.
98 (Nos. 31-24.) *Etude de la scarlatine et de l'éruption scarlatineuse. N. G. Macrides.
99 (VII, Nos. 1-9.) *Le paludisme et les cardiopathies. T. Triantaphyllides.

94. **Prophylaxis of Malarial Fevers.**—The professor of hygiene and bacteriology at Athens, C. Savas, has written a book of instructions in regard to the protection of individuals and communities against malaria. The Grecian government has adopted the work officially and had thousands of copies distributed gratuitously to physicians and others. The work quotes freely from similar pamphlets issued by the Italian and other governments, with maps showing the location of the marshes which are so prevalent in Greece. Malarial fevers cause fully one-third of all the internal pathology in the country, estimated at an annual average of about 9,000 cases with 68 deaths to each 100,000 inhabitants. Malaria is more frequent and more destructive in Greece than in Italy. Among 153,158 patients treated in 43 hospitals in Greece during the five years 1893-1899, 61,125 suffered from malaria, and of this number 56,127 cases were of the intermittent and 127 were of the pernicious type, the latter including 113 comatose cases. An absolute immunity has never been observed in Greece, but a brief relative immunity has occasionally been noted. When residing in a hotbed of malaria, Cardamatis never encountered an individual who had entirely escaped malaria infection. In regard to the mosquito host, the *Anopheles superpictus* and the elaviger are incriminated. While amply sustaining the mosquito transmission of malaria, Cardamatis asks whether some other factor may not be responsible for the epidemics of malaria which follow extensive turning up of the soil in public works of various kinds. He has frequently had occasion to observe epidemics of this kind at Athens and elsewhere in Greece. Savas preaches the necessity for complete isolation of the malarial patient, asserting further that the complete cure of a single individual who has relapses during the winter is more effectual for prophylaxis than the cure of a hundred persons having their first attacks during the mosquito season. He advises administration of quinin all the time in the severer cases and at the time of the sweat and a little after in the mild cases. He announces that common lime, which is very abundant and cheap in Greece, is an effectual means of killing the larvæ in standing water. Unslaked lime thrown into the water will destroy the larvæ in the water and more promptly still at from 1 to 5 per cent. The lime must be of good quality, thoroughly baked, and the powdered form is better than lumps.

95. **Hydrotherapy for Spermatorrhea.**—Stimulating hydrotherapy should be avoided, but tepid douches along the spine, according to the experience of this writer, will be found useful. They are preceded and followed by a cold douche applied to the front and limbs, carefully avoiding application of cold to the spine. He has cured a number of cases of spermatorrhea by this form of treatment.

97. **Malarial Fevers Without Plasmodia.**—Triantaphyllides has had occasion to observe at Batoum a number of patients who presented apparently the malarial syndrome, but without the malarial parasites in the blood. In a case of this kind the individual had had malaria eighteen years previously. His symptoms were chills, intermittent fever and enlargement of the spleen. No plasmodia, however, could be detected in the blood with the most searching examination. He suggests the existence of a "malarial diathesis" as an explanation for such cases. The organism of an individual having suffered once from chronic malaria, responds in a special manner to disturbing causes, autointoxication, etc. This explanation can not apply to the acute cases; they must have some other origin than in paludism, some other infection, possibly telluric also, but of other nature than the plasmodian infection. These fevers occur at any season, usually in the fall or winter. The chill is not very decided, and the fever is not so high as in true malaria. The paroxysms recur generally every day, but without the invariable regularity in recurrence, duration and intensity of true malaria. There may even be two attacks in one day, which is never observed in case of the plasmodian fever. The complexion is not so clay-colored as in true malaria. The attacks may recur for several months and are not influenced by quinin. Dampness seems to be one of the causes of this group of pseudo-malarial fevers. Damp, badly ventilated dwellings or the proximity of a garden or wood with too dense foliage were noted as possible factors in some cases, and change from these surroundings was always followed by a cure. The populace have a tradition that dampness causes malarial fever, but this fever is not always malarial. He cites 9 cases in which the fever assumed a subcontinuous or remittent type. The abrupt invasion, the general phenomena accompanying the marked enlargement of the spleen, the cyclic course of the fever, the absence of any localization and of typhoid symptoms and the termination with a crisis on the seventh or eighth day differentiate it from the diseases with which it might be confounded. He has no suggestion to make as to what the infection can be, only that it is not malaria. Children are most frequently affected. Malarial antecedents were noted in only about half the cases. Besides these two groups he has also had opportunity to study other forms of what was apparently malaria, but without plasmodia. The fever in some cases was simple remittent, in others remittent followed by intermittent, and in others remittent accompanied by congestion of the lungs. Quinin does little good in these cases. He is convinced that a great many affections are now being erroneously classed with malaria which have nothing in common with it.

98. **Treatment of Scarlet Fever.**—Macrides affirms that the essence of scarlet fever is the more or less complete suppression of the functions of the sweat glands, thus causing serious autointoxication by the lack of the sweat secretion and of normal elimination of waste matters by this route. In measles the prognosis is better the more marked the rash, but in scarlet fever, the reverse applies; the more extensive the eruption the severer the case. The skin feels dry and parched; the skin in measles is always more or less moist, even in the patches of rash. The scarlet-fever rash is more like a burn and feels as if varnished. The redder the skin, the graver the infection, the higher the temperature, the more serious the prognosis. The kidneys seem to be unable to act vicariously, and the amount of urine is rather below than above the normal limit. Treatment should aim to promote diuresis and attenuate the toxic-infection. The disease is self-limited and drugs are useless, if not absolutely harmful, as they are liable to hamper the kidney functioning. Instead of striving to promote the eruption, treatment should be with simple tepid baths progressively cooled, and injections of artificial serum. Antidiphtheritic serum is not indicated and may do harm, as it has a tendency to interfere with kidney functioning. Caffein citrate might possibly be used as a tonic for the heart and to promote diuresis, but all other measures except tepid baths and artificial serum should be avoided.

99. **Malaria and Heart Affections.**—Triantaphyllides has observed 68 patients who exhibited symptoms of some heart affection during or immediately after malarial infection or later. The patients were between the ages of 7 and 40; he excludes from this list all cases of heart affections noted with concomitant malarial nephritis or cirrhosis, as also all patients who were addicted to alcohol and all in whom the heart affection subsided with the malarial infection. These 68 patients were encountered among 12,000 malarial subjects in his practice at Batoum. They form about a third of all his cases of heart affections in general. In 24 the cardiopathy was evidently the relics of a long preceding malarial infection; in others it developed during or immediately after the paludism and pursued an independent course. The heart affection in both of these groups did not present any specific symptoms, but it was evidently the work of the malarial infection, although the plasmodia had vanished from the blood and antimalarial treatment was useless. The assumption that, besides the action of its toxins, the malarial infection may have a direct, specific effect on the heart is corroborated by the other cases observed in which the cardiopathy developed during the attack of malaria and without any other appreciable predisposing or determining cause. In these cases the heart affection ran a course parallel to that of the malaria and yielded with it to quinin after resisting all the usual heart measures. In the majority of such cases the cardiopathy became installed during a recurrence of the malarial infection. The left myocardium and endocardium were most frequently affected. He gives the details of a number of his cases.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers

CARBOHYDRATE METABOLISM (A Course of Advanced Lectures in Physiology delivered at the University of London, May, 1905), with an Appendix on the Assimilation of Carbohydrate into Proteid and Fat. Followed by the Fundamental Principles, and the Treatment of Diabetes Dialectically Discussed by F. W. Pavy, LL.D., F.R.S., Honorary Physician to King Edward VII. Hospital; Consulting Physician to Guy's Hospital. Cloth. Pp. 131. Price, $2.40. Philadelphia: P. Blakiston's Son & Co., 1906.

LEPROSY AND FISH-EATING. A Statement of Facts and Explanations. By J. Hutchinson, F.R.S., and F.R.C.S., LL.D., Glasgow, Edinburgh, Cambridge and Oxford, Etc., Formerly President of the Royal College of Surgeons. Cloth. Pp. 420. Price, $3.25 net. London: Archibald Constable & Co., Ld.; Chicago: W. T. Keener & Co., 1906.

PATHOLOGY, GENERAL AND SPECIAL, for Students of Medicine. By R. T. Hewlett, M.D., M.R.C.P., D. P. H., Professor of General Pathology and Bacteriology in King's College, London; Lecturer on Bacteriology, London School of Tropical Medicine, Etc. Cloth. Pp. 540. Price, $3.25. Philadelphia: P. Blakiston's Son & Co., 1906.

PERJURY FOR PAY. An Exposé of the Methods and Criminal Cunning of the Modern Malingerer. By W. P. King, M.D., Ex-Assistant Chief Surgeon of the Missouri Pacific Railway System. Author of "Stories of a Country Doctor." Cloth. Pp. 312. Price, $2.00 Kansas City, Mo.: The Burton Company, 1906.

BULLETIN OF THE UNIVERSITY OF WISCONSIN, No. 115. Science Series, Vol. III, No. 4. Anatomy in America. By C. R. Bardeen, Professor of Anatomy in the University of Wisconsin. Paper. Pp. 205. Price, 50c. Madison, Wisconsin: September, 1905.

EDUCATIONAL PAMPHLET No. 1. The Young Man's Problem. By a Member of the American Society of Sanitary and Moral Prophylaxis. Indorsed and Recommended for Publication by the Executive Committee. Paper. Pp. 24. Price, 10c a copy. Dr. E. I. Keyes, Jr., Secretary, 109, E. 34th St., New York.

AN ESSAY ON THE GENERAL PRINCIPLES OF THE TREATMENT OF SPINAL CURVATURES. By H. Bigg, F.R.C.S., Ed. Illustrated by the Author's Photographs and Sketches. Cloth. Pp. 240. Price, $2.00 Philadelphia: P. Blakiston's Son & Co., 1905.

X-RAYS IN GENERAL PRACTICE. By A. E. Walter, Captain I. M. S., Superintendent of the X Ray Institute of India. Cloth. Pp. 174. New York: John Lane Company, 1906.

THIRTY-SECOND ANNUAL REPORT OF THE MATERNITY HOSPITAL, 734 South Tenth Street, Philadelphia, 1905. Paper. Pp. 20. Philadelphia: Patterson & White Company.

THE JOHN CRERAR LIBRARY, Eleventh Annual Report for the Year 1905. Paper. Pp. 57. Chicago: Printed by Order of the Board of Trustees, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, MAY 26, 1906. No. 21.

Original Articles

SOME PHENOMENA OF TUBERCULOSIS INFECTION.*

WILLIAM PORTER, A.M., M.D.

Director National Association for the Study and Prevention of Tuberculosis.

ST. LOUIS.

The study of tuberculosis is a many-sided proposition. It is not my purpose now to attempt a full résumé of the subject or to discuss at length any of its more important features, but rather to make certain suggestions which have been the outgrowth of daily contact with victims of this most interesting and universal disease. I omit statistics—encouraging as they are—or detailed description of the methods of limitation and plans of organizations which have already been so effective. My thought is to discuss some of the phenomena of tuberculous infection and possibly to make a few therapeutic suggestions as legitimate deductions.

THE BACILLUS.

Naturally, the bacillus is the central point in most of the experiments and investigations concerning tuberculosis. To some it might seem that almost two decades of study had sufficed to learn all that is to be known of this organism, yet, I believe that we are only in the beginning of our lesson and that so far as specific antagonism is concerned we await the dawn. That the dawn is near at hand there is every promise, even without the final victory. In Germany in 1890, the death rate per 10,000 of population was 28.11 and in 1902 it was 19.04. In Great Britain the death rate has been reduced to 50 per cent. and in some of our Eastern cities almost as much. A recent report shows that in less than two decades there has been a decline of 50 per cent mortality.[1]

It is with new courage then that we study some of the characteristics of tuberculosis and, though the presentations may seem disconnected, there is in them as presented an interdependency that may not be ignored. In regard to the bacillus itself, we need not do more than mention the different ways of conveyance, as in dust, in globules of expectorated mucus, by food or by flies, as shown by Lord[2] a year ago. The vitality of the bacillus has been the subject of many experiments. Twitchell[3] found that dried tuberculous sputum in a handkerchief, woolen blanket or on wood when innoculated, would produce a tuberculous lesion after 70 days. Koch[4] dried sputum at laboratory temperature for from four to eight weeks and found that it would produce tuberculosis in animals. Sawinsky, as quoted by Twitchell, found that sputum subjected to the ordinary conditions of the floor of a dwelling house preserved its virulence for over 2 months. Flock[5] says "Consumption may well be termed a house disease. The house is the place where the tubercle bacillus lies dormant in wait for its new host; it is the place where the new host gets his implanation." While it is true that sunlight and air currents and heat extremes limit the life of the bacillus, yet it may be well to remember that under conditions not infrequent such longevity is possible.

A second observation is that the number of bacilli is not indicative of the stage of progress. At Mount St. Rose, we divide our cases into three classes, according to the evidence from physical examination. The three clinical stages are those usually given in the books. The divisions from the microscopic showing are these: one bacillus in a field, or only one found in several fields, is written down in first class; several in a field, as second class; an average of six places, the case in the third class; from six to ten, in the fourth; and a larger number or "clump" of bacilli, places it in class five or five plus. Now it often happens that patients in the first or early stage clinically, are in class five or even in five plus from the bacteriologic tests. Conversely, though this is more rare, advanced cases may show few bacilli An interesting case is that of a soldier at Jefferson Barracks.[6] Although in the most advanced condition by every test, except that of the microscope, there has never been a bacillus found after repeated examinations, by Major Banister, in charge of the post, or by his assistants. It frequently happens that a great variation in the number of bacilli is found in the same patient at different times, without any physical evidence of change. Hence, I am of the present opinion, that while as a diagnostic evidence the bacillus of tuberculosis is valuable, it does not aid in determining the stage or location of infection, or the prognosis as to time and result. In a recent report[7] by Drs. Ravenel and Irwin, three sterile cases were found among thirty, in which the contents of lung cavities were examined. The absence of bacilli in the early or closed stage will be referred to in speaking of early signs.

ROUTES OF INVASION.

The routes of invasion are worthy of continued investigation. At present the respiratory tract is by many considered the main channel, but with a larger opportunity for investigation than formerly, I am convinced that many more pulmonary cases are directly infected through the lymphatic and blood channels than are recognized by the average physician. The phenomena of invasion by the bronchial route have been studied not

* Read before the St. Louis Medical Society, April 7, 1906.

1. Report of the committee, Drs. Jackson, Otis and Locke, appointed by the Suffolk District Medical Society to investigate the progress of the crusade against tuberculosis in Boston, October, 1905.
2. Boston Med. and Surg. Jour., 1905.
3. Report first annual meeting National Association for Study and Prevention of Tuberculosis.
4. Bacteriology, Sternberg.
5. Med. News, Feb. 20, 1904.
6. Porter: Trans. National Assoc. for Study and Prevention of Tuberculosis, 1905.
7. Studies in Mixed Infection in Tuberculosis.

only clinically but in their pathologic sequence and to such an extent has this study served that it has, until recently, overshadowed the other scarcely less important questions of infection along the lymph channels, or around the arterioles and capillaries by the blood current.

Without dwelling on the bronchogenic development along the respiratory tract, which, to some extent, we have all followed, I would emphasize the value of infection through the lymph channels as a factor in the etiology of tuberculosis. Here again we find three methods by which the bacilli find their way into the lymphatics. First, it is asserted by Behring,[8] who quotes Roemer, that albuminous bodies may pass through the walls of the alimentary canal and into the blood and lymph unchanged in new-born animals but not in adults. Behring fed anthrax bacilli to adult guinea-pigs and these passed through the alimentary tract without doing harm, while eight-day old guinea-pigs similarly treated died quickly. Attenuated bacilli fed to young pigs were found in the blood. Ribbert[9] believes that most cases of pulmonary tuberculosis are hematogenous, and that the bacilli pass through the pulmonary tissue into the lymph channels and to the bronchial lymph glands. From this point they are carried by the blood stream to the lungs, usually to an apex, because of comparative local anemia and a retarded lymph flow which is due to hindered movement from ossification of the first rib.

A most important recent contribution to the study of lymphatic infection is a paper[10] presented to the Section on Laryngology at the fifty-fifth annual session of the American Medical Association by George B. Wood. After recording the results of his most interesting experiments made in the laboratory of the Pennsylvania Live Stock Sanitary Board and citing many authorities, he concludes: "The tonsillar tissue of the throat, because of its peculiar anatomic construction and of its topographic relations, is more liable to become infected by tuberculosis than any other part of the upper respiratory tract. In nearly all cases of advanced pulmonary phthisis the faucial tonsils become inoculated. In about 5 per cent. of hypertrophied pharyngeal tonsils some form of primary tuberculosis will be found. Primary infection of the faucial tonsil is a rarer condition."

Tuberculous adenitis in the cervical lymphatics develops in the majority of cases from infection originating sometimes in the faucial tonsils, but more frequently in the pharyngeal tonsil. The tubercle bacillus is probably unable to pass through the tonsil without having first overcome the vital resistance of the tonsillar tissue.

The danger of systemic or pulmonic infection resulting from a tuberculous lesion in the tonsillar tissues of the throat is about equal to that of tuberculosis of the cervical lymphatics. The lesion to be expected as a resultant infection from the broken-down glands of the neck is a miliary tuberculosis of the lungs. Further than this possibility, tuberculosis of the lymph glands of the neck is more dangerous than a localized tuberculous lesion in any other portion of the body.

As illustrating this proposition, I may briefly cite a case in the observation ward at Mount Rose:

Patient.—A woman, aged 40, had for many months prior to admission, tuberculous infiltration of the cervical glands of the right side. Bacilli were found in the broken-down structures, but consultation with several surgeons determined non-interference because of the extent and the tissues involved. At first there was neither physical nor microscopic evidence of tuberculosis involving the lung, though we made repeated and frequent examinations. Recently, well-marked signs have appeared in the apex, but the infected lung is evidently as yet in the "closed stage." No bacilli were found in the sputum, though I have little doubt but that they will be found.

The tonsils are more resistant to the action of bacterial toxins than ordinary lymphoid tissue. This latter proposition is also well set forth by Dr. Jonathan Wright,[11] and its soundness will be more readily admitted after reading Dr. Theobald Smith's[12] essay, "Some Problems in the Life History of Pathogenic Organisms."

Autoinfection.—This topic deserves more extended notice. I believe it to be one of the most important chapters in the study of the symptoms and care of tuberculosis. Let me briefly call to mind the fact that constipation (with intermittent diarrhea) is found in most cases of pulmonary tuberculosis. It has been shown that bacilli in the sputum may safely pass the impaired gastric secretions, travel the course of the small intestine, and be found in the fecal accumulation in the colon and rectum; or that they may pass into the deeper structures or lymph or blood channels through an uninjured mucosa. It is not a far cry to the conclusion that reabsorption of bacilli with the products of metabolism and decay from the intestinal tract is a potent addition to the primary infection, especially in children, as before quoted from Behrens and I am inclined to believe that the statement holds good with those of more mature age. That this is more than a hypothesis, can, I believe, be demonstrated. There is here a therapeutic suggestion which we try to make practical. In appropriate cases a high enema containing a small quantity of glycerin is given daily for a week. By that time the lower bowel is probably emptied of all scybalous masses. After that, the normal salt solution is used in quantities which can be retained. The exact form of treatment may vary, but the principle is kept in mind. The reduction of temperatures, and in many cases the improvement in assimilation following this part of the treatment certainly suggests cause and effect. The premises may be wrong but the conclusion is encouraging. The fact that other bacteria are factors in temperature increase in tuberculosis does not alter the deduction as to the value of the method.

Large Doses of Creosote are not Indicated.—Following the adoption of the suggestion last mentioned we have been willing to lessen greatly the amount of creosote and its substitutes. In fact, except with the idea of improvement of digestion and nutrition (and I confess my want of faith in this) the use of this class of remedies is almost forgotten in our treatment at Mount St. Rose, where we have had over 800 cases of tuberculosis in 3 1/3 years. Certainly, large doses of creosote, guaiacol, and their carbonates are not given. Here, again, I may be at variance with many of our best observers, but I predict that in another decade, very little, if any of this class of remedies will be used internally in the treatment of tuberculous cases.

EARLY SIGNS OF INFECTION.

One of the most valuable reports of the past twelve months is "The Report of the Committee on Early Diagnosis of Tuberculosis to the National Association for the Study and Preventation of Tuberculosis." This is a topic in itself, but lack of space permits me to mention only a few points. The committee lays great stress

8. Deut. med. Wochft., Sept. 24, 1903.
9. Deut. med. Wochft., April 21, 1902.
10. The Journal A. M. A., May 6, 1905, p. 1125.
11. Med. News, March 4, 1905.
12. Science, Dec. 16, 1904.

on symptoms and signs, indicating a tuberculous infection during the closed stage: i. e., before caseation and breaking down of a tubercle and the appearance of bacilli in the sputum. The symptoms are early, typical, repeated, though possibly slight hemorrhage, increased afternoon temperature and a hacking cough are suggestive but not positive proof.

More important are the early physical signs. Among these are a retardation in the movements over the affected lung portion and a diminution of the excursions of the diaphragm of the infected side shown by Litten's shadow. The use of the blue pencil to mark border line of dullness and points of asymmetry is strongly urged with the stethoscope. The very earliest auscultatory sound is a rough and slightly diminished respiratory murmur, not to be confounded with the sharp puerile murmur of increased function. The respiratory sound loses its smooth quality and (Sahli) becomes impure and roughened. This change is produced by slight inflammatory changes in the bronchioles, the air passing over an uneven surface and through a slightly narrowed tube. It precedes the crepitant râle and all other physical signs.

Of tuberculin, the *x*-ray, and the use of iodin salts to increase catarrhal symptoms, the committee says their value has not been demonstrated and a case will rarely be found in which they would add considerably to the information gained through other sources.

POSTERIOR LESIONS ARE MOST AGGRESSIVE.

Diminution of the percussion note, with harsh breathing and crepitation heard in the upper interscapular region, is suggestive of lymphatic infection and infiltration of the bronchial glands. The cases we have noted of this class run a much more rapid course than those in which the infection has been through the respiratory tract. It is true that the premise is hard to prove, but the fact remains that the cases most difficult to control have been those in which the physical evidence was most marked in the upper dorsal region. I would again urge that no chest examination is complete without most careful investigation of this region.

Extent of local lesion is not always a criterion of the general condition in pulmonary tuberculosis. This may be truthfully said of many diseases, but it is emphatically true, I believe, in pulmonary tuberculosis. We find it so in lobar pneumonia, which is also a specific disease. It is true, likewise, in many conditions of pus poisoning and local infection. It is no new proposition, therefore, but one that has not been given its full value in formulating our diagnosis and prognosis in this disease. An advanced pathologic stage is not incompatible with fairly good general conditions. Such cases, in spite of extensive tissue disintegration, may become chronic, the advance be checked, and the patient live out his expectancy.

In regard to the relation of pleurisy to tubercular pulmonary infection, where so many of recognized authority are at variance, no one man has a right to speak dogmatically. Nothnagel says: "Tuberculosis of the pleura is almost exceptionally secondary and is most frequently associated with tuberculosis of the lungs or bronchial glands." Von Ruck[13] deducts from forty writers and his own experience as follows:

1. The pleural cavities are readily accessible to bacterial invasion.

2. The great majority of pleurisies with effusion which occur in otherwise healthy individuals are due to infection by the tubercle bacillus. This is proved by autopsy findings, by methods of exact diagnosis, and by the subsequent clinical histories of the majority of persons who have been the subjects of such attacks.

3. There is ample evidence to indicate that the so-called idiopathic, dry pleurisies, are likewise usually tuberculous.

4. The subjective symptoms of inflammation of the pleural apices often simulate those of myalgia or rheumatism.

5. In every case of pleurisy, or of persistent pain in the chest or shoulder, which can not be satisfactorily ascribed to other causes, tuberculosis should be suspected and a careful physical examination should be instituted to determine, if possible, the existence of a tuberculous process in the lungs or elsewhere.

6. Even if physical examination in such cases proves negative, the patient should be regarded as tuberculous until the contrary is proved, and should at least be kept under prolonged observation and re-examined from time to time.

7. The application of these principles will often lead to an earlier recognition of tuberculous disease of the lungs, especially, and to the institution of treatment at a period which, in many cases, will secure to the patient most important advantages in his prospects for recovery.

In the face of such evidence it would be foolishness to raise a feeble negative. I know that I have seen cases of pleurisy with effusions that were not tuberculous and that never became tuberculous, but these may have been exceptions. With our present knowledge I should hesitate to say that the majority of cases of pleurisy become tuberculous and Bowditch, Hanford, Barr, Fiedler and others place the proportion as no greater than one-third. If, however, to this one-third we add the number of cases complicating old tuberculous lesions, it will make a high percentage, indeed, for the majority of tuberculosis cases have pleuritic extension and infection.

3886 Washington Boulevard.

13. New York Med. Jour., Sept. 30, 1905.

WAYS TO COMBAT EVIL.*

HON. CHAMPE S. ANDREWS.

NEW YORK CITY.

1. An authentic source of supply for facts concerning the evils complained of, is an absolute necessity.—No amount of mere abuse will end the "patent-medicine" swindle. The catalogue of crimes and abuses with which the "patent-medicine" man stands charged must be backed up before the public and before legislative committees by cold, hard facts. An abusive statement left unverified reacts against the cause of the enthusiast who makes it; neither will the collection of facts once made remain accurate. The "patent-medicine" man, smoked out of one swindle, plans and executes another, shifting his methods to suit the dangers of every situation. "And even in pennance planning sins anew." When the continuance of one swindler is made impossible by exposure, he falls by the wayside, but others rise to take his place. The ingenuity of crime has been commented on since the dawn of civilization. If "patent-medicine" swindles are to be permanently stopped, there must be an opposition gathering evidence as rapidly as it is made. Eternal vigilance is an essential element in the character of any effective opposition to the "patent-medicine" trust. Those who enlist in the fight should have some central source at which to apply for unvarnished facts, and there should be some central bureau to which every man finding proof of fraud could send the information

* Read before the Philadelphia Society of Medical Jurisprudence, March 19, 1906.

for the general welfare. What is true of "patent-medicine" men is true of quacks generally.

2. The facts once collected should be given widespread dissemination.—When the people are once informed of the true facts of the vile business, its source of revenue will be best attacked. No person will knowingly walk into the lion's mouth. The "patent-medicine" business exists only to make money. Stop the revenue and the fraud dries up of its own accord.

There are many ways in which can be conducted the work of educating the public through the dissemination of specific facts concerning the various "patent-medicine" crimes.

The most effective way is to secure the co-operation of societies already well organized, and particularly of those societies that are professional, philanthropic and religious. A few may be indicated as follows:

PROFESSIONAL SOCIETIES.

The medical profession, in order to add to its supply of knowledge, is given to organization for the purpose of disseminating scientific information. The national body, known as the American Medical Association, the Medical Society of the State (and County) of New York and the other organizations of medical men, even those in the smaller towns in the country, will beyond a doubt lend their aid to any well-organized movement to bring home to the American public a realization of its present degradation brought about by the "patent-medicine" evil and habit.

The influence of the medicolegal societies, such as the excellent Medicolegal Society of New York, must not be forgotten. They have already done some excellent work in exposing quackery, and will certainly lend their aid to further systematic work along broader lines.

Dr. Prince A. Morrow, president of the new society, entitled The Society for Sanitary and Moral Prophylaxis, says that in combating the social evil and the venereal peril this new organization will give every encouragement possible to the exposure of quacks and quack medicines that have done so much to break down the health of many young boys of America.

PHILANTHROPIC AND RELIGIOUS SOCIETIES.

One hardly knows where to begin in mentioning the list of public-spirited organizations of a philanthropic nature that would co-operate in this work of education. In every community there are great numbers of societies, composed of God-fearing men and women who would rejoice at the opportunity to uplift their fellowman and protect him against the avariciousness of the quack and "patent-medicine" charlatan. As typical of these organizations, mention may be made of the Women's Christian Temperance Union and the Young Men's Christian Association.

The W. C. T. U. has already done some substantial work along the educational lines suggested. They have valiantly fought to expose those so-called medicines that are nothing more or less than cheap whisky in disguise. The reason they have not done more lies in the fact that they have not the facilities of the specialist in unearthing the frauds, or in bringing the offenders to justice. The Y. M. C. A., with its well-equipped reading rooms and the excellent system of lectures to young men, could do a great deal toward spreading accurate knowledge of the dangers to young men who rely on the alluringly false advertisements of those medical frauds who make young men their especial prey.

Various Protestant denominations have their young people organized into societies of various kinds. These in turn affiliate with the young people of kindred denominations, and the influence of these combined societies is one of the great moral forces of the day. Could they do a better work than in assisting to uplift the "patent-medicine" drunkards, or in bringing home to themselves and to their friends the dangers lurking in the vile drugs so freely advertised in their daily papers? In this work, the influence of the Roman Catholic clergy, if properly enlisted, would be tremendous. More than once have I seen earnest priests at the meetings of professional societies, where some of the evils we have been enumerating were discussed, and if even a few of the dangers could be accurately stated and proved to them, I feel no hesitancy in saying that they would be the first to co-operate. The Jewish hospital societies, and the various Jewish charitable societies working among the Jews of the "East Side" in New York, only wait an organized movement to lend their aid to a work the importance of which to the tenement dweller can not be overestimated.

3. A counter attack should be made by subscribers on newspapers that accept advertisements of "patent-medicine" swindles.—Just as the "patent-medicine" man quits business when its revenue ceases, so will the newspaper cease to be the "patent-medicine" man's ally when people refuse to pollute their homes by bringing into them papers and magazines containing foul advertisements exploiting quacks and vicious remedies. A society of 100,000 members, stretching from coast to coast, each member of which refused to read newspapers and magazines containing improper medical advertisements, would mark the beginning of the end of the "criminal alliance between quacks and newspapers."

4. The text-books on physiology and hygiene in our schools should have some space devoted to the dangers of "patent medicines" and indiscriminate dosing.—It is difficult to overestimate the influence exerted against "King Alcohol" by the schools employing text-books on hygiene and physiology telling of the dangers of indulgence in alcohol. Let the work be carried to its legitimate end! Let these books give the analysis of scores of "patent medicines" containing dangerous amounts of alcohol and opiates. Let the untruths contained in false advertisements of such medicines be mercilessly exposed.

5. Evidence should be systematically laid before the postal authorities, showing that "patent-medicine" men and quacks generally are using the mails for fraudulent purposes.—If newspaper advertising, and false literature generally, is the life-blood of the "patent-medicine" business, the United States mail is the heart that sends the blood through veins and arteries. Let the society of 100,000 members demand a rigid enforcement of the laws against fraudulent use of the mails, and let the society, if necessary, supply the technical information in a few cases, and the government, which is your government and mine, will not always turn a deaf ear.

6. Penal laws in any way bearing on the evil should be enforced as systematically and thoroughly as possible.—The quack and "patent-medicine" man is not afraid of mere talk. He insolently refers to it as "hot air." But when the majesty of the law says his business is fraudulent and he a criminal, the mighty fabric of this billionaire business must eventually totter and fall. A society of 100,000 people helping to enforce these laws would not be long in putting them in motion.

7. Evidence of the far-reaching dangers of "patent-medicine" swindles should be systematically laid before our various state legislatures and persistent demands

made for such legislation as is necessary to abate the evil.—Already we have some valuable laws applying directly to these evils. But more are needed, and the need would long ago have been supplied if the "patent-medicine" man and the "patent-medicine" lobby had not blocked the way. These obstructions must be cleared by a society of 100,000 members, each one helping to do so.

PROPOSED SOCIETY FOR THE PRESERVATION OF THE PUBLIC HEALTH.

I happen to know that the many recent articles exposing the evils of "patent medicines" have been read with absorbing interest by "patent-medicine" conspirators. Naturally enough, they hope these exposures will end without any permanent remedy for the future.

As they have read the several recommendations for the abatement of the evil above set forth, it is not difficult to imagine these wealthy gentlemen saying to themselves: "If these forces could be practically put in motion our ill-gotten millions might be in danger. However, so long as the influences which might destroy us are not organized in their effort, and have no guiding hand, our wonderful 'patent-medicine' trust, backed by money and brains, can beat the public at every turn. The effect of a few exposures will soon be forgotten by the public with its proverbially short memory."

The truth of that comment no one is prepared to admit sooner than I. It is a comment, however, applicable in every fight against organized crime and entrenched evil. Abuses of every sort thrive for the most part because no one person or no one organization make it a duty to suppress them. For an elaboration of this theory see the writer's article in the October, 1904, *Forum*, entitled "Private Societies and the Enforcement of the Criminal Law." If an evil really exists, there are always forces for good powerful enough to destroy that abuse, provided those powers are unremittingly and diligently and honestly directed.

The "patent-medicine" evil has existed in this country more than in any other country, practically unmolested, save for the desultory attacks here and there by public-spirited people. Some few physicians in a small way have exposed the evil. Attention has here and there been called to it, and flagrant instances of the evil have come to the surface. Unlike most abuses in our national life, however, the "patent-medicine" criminal has the newspaper for an ally. Other abuses that must fall before organized public opinion, to a large extent aroused through the public press, are easier to overthrow than the "patent-medicine" evil. This evil thrives with the connivance of a large part of the press. If the "patent-medicine" man can not advertise, his business dries up and is blown away. Many newspapers in accepting his advertisements agree to suppress information detrimental to the vile business. The "patent-medicine" man bribes a large part of the press through money paid for advertising.

This element in the problem alone makes the suppression of the "patent-medicine" evil one of the most difficult questions now confronting the American people, but the evil can be suppressed, provided some organization with courage and ability, and money enough behind it, will make a business of suppressing it. The "patent-medicine" men are organized as well as an army, and to beat them their opponents must in turn have an organization complete and perfect and well equipped. After a great many years of thought devoted to the subject and a practical experience of over six years in enforcing the laws against quackery in the county of New York, I am of the opinion that the evil will never be suppressed until a society is formed charged with the duty of fighting quackery all along the line. This society could be the directing brain that could concentrate all the powers for good that can be used in the suppression of the "patent-medicine" man and quackery generally.

OUTLINED SCHEME OF ORGANIZATION.

Such a society could be formed along the following lines:

A charter should be applied for, either under the general corporation laws of the State of New York or by special act of the legislature. New York is suggested as the most advisable state because the fight against quackery has been conducted here more systematically than in any other state in the Union, and because the opponents of quackery can be better organized from New York than from any other point in the United States. A charter from Congress would possess some advantages not obtained by incorporation in a single state.

This society should have the necessary number of officers, and care should be taken to place in offices requiring active work only those men who will go on the firing line. The honorary offices should be distributed to public-spirited men, whose names alone will strike terror to the opposition. Rich spies of the "patent-medicine" trust must be detected and denied a place in the councils of the new society.

Certain standing committees must be provided for in the organization of the proposed society. One committee, for instance, should be charged with the duty of advocating and encouraging all legislation directed against frauds in "patent medicines." This committee should meet the well-organized lobby of the "patent-medicine" trust in every legislature of the United States, and with the facts at its disposal expose the evils of "patent medicines" in our legislatures, and at the same time bring public sentiment to bear in every state where the battle for reform is waged.

Another committee should have charge of the distribution of literature and the dissemination of information placed at its disposal by another committee whose duty it will be to collect it. The services of an expert analytical chemist must at all times be at the disposal of this committee.

Another committee, composed entirely of medical experts, will supply the necessary expert testimony, either at public hearings or in the prosecution of criminals, in the courts of law or in the form of written articles and lectures.

Another committee will have charge of the enforcement of the criminal laws now on the statute books, and so on, until each one of the forces for good mentioned above is being supervised and guided by an intelligent committee charged with the power and interested in the work.

Such a society will naturally become the proper source of authoritative information on the abuses of "patent medicine" and quackery, and the agents and investigators of such a society will be always at work gathering information, systematizing it, indexing it and making it generally available for the committees charged with the use and dissemination of this information.

MEMBERSHIP OF THE PROPOSED SOCIETY.

A mistaken idea prevails in many quarters in regard to the duty of the medical profession in suppressing "patent medicines" and quackery. Many think that physicians band themselves together to fight this evil for selfish reasons, failing to realize that the physician

profits much more than he loses by the indiscriminate practice of men with no knowledge of medicine. Sooner or later the victims of the quack and of the "patent-medicine" man must fall into the hands of the skilled physician, whereas, if they were treated by him in the first instance, their health might have been preserved with but little effort.

The physician has led the way in this work because of his public-spirited interest in it. The physician, more than anyone else in the community, realizes the dangers of quackery, and he has tried to suppress it because as a physician he feels it his duty to relieve suffering wherever he could. But the physician can not fight the evil single handed. The physician has been fighting our battle, the battle of the public, for an hundred years and more, and it is time for the public to rally to the support of the common cause.

Medical men would no doubt take a leading part in the activities of the proposed society for the preservation of the public health, but they should not be expected to do it all. At least 50 per cent. of the membership in the proposed society should be laymen of influence and standing in the community.

FINANCIAL SUPPORT.

One more vital point in connection with the proposed society remains to be discussed. The "patent-medicine" man makes his money by millions, and he is a liberal spender when it comes to protecting his interests and extending the fields of his activities. These men employ skilled counsel, they have shrewd agents working in their behalf, they have immense financial resources, and they have a well-organized lobby. To be sure, they have not right and the public interest on their side, but they have everything else for the accomplishment of their purpose.

The society to oppose them must have financial backing strong enough to make its work effective. The proposed society might have several classes of members. The ordinary annual member to become such by contributing $5. A life member to become such by contributing $100, and an honorary life member by contributing $500.

It has become too much the fashion nowadays for people to expect donations and endowments from the public-spirited millionaires of America. Many people seem to think that all one has to do to get money from these men is to request it for any cause that seems to them to be good. They forget that most of these public-spirited men of wealth carefully investigate applications to their bounty, and are careful to aid only the most deserving causes. It is my belief that those gentlemen who, by their benefactions in the past, have shown an interest in the spread of medical science, in the spread of education and in the upbuilding and uplifting of human life and the purity of the American home, if they understand the plan and scope of the society for the preservation of the public health and are convinced that it is in responsible hands, will rally to its support to whatever extent it becomes necessary.

But something more than money is needed by the new society. If its influence is to be felt throughout the United States, it must have a large membership. The moral force that comes from an organization of thousands of public-spirited men and women engaged in a good cause, must be one of the chief assets of the new society.

To that end, people in every state and nation, who are interested in the work, would become charter members of the new society.

When the work of the Society for the Preservation of the Public Health becomes a reality, and it enters into the discharge of its herculean task, every member of it can feel that he or she is taking an active part in the suppression of an evil which, if permitted to spread much further, would strike at the vitals of our national character. And the proposed society must come sooner or later. It is a necessity. The only question is who will launch it, and when? Will the American Medical Association seize the present psychological moment and begin the formation of this life-saving society?

No claim of originality is made for the following indictment of crimes laid at the door of the "patent-medicine" men and quacks. No attempt is made to set forth the facts from which the generalizations have been deducted. For the most part, the indictment consists of mere condensed statements of the fact hitherto set forth in minute detail in lay periodicals and elsewhere. But in order that we may have clearly in mind the dangerous nature of these many crimes, a brief review of them will tend to emphasize the evils of the situation.

THE INDICTMENT AGAINST "PATENT-MEDICINE" MANUFACTURERS, QUACK DOCTORS, AND NEWSPAPERS IN LEAGUE WITH BOTH.

First.—Many drunkards and drug fiends date their downfall from the first dose of "patent-medicine." The most "popular" "patent medicines" contain dangerous drugs, alcohol, and narcotics, to such an extent that their continued use has made drunkards and opium fiends of hundreds of victims. Chemical analysis by the best chemists in the world have exposed over and over again the vicious nature of these leading "patent medicines." Often innocent children are made drunkards, or else killed outright, by cough mixtures and emulsions containing large amounts of alcohol and opiates.

Second.—The "patent-medicine" man preys on womankind. One of the leading "patent-medicine" manufacturers has expressed this well-known principle of the "patent-medicine" business in language better than any outsider could do it. His words were:

"It's the women we are after. We have buncoed them now for a good many years, and so long as they remain as 'easy' as they have been and we can make them believe they are sick we're all right. Give us the women every time."

Third.—Women's letters, instead of being kept "sacredly confidential" by the "patent-medicine" shark, are publicly exploited. The "patent-medicine" shark advertises to treat letters received from women as "sacredly confidential," and to permit no one save an honorable physician, generally mentioned by name, to read them. As a matter of fact, letters from women, laying bare their most confidential and sacred secrets, sometimes telling of the disgrace of a daughter, are opened by prying clerks and passed for reading from hand to hand through the receiving office, and if particularly racy, are shown others outside the business. "Then to cap the climax of iniquity, with some of these houses, these names and addresses, and even the letters themselves, are sold at two, three or five cents a name to firms in other lines of business for the purpose of sending circulars."

Fourth.—Quacks exploit, as a rule, poor people. The largest source of revenue for the "patent-medicine" man is from the pockets of the poor. Many people, after reading the alluring advertisements of the "patent-medicine" man, come to the conclusion that by taking the advertised remedy they can cure themselves and save the bill of a physician. They argue that if they can be cured by using one or two bottles, it will be cheaper than going to a doctor. This science of economy on the part of the poor is responsible for some of the ease with which the "patent-medicine" man amasses his fortune.

Fifth.—Most "patent medicine" testimonials are secured by fraud. "Patent medicine" men generally advertise so-called "testimonials" in the form of letters from alleged patients who paint the curative powers of the remedy in false and alluring colors. A great majority of these testimonials are miserable frauds. In some instances men and women are deliberately paid to make false statements. Other testimonials are

manufactured in the laboratory like the medicines themselves, by the wholesale, and still others are exacted in advance of treatment from poor patients, who gives these false testimonials in exchange for a few bottles of worthless medicines. Before giving newspapers contracts for advertising, some concerns require the newspapers to secure testimonials in advance.

Sixth.—"Patent-medicine" men try to "make business" by causing disease. Instead of trying to heal the sick "patent-medicine" men endeavor to "make business" by so framing their advertisements as to induce the reader to believe that he has one or more well-defined symptoms of a dangerous disease. The men employed to write these advertisements are known in the "patent-medicine" business as "hypo creators," because, by running the whole gamut of simple symptoms from "headache" to "chills down the spine," they are supposed to create hypochondriacs who will buy the drug which the advertisement guarantees will cure the disease the reader thinks he has. This is also a favorite method of deception practiced by the advertising quack doctor, especially one who advertises to cure diseases of men only.

Seventh.—No knowledge of medicine necessary in "patent-medicine" business. The chief "patent-medicine" industries of the country are enormous business institutions, the details of which in every department are conducted by laymen absolutely ignorant of the science of medicine. The scientific knowledge of the healing art is in no sense considered a requisite to the successful carrying on of the "patent-medicine" business. A good sense for advertising and a conscience that does not stick at personal enrichment filched from hoards of ignorant, suffering victims, are the qualities that bring success in that business.

Eighth.—The "patent-medicine" shark hides behind a "secret preparation." People who taken "patent medicines" are taking concoctions the ingredients of which the manufacturers fear to make known. By refusing to make public his so-called "invaluable" remedy, we are forced to conclude his drug is either worthless or dangerous, and that therefore he fears to have his dupes and victims know the true ingredients thereof. If the remedy be valuable, then he violates the honor of the medical profession, whose first rule is that all discoveries in the healing art are for the benefit of humanity, without individual profit or control, by governmental patent or secret methods. Every effort to compel the printing of "patent-medicine" formulas on labels has met with the determined opposition of the "patent-medicine" trust. The reason is obvious.

Ninth.—The "patent-medicine" man substitutes impure and adulterated drugs for pure drugs. In order to reduce the cost of his vile stuff to a minimum the fraudulent substitution of drugs is practiced by the "patent-medicine" man, e. g., wood alcohol is substituted for pure alcohol, and poisonous acids for cherry bark. There is no government inspection of any kind in this nefarious business.

Tenth.—The "patent-medicine" man disregards dangerous conditions and always recommends his particular remedy, knowing that it may be worthless or dangerous. The "patent-medicine" man willingly undertakes to cure the most dangerous diseases without any opportunity for a personal examination and diagnosis of the patient. The patient may be in a dangerous condition, but that is no business of the "patent-medicine" man. His object is to sell his remedy. He will, therefore, prescribe his "cure-all" to every applicant without discrimination, in spite of the fact that such methods bring about the deaths of thousands of victims and are universally condemned by scientists everywhere.

Eleventh.—Patients, by false analyses, are frightened into believing they are dangerously ill. The "patent-medicine" man urges his victim when he first catches him, to send in samples of urine, blood, and some other secretion of the body for inspection and analysis, on the pretense that the disease may be more accurately diagnosed. As a matter of fact, thousands of these samples may be received in a day. They are either thrown away as fast as received, or perfectly natural chemical changes and reactions are misinterpreted so as to cause the victim to believe he has a disease demanding the "infallible" remedy made by the "patent-medicine" exploiter.

Twelfth.—The "patent-medicine" man deliberately makes false claims to the curative powers and to the universal applicability of his drug. If the "patent medicine" be of value in the treatment of disease, its scope, as the scope of any one medicinal remedy, must necessarily be very limited in its efficiency and restricted to comparatively few ailments. Yet the unscrupulous owners and exploiters of "patent medicines" rarely hesitate to assure the public that their remedies are of extraordinary efficacy and will cure the most stubborn cases without fail. Material representations in the sale of a horse or a mine or a watch are often punished as "larceny by a false pretense." Why should the taking of health and money from ignorant or susceptible people by the false pretenses advanced by the "patent-medicine" swindler be called by terms less harsh, or punished by sentences less severe?

Thirteenth.—The "patent-medicine" man exploits the personal skill of a physician who is generally an imaginary person. Many of the most widely-known "patent medicines" are supposed to be controlled, either by some benevolent woman (like Lydia Pinkham, dead these twenty years), or by some celebrated physician (like Dr. Wallace Hadley of the Force of Life Chemical Company). The "benevolent" woman or the "skillful" doctor, as a matter of fact, is generally either a myth or some insignificant individual whose fame is confined to the statements made in false advertisements. These words of praise of the great "physician" may be compared to bird lime skilfully spread to catch unsuspecting birds.

Fourteenth.—The "patent-medicine" men have a strong organization to protect themselves against hostile legislation of every sort. The manufacturers of "patent medicine" have an organization representing thirty-five states in the union. This organization looks after their interests generally, but its chief function is in regard to legislation. The legislative committee consists of thirty-seven members, being several times larger than any other committee of the organization. The object of that committee is to watch national and state legislation which may affect the business interest of members, and to take such action with reference thereto as occasion may require.

The report of this committee from year to year recalls the progress of legislation in every state hostile to "patent-medicine" men and the success of this organization in combating it. The public will have to fight this organization every step of the way in its effort to free the country from the "patent medicine" evil.

Fifteenth.—Quacks make a false diagnosis of loathsome diseases. Quacks, especially those in large cities, who advertise to cure diseases of men only, have a favorite method of diagnosing a simple trouble as a vile and loathsome disease, thus frightening the patient into paying them exorbitant sums for a cure. L. R. Williams and William H. Hale and Henry H. Kane, recently run out of business by the Medical Society of the County of New York, are fair samples of this miserable type of man.

Sixteenth.—The "patent-medicine" evil could not thrive without the active support of a large part of the public press. The responsibility of the newspaper was recently expressed by a resolution passed by the Medical Society of the County of New York, reciting, among other things, as follows:

> In the courts of honor, conscience and morals, if not in the courts of law, the newspaper that profits by the publication of the alluringly false advertisements of notorious quacks and charlatans, whose filthy advertisements can be found in prominent places in the advertising columns of certain New York papers, are in no wise less guilty than these charlatans themselves.

DISCUSSION.

DR. SAMUEL G. DIXON.—When I was invited here this evening to hear Mr. Andrews on "Forensic Medicine," I had no idea of opening the discussion, and I feel much embarrassed, for while I believe that "quackery" kills a large proportion of those who meet with a premature death, I have never given any thought to the remedy to overcome this great evil. However, since I learned that I would open the discussion, and knowing that I would hear such an able and comprehensive treatment of the subject, I have recalled some thoughts that have occurred to me from time to time. Once, when glancing through "Pepys' Diary," I saw a remedy for burns which ran somewhat like this: "There came three angels out of the East. The one brought fire, the other brought frost. Out fire; in frost, in the name of the Father, Son and Holy Ghost. Amen." At the

time I passed it by as an example of a superstition of the past. Last summer, however, when there was an explosion of typhoid fever at Nanticoke which promised to be more killing than that at Plymouth, and every possible means was being pushed to eradicate the original infection, and a systematic effort was being made to teach the people to boil all water that for any purpose would be taken internally, circulars in different languages were sent to each house, placards were posted on the telegraph posts, and corps of nurses visited from house to house to teach that boiled water would, in all probability, prevent infection in new centers. These nurses were met with the declaration from many, "No, we will take no care of the fever, as it is a visitation from the Almighty God on t' people of the earth for permitting the sinking of the Russian war vessels." Such ignorance and superstition being the foundation stones of quackery made me realize the necessity of instructing the people before we can expect to overcome charlatanism. This in a measure can be done through the newspapers which are read before almost every fireside in this great commonwealth. For instance, the free distribution of antitoxin has brought very wide results, and from inquiry from the overseers on the farms I find that the sale of antitoxin, outside of that distributed by the state, has increased between 25 and 30 per cent. The work that has been pushed during the last six months in every township in Pennsylvania to prevent and to overcome smallpox has revealed much ignorance. One physician in Johnstown persisted in circulating vile literature against vaccination, and at the same time guaranteed to prevent smallpox with a remedy of his own to be taken internally. I ran this down and found that he was a graduate of one of the regular medical schools of this state, and that he held a license from the commonwealth to practice medicine. If a lawyer trifled with the affairs of his clients as that physician was trifling with the lives of the people, he would be debarred from practicing law. Yet, the present laws of Pennsylvania permit such quacks to go on practicing medicine under the official license bearing the seal of the state. He may have been convicted of malpractice, and yet go about flaunting a state license in our faces while he continues with his malicious pursuit. It is time, therefore, that we band together and prepare a bill to be presented to the next legislature empowering the State Medical Examining Board to revoke medical licenses when it is proved that they have fallen into the hands of charlatans and quacks. Entrusted as we are with the health and lives of the people, let us take as much pride in having a high standard of honesty, honor and intelligence in our profession as do the lawyers who safeguard the honor and property of the community. So much should we do in the way of our profession. Some years ago I stopped in a restaurant when a colored lad I had known since he was a child came up to wait on me looking thin and weak. I asked what had affected his former good health. His answer was: "Oh, Doctor, I guess it is all up wid Henry. I can't eat nothen, an' I am getten thin and weak and has a bad cough in the mornings. I guess Henry done and got consumptions." On inquiring I learned that he had his usual good health until a few weeks previous when he had contracted a cough and at once purchased a bottle of "cough expectorant," the label of which professed to teach him how to diagnose his own case and how to regulate the dosage. He had been religiously following the instructions, with the result I have mentioned. It goes without saying that a discontinuance of the quack remedy permitted Nature to reassert herself and permitted the poor fellow to take a new lease on life. Relating this simple experience to some of our lawmakers brought out from them several incidents of the same character and the declaration that the law should forbid the sale of such quack medicine accompanied by instructions for diagnosing. The time is right here when we should pass a law forbidding the sale of any quack medicine, when such stuff is sold as a cure for human ills, and this law should provide that such medicines should bear a printed label setting forth the full detailed formula of its composition, and a violation of the law requiring such labeling should be treated as a penal offense. I have spoken of this a good deal during the past year; I have talked with a number of senators and representatives, and with the governor. The governor and a number of the senators are in sympathy with such a measure and have already expressed themselves as being willing to help us pass this law, or rather to pass a law which will enable us to revoke medical licenses in the hands of unworthy holders. A majority are ready to pass a law forbidding the sale of "patent medicines" unless the detailed formula is affixed to the package. I say this tonight because I have been waiting for an opportunity when I could see my medical brethren and tell them what good things are in store for them at the state capitol. The men there are now ready to work with us and we have only to organize and prepare to push forward next year, when I think without doubt we can accomplish these two objects. In reading the card announcing the able address which has just been delivered, I notice the names of those whom I know have given this subject much profound thought; therefore, I cannot conscientiously take up more time from those who must have clear-cut ideas regarding the best methods to overcome one of the greatest and most rapidly growing evils of the day.

DR. ROBERTS.—I have very little to say on the direct subject of this address, but have jotted down a few notes which seem to me to be pertinent to it. I do not believe the "patent-medicine" evil and the quackery evil are entirely diseases of the community, but they are, to a certain extent, affections of the medical profession. The ease with which the public is duped by those whom intelligent men in general call "quacks," is partly due to quackish men in our own professional ranks. The essence of quackery is a boastful assertion of skill and infallibility, coupled with a strong desire to make money out of men's ill-health. The essence of medicine is a humble devotion to science and a burning wish to alleviate human suffering. Not all physicians are impelled by the motives which medicine demands of her followers. The sick often seek the advertising doctor and believe the false assertions of the "patent-medicine" label because they have found the medical practitioners with whom they have come in contact so incapable, so inefficient, or so exhorbitant in fees that help seemed impossible at their hands. The family which can obtain—near its home—efficient medical aid for a moderate fee, does not often drift into the hands of the recognized quacks. The college which graduates an ignoramus, the state examining boards that give a license to an unfit applicant, and the physician who places an unjust value on his services, or who deceives his confiding patient, are potent forces in encouraging quackery. Some years ago the alumni of various medical schools were obliged to compel their almæ maters to stop the output of half-trained graduates, and the profession has at times had need to be on the alert that medical examining boards did not permit improper men to obtain licenses to practice. These sources of supply of quasi-physicians have now been pretty effectually and satisfactorily checked. There remain, however, the secret-remedy prescribers, the commission-paying consultants, and the big-fee doctors to be disciplined by the medical profession itself. When these quackish colleagues have been ostracized a great deal will have been accomplished in the crusade to suppress quackery.

DR. BEATES.—I will make a few brief statements of some of the difficulties against which our profession contends, and as I have had opportunity of viewing them. First, it may be well to elaborate more fully a point raised by the last speaker wherein he refers to certain classes or types of practitioners who, because of their methods, form one of the most potent factors in establishing conditions favorable to the thriving of quackery. Reference is made to the professorial element of the commercial medical college, which is operative for the following reasons: A professor is regarded by the public as a paragon of medical knowledge and skill, and his fiat in matters of public questions, as well as of professional skill, is obeyed with a blind trust and confidence truly surprising. Now, quacks, if apprehended in this commonwealth, and convicted of illegal practice, are simply subjected, because of the Act of Assembly, a relatively weak law, to a mere fine. As we have seen from the speaker tonight, the "gullibility" of the public is such that these quacks receive fabulously large remuneration for their evil practices; therefore, these fines are paid, and within twenty-four hours the quacks are at their nefarious work again, presuming, and ofttimes well founded in so doing, that the annoyance and delay and expense attaching to prosecution will render them secure from repeated arrest. If, therefore, the Act of Assembly could be so amended as to impose

imprisonment in addition to fine, one or both, to be meted out by the courts, quackery could, in a large measure, be controlled. In the efforts in this state to amend the practice act, it was attempted, in addition to standardizing preliminary education on a higher plane, as well as determining the conference of the degree on a full four years' medical college course, to incorporate a punitive clause which would add imprisonment to the above mentioned fines. Unfortunately, the successful opposition of the class of practitioner above referred to —the professor of the commercial and low-standard medical school—swept away this measure with the higher standard provisos, and, therefore, quacks, in this state, have nothing to fear for the present but a small fine. Quackery, unfortunately, prevails among the unprincipled practitioners of medicine who are licentiates. They lack in principle and character, and advertise all sorts of methods for curing this and that disease, and because of possessing a diploma or license, or both, are the better able to make dupes of the community. It would be well, therefore, for every Act of Assembly throughout the country to have amendments providing for revocation of licenses for this and other forms of evil. In this state, a few years ago, when amendments had been framed which would have enabled the Act of Assembly to be so administered as to correct the indicated evils, the commercial medical schools actually contributed money to a political campaign fund, and the unprincipled political party leaders were induced to promise the defeat of the bill, because these colleges laid claim to the fact that, if the standards were raised, as the measure provided for, they would lose students and money and suffer financial disaster. The correction of this sort of thing lies in the hands of the rank and file of the medical profession, who, if they would stand shoulder to shoulder in forming a substantial organization, could, as should be done, sweep out of existence the boards of trustees and faculties of such concerns as are guilty of this truly horrible crime. Dr. Roberts says that colleges that send out illiterate and unfit practitioners are potent forces in the favoring of quackery. Certain it is that illiterate and incompetent practitioners are equaled in the results of their treatment of disease by any class of like ignoramus who claims this or that quack method as a means of curing disease, and it is self evident that, as these illiterate graduates are so numerous, many people obtain about as good results from the quacks as they do from those they believe to be qualified physicians; the only difference is that the quack obtains thousands of dollars for his evil practices where the physician receives but a few pennies. He also speaks of the improved condition of medical education, which is gradually diminishing this factor in the evil, and, while there has, undoubtedly, been truly marvelous advances in higher medical education, the profession should know that there are colleges even in Pennsylvania today that are graduating men concerning whom the following gives you a correct idea: From a college that was very active in defeating medical legislation, having for its end the establishment of proper medical education, as late as June, 1905, graduated, among many others, a man of this type. At the session of the examining board this question was asked: "Explain how intracranial venous pressure and auricular filling of the heart are affected by respiration." The answer given was this: "Because the respiration are not deep enough, or which does not allow enough air to get to the blood, of course we only want the heart to fill with blood when needed, if fill to rapid will cause enlargement of all portion which we did not need, because dead will overtake us, so therefore respiration regular, the amount, quantity and quality of blood to be forced through the ventricles, if that was not true the intracranial venous pressure, etc., would be affected and cause congestion, convulsion & headache therefore we will know the respiration is the fault." I desire to say seriously that I am not exaggerating when I say that 20 per cent. of the graduates of 1905 were of this type of illiteracy, and necessarily proportionately incompetent. The necessary correction for this is self-evident.

The next point, and one which has been well emphasized by Mr. Andrews is that it is useless for one or two individuals alone to try to prosecute quackery. A conviction here and there is absolutely strictly local and does not effect the root of the evil. The medical profession must undergo organization, and one of the things that we have to do to-day, as members of this commonwealth, is to use our influence as individuals to effect on a well elaborated basis a complete organization.

Another matter which is a great obstacle in the successful prosecution of illegal practitioners or quacks is the want of a legal definition of what constitutes the practice of medicine. Courts have decided that the treatment of disease by any means without the use of medicine is not the practice of medicine. A more senseless and absurd fact, not a matter of law, but a fact could not well be imagined. The treatment of disease, deformity or injury, no matter by what means, is the practice of medicine.

In the *Public Ledger* of Philadelphia, on Feb. 7, 1906, a paper which I believe should be credited with having done much to educate the public to a realizing sense of the importance of the medical profession from an economic point of view, appeared an editorial entitled, "The Practice of Medicine," and also the following definition, which is judical, and should, therefore, be a precedent guiding all judges in charging juries when actions of this type are under consideration,—

"The practice of medicine is the exercise or performance of any act, by or through the use of any thing or matter, or by things done, given or applied, whether with or without the use of drugs or medicine, and whether with or without fee therefor, by a person holding himself or herself out as able to cure disease, with a view to relieve, heal or cure, and having for its object the prevention, healing, remedying, cure or alleviation of disease."

The speaker of the evening suggests the advisability, and it is a most excellent suggestion, of a move being instituted to form a national society for the suppression of quackery and the prosecution of those who practice illegally. It is to be hoped that, in Philadelphia, which has the honor of being one of the earliest, if not the earliest center of medical learning, the great Philadelphia Medical Society with a membership of twelve hundred physicians, will appreciate its duty of higher citizenship and originate the effort not only of ridding this community of quacks, but of forming a national organization, whose object it will be to protect fellowmen from the fearful consequences of ignorance and quackery, as well as to save them from such extortion, extortion which passes all comprehension. Thus we could and should have the honor of being the first to identify ourselves with a movement, which disinterestedly interests itself in the highest needs and the welfare of our fellowmen.

Let us, from our membership, get together men strong in character, integrity and energy, full of purpose and force, who are willing from a conscientious point of view to pursue this arduous task and public duty with that spirit which knows nothing but success. A movement in this medical center, launched forth under such conditions must of necessity grow and develop until it has permeated the entire country.

THOMAS N. BARLOW.—I wish to express my appreciation and admiration for the very illuminating and scholarly address to which we have listened this evening. I particularly appreciate it because of the emphasis it gives to the necessity for the establishment of amendments to the police power, exercised by lawful authority, for the benefit of the people. As Mr. Andrews has said, the ordinary police channels are totally insufficient to meet the evils complained of in the paper read this evening. Special laws and special means are required, and the matter of repression and prosecution placed in the hands of people especially fitted for the work. The deterrent influence of such an organization is a thousand times greater than punitive; its very existence is a menace to evil doers. If such a society or committee is organized in Philadelphia, it will require greater expedition in the method of indictment and trial than we now have.

I may say in conclusion that I wish to congratulate my brother from New York on his presentation of one of the most concise, one of the clearest and most orderly addresses that I have ever listened to.

DR. COHEN.—I have listened with pleasure and instruction to the admirable address of Mr. Andrews. Following a thought of the last speaker, it may be recalled that some fifteen or more years ago, the Philadelphia County Medical Society undertook to prosecute offenders against the Medical Practice Act. We did not receive any assistance at the hands of the authorities, not that they were especially unwilling to assist us, but the law or practice in Pennsylvania did not favor it. We secured with much difficulty and expense a few convictions

and then the attempt was dropped. The other day my attention was attracted to a large sign board erected on the top of a house and bearing the name of one of the first offenders convicted by the County Medical Society. It stated that he treated "special diseases."

This bears out what our friend from New York has told us—that the offenders return to work the minute the vigilance is relaxed.

The community is greatly indebted to *Collier's Weekly* and the *Ladies' Home Journal* in particular, for their fight on "patent medicines." One of the greatest difficulties in the way has been pointed out by Mr. Andrews. I merely call attention to it, the Proprietary Association of America, with its unlimited capital and unremitting endeavors in defense of the nefarious occupation of its members. In ordinary fraudulent businesses, if the person responsible is found, the fraud can be broken up and the perpetrator put in jail. The men engaged in the "patent-medicine" trade are looked up to as representative citizens of the towns in which they live; they may be pillars of the church—often they are—liberal patrons of colleges and various other public institutions. It is pretty difficult to stop the disreputable work of respectable men, especially when they have taken the Lord into partnership. Moreover, these men have great political influence, perhaps sufficient in certain parts of the country to make and to unmake governors, senators, congressmen, legislators and the like.

They have been particularly generous sometimes to the villages which they left as poor boys, and thus the church, the school, the press, political interests and often public sentiment are against those who attack "patent medicines." Whatever the source and secret of their influence is, it has been so great as to cause an amendment of the Pure Food Law now before the United States Congress striking out the provision requiring the formulas of "patent medicines" to be printed on the package.

Dr. Roberts has called attention to a phase of the subject that must interest all medical men; the relations of the medical fraternity to the "patent medicine" industry. We can not say as a body that our hands and our spirits are clean, whatever care we may have taken individually, and the skirts of the medical press in particular are not free from contamination with the "patent-medicine" evil. The work of mine to which you have been good enough to refer, and which was done with the help of the Philadelphia County Medical Society and the Medical Society of the State of Pennsylvania, was directed to one end, namely, the purification of THE JOURNAL of the American Medical Association from "patent-medicine" advertisements. I might again relate the manner in which I was led into the work. I happened to have under my care the proprietor of an influential newspaper, and I called his attention to some advertisements of "patent medicines," especially so-called "consumption cures," in his paper. He had excluded the advertisements of abortionists, "specialists in diseases of men," and so forth, and these were what were technically called "clean" medical advertisements. He expressed surprise at my criticism and said: "Don't you know that your own medical journals publish the same kind of advertisements?" It was my turn to express surprise. "Well," he said, "take the trouble to look." I took the trouble and found it so. I had indeed "taken trouble" on myself. I then spoke to the proprietor of an influential medical journal, with whom I occupied a similar relation, and he said: "When you get those advertisements out of the journal, of which you are part proprietor, then come to me and talk about them." The journal of which you and I and many of our friends here are part proprietor, is THE JOURNAL of the American Medical Association. That journal, at that time, contained the worst advertisements of any in the world, so far as my observation has gone. As soon as the matter was brought to the attention of the American Medical Society, a resolution was passed for the exclusion of the advertisements, but that resolution, until within very recent years, remained to a large extent a dead letter, because the authorities of the American Medical Association were not willing to insist on it being carried out, because the pressure of "business interests" was too great to overcome.

We owe a debt of gratitude to Dr. Simmons, the present editor of THE JOURNAL, who has done more to organize the American Medical Association of America into a force for good than any of his contemporaries. He has begun in earnest the work of cleansing THE JOURNAL from nostrum advertisements and has begun to share with some of us Philadelphians the verbal compliments of the quacks and imposters and their journalistic mouth-pieces. Until the medical men succeed in cleaning the medical press, I doubt whether we have any right to say anything to the proprietors of the daily press.

I am very glad that our friends who are not of the profession are willing to bring pressure to bear on the daily newspapers, and to show them what harm they are doing, but I feel with Dr. Roberts, that until we have removed the beam from our own eye, we are not in a position to say anything out loud about the mote in the eye of others.

The American Medical Association has been suggested as the society to take up this work in general. I doubt whether that is possible. The American Medical Association has enough to do with its scientific work, with its work in public health promotion, properly so-called, and in keeping itself clean, to occupy all of its attention. But I believe that the American Medical Association might well co-operate with a national society, such as has been suggested.

In concluding, I have only to say that I have been personally indebted to Mr. Andrews for presenting to us his very clear view of the situation, and for pointing out to us the necessary steps that we must take in Philadelphia to get rid of fraudulent practitioners. There is no doubt that the police law should be changed, and that when it is changed, we should have somebody charged with the execution of this law so that it will not fall into innocuous desuetude. That body might be the State Board of Medical Examiners, or the Philadelphia County Medical Society, or some other society, but it should be some one definite body.

It has been suggested that if a physician abuse his license it should be revoked. I am heartily in accord with that proposition, but I think it would be dangerous to place such power in the hands of any other body than a court of law, which will hear both sides publicly. A lawyer can be disbarred only by order of court, and a physician should not have his license revoked except by order of court, but the State Board of Medical Examiners might call the attention of court to the facts and ask for revocation of license, as is done in the legal profession, I believe by the Bar Association.

PROFESSOR FRAZER—I am surprised that you call on me to say anything on this subject, who am neither lawyer nor physician, but I have listened with great interest to the paper this evening. I had thought the physicians who with altruistic spirit, claim everything for their profession, would also include quackery. I do not wish to introduce a discordant note, or one foreign to the subject which would distract the attention from Mr. Andrews' very able discussion, which concerns the medical profession; any yet not alone, for we have in geology and in chemistry as many quacks as you have, but our quacks are not quite so well off, nor are they so generally known. They are to be found, however, in Washington, Harrisburg, and some institutions of learning. Dr. Dixon, who is both a lawyer and a medical man; eminent in both professions and president of various institutions, could tell us how many professions he has seen invaded by quacks; he has seen many kinds in one hall.

I would simply add what tribute I can to the very excellent paper by Mr. Andrews, and say that I have derived a great deal of pleasure from it, and if I have an opportunity to further the movement he suggests in any way whatever, I will be only too glad to do so.

DR. DIXON.—Mr. Barlow refers to the police laws of Philadelphia, and it may be of interest to us to know that the Department of State had 1700 men in the fall, and will soon have 2800 men, any one of whom can arrest without warning, and the commissioner has power to employ counsel to prosecute the cases. Therefore, it seems to me, that the state has a law sufficiently broad to cover the questions before us to-night, but that is only applicable to the townships, outside of boroughs and cities, and does not apply to local practice.

HAWAII AS A FIELD FOR SCIENTIFIC WORK IN TROPICAL MEDICINE.*

E. S. GOODHUE, M.D.
HOLUALOA, HAWAII.

In an address before the New York Pathological Society, Dr. Flexner, president of the Rockefeller Institute, speaking of dysentery, said:

> The attempt to establish a common etiologic factor for all cases of dysentery has thus far failed. . . . Given a disease that is never entirely absent from tropical regions, that appears with epidemic severity, that permits easy access to the *materies morbi*, one would certainly have been tempted to predict that the success achieved in so many apparently less difficult fields would probably be repeated. . . . Our imperfect knowledge of dysentery should be ascribed neither to lack of opportunity for the study of the disease nor to lack of energy in the pursuit.

After close acquaintance with the disease in the Philippines, Dr. Richard T. Strong recognizes two different forms on which he bases a careful report, from which I quote:

> Owing to the great frequency of dysentery in the Philippines our present inability to cope with the disease, and the fact that one attack appears to afford no protection whatever, makes it necessary that very thorough and careful studies should be made in order to discover, if possible, some method of preventing infection and possibly some serum that will affect a cure.

This applies very well to Hawaii.[1] By means of recruits from Hawaii and the Philippines, Dr. Craig of San Francisco has been able to study the pathology of chronic dysentery of tropical origin, and Professor Kieffer of Philadelphia to trace the relation between abscess of the liver and the *Ameba dysenteriæ*.

ANKYLOSTOMA DUODENALE.

Stimulated by the spirit of research in tropical phenomena, Dr. Stiles of Washington, D. C., discovered a new species of hookworm (*Uncinaria americana*), also giving rise to disease in man. This is the parasite that has caused the Porto Rican anemia we see in Hawaii and the heavy losses among sheep in Texas.

Egypt was the original habitat of the species, but, owing to our modern methods of travel, this undesirable foreigner is making himself hated away from home.

Another observer attributes ground-itch, a disease common in Assam, India, West Indies and the tropics generally, to the same parasite. He says:

> With this . . . to stimulate observation, no doubt others will be found in this country, and it is possible that the prevention of the spread of the disease will become an important matter of sanitation.

Dr. Claude A. Smith, demonstrator of pathology in the medical school of Atlanta, has made an exhaustive study of the disease in the South, a subtropical country, where it is extremely common and where it gives rise to anemias and cachexias that were formerly attributed to malaria. Since the arrival of the Porto Ricans in Hawaii, Dr. Sandow of Waimea, Kauai, has contributed a valuable paper on the subject,[2] but the disease still offers a free field for investigation.

A form, at least, of ankylostomiasis has been here for many years, and in 1895 I described a case in a Portuguese who had never been out of Hawaii. The symptomatology was classical, though little was known as to the etiology of the case.

BILHARZIA HEMATOBIA.

From far Egypt, where it is supposed to have originated, this disease came to the notice of Drs. Booth of Sparta, Ill., and Walker of Indiana. The latter says, "Practically no attention has been paid to the disease in this country."

Since the discovery of the trematode worm by Bilharz in 1851, the disease has been described by Drs. Allen, Henderson, Atherstone, Cobbold and Griesenger from cases seen in Cairo, the Cape, Natal, the Transvaal and islands neighboring to Africa. Hematuria attributed to cystitis, vesical calculus, nephritis and, particularly, malaria may be found in most cases to be caused, even here, by a specific hematobic organism.

In a case of persistent and rather extensive hematuria which came under my care at the Malulani Government Hospital in 1897, the patient[3] suffered considerable pain and at each micturition passed variable quantities of pure blood. Occasionally there were clots. By placing a specimen in a transparent vessel and holding it before a strong light, wavy threads might be seen. These contained numerous typical ova. Small quantities of blood containing ova were occasionally passed per rectum, and some dysenteric symptoms supervened as a result of the presence of the parasite.

BUBONIC PLAGUE.

Although so much has been written there is much more to know concerning this very ancient disease which, despite the liking its germ has for coolness, persists in staying with us. Perhaps it is an indirect compliment to our climate.

The Institute of Infectious Diseases of Berlin established a separate department for the study of plague, but its facilities are meager compared with what our own might be, especially as regards the etiology and symptomatology of the disease.

We have abundant clinical material and shall continue to have; and our autopsies have already furnished rich pathologic data.[4] What better field in which to differentiate scientifically plague from certain phases of cerebrospinal meningitis *en transport* between here and other ports. We have meningitis here on occasion, and we had a few cases in Hawaii at the time it was sporadically prevalent through the United States. Why was it prevalent? Why did it persist with untraceable foci? Have we had any cases of non-specific plague or climatic bubo? Should we know them if we did?

In 1902 Dr. Coty made an interesting report of twelve cases of non-specific plague. They were European males who had lived in the tropics from three and a half months to twenty-seven years. He says:

> We have in this condition an adenitis occurring in debilitated persons in the tropics, and the exciting cause is the entrance of the ordinary microbes of suppuration into the lymphatic system, most often through trifling lesions of the skin.

Manson speaks of abortive plague, another name for the mild or ambulatory form which Cantlie specifies as a type. The latter also classifies "climatic bubo" (really a non-specific adenitis) as pestis minor, stating that the disease "remains at present undetermined." He says:

> Climatic buboes as generally described give signs and symptoms wholly analogous to the descriptions of pestis minor we are familiar with. There exists a febrile state, an enlarged

---

* Abridged from a paper read before the Hawaiian Territorial Medical Society, Honolulu, under the title, "A School of Tropical Medicine for Honolulu. Why Not?"

1. Goodhue, E. S.: "Some Notes on Dysentery," 1900.
2. Sandow: "Anchylostomiasis, a Disease Prevalent Among the Porto Rican Laborers and Their Families on Plantations," 1903.
3. He has since died. He was a brother of two of the best known society men and millionaires of New York.
4. Sinclair, A. N.: "Plague and Its Aspect in Honolulu," 1904. Cofer: Public Health Reports, Public Health and Marine-Hospital Service, Honolulu, 1900-1906. Goodhue, E. S. and W. J.: "The Electe Epidemic," 1902.

inguinal gland which may or may not go on to suppuration, and the course of which can not be assigned to any local site of infection.

Dr. Sinclair of Honolulu has made a reasonable suggestion in recommending the use of pestis simulans instead of pestis minor. He says:

I would suggest the abolishing the term pestis minor (inherently it means a form of plague) and suggest pestis simulans as being non-committal for cases that run a mild course of true plague in districts where plague is more or less epidemic, and where it is impossible to demonstrate the presence of plague bacillus; pestis ambulans may be retained for cases of true plague as shown by bacteriologic examination, the case being ambulatory in its nature.

In 1903 a case of supposed plague was brought to the Mariam Emerson Hospital, Eleele, by the patient's physician and placed under my care.

CASE 1.—A Japanese woman, aged 20, married, with a good history, had been somewhat indisposed for a few days previous to the swelling of the glands in her right groin. When she presented herself she was suffering from headache, pain in the swollen, reddened femoral region, with a pulse rate of 115, and a temperature of 104 F. This continued for three days, the gland in the right groin reaching the size of a goose egg. The vertical string of glands in the opposite side and the axillary glands were also enlarged somewhat.

The right gland suppurated and broke down on the twelfth day, discharging a large amount of pus, which contained no plague bacilli, but many streptococci and diplococci. Much loss of tissue resulted, but the patient recovered and was discharged after three weeks.

Nearly every symptom of ordinary plague was present, though the case occurred about a year after the Eleele epidemic, near the site of which the patient had lived.

Manson's query as to whether pus germs might not neutralize the toxins of plague is worth considering.

Certainly the cases that go on to suppuration are the milder ones.

FILARIASIS.

Filariasis is little known here clinically, although it is widely distributed in Porto Rico, and several cases have been traced from that source to districts in the United States.

Dr. Sassure of Charleston, S. C., reports 22 cases, and Dr. Manson, in his work on tropical diseases, says that the *Filaria nocturna* has been found as an indigenous parasite in most tropical and subtropical districts. He says:

In many places quite 10 per cent, and in other places half, of the population harbor it. One-third at least of one district in India carry blood filaria. I find that in some of the islands of the South Seas, Samoa, for instance, fully one-half of the people are affected.

It would be interesting to know why Hawaii is blessed above her sisters.

CHOLERA.

This disease[5] came to us in 1895. It may not offer the field for research that some others do, but an enthusiastic laboratory student would have enough to do even with only eighty-seven cases. The question of diagnosis would have been settled quickly by expert opinion, and some new knowledge perhaps furnished regarding effective quarantine and infection through fish.

BERIBERI.

Theoretically as well as clinically this is another disease of great interest. The causation is largely unknown and offers a wide field for speculation, Rost and Ashmead holding that the disease is caused by the eating of fermented rice.

In 1903 the Institute for Medical Research, Federated Malay States, made a report of great value, basing their summary on 500 beriberi cases at the Kwala jail. Dr. Ross' reference to the similarity between beriberi and chronic arsenical poisoning is suggestive, and the theory may account for some epidemics which occurred outside of the beriberi habitat. Hawaii has had and still has much valuable material relating to the disease.[6] Dr. Donald Currie of Washington, D. C., describes some cases (1903) of "beriberi, or a disease closely resembling it, met in San Francisco in Chinese fishermen returning to San Francisco from Alaska." While the paper is interesting, its value is not so great as it would have been had the writer verified his diagnosis.

SYPHILIS.

While not particularly tropical, a compilation and careful record of syphilitic cases, the prevalence of the disease and its effect on the Hawaiian race, would be valuable data. There is much to be learned, too, from an examination of old Hawaiian skeletons which show, particularly in the vertebral portion, the destructive effects of syphilis in the days when that disease was new to the race.

Some work in the line of Dr. E. F. Robinson's investigations regarding the Philippines would be not only interesting but profitable.

OTHER DISEASES.

"I can assign no reason for the high percentage of tetanus in Florida," writes a practitioner to his editor, "unless it be that tetanus is far more prevalent in warm and moist climates than in cool and dry ones. This I read when I was a student about 40 years ago, and my residence here for 35 years confirms it."

It would be interesting carefully to tabulate the cases of *tetanus neonatorum* among Japanese in Hawaii and make an illustrative comparison between that disease and rheumatic tetanus.

Why is there absolute absence of scarlet fever in the tropics? Can it be transmitted here, or is Dr. Manson's theory correct? Why are acute rheumatic fever, erysipelas, rachitis and sunstroke rare in warm countries? What modifications, if any, do pertussis, measles, chicken pox, smallpox and German measles undergo when transferred to warm countries? Will diphtheria ever be a common disease in the tropics? With all our climatic tendencies, is pneumonia any milder here than it is abroad? What about that delightful disease of our childhood—mumps?

Dr. Malcolm Morris, always versatile and instructive, says of ringworm: "For years wisdom had been crying in the streets and no man regarded it, and about all we know of the disease is that it is caused by fungi and that those fungi are of more than one kind." I am now battling with a case of tropical ringworm, due, I believe, to the *Audouini*, differing from other forms, persistent, recurrent, having no regard whatever for the reputation of the attending therapeutist.

Would you know epidemic, gangrenous rectitis, said to be confined to hot, damp regions in the north of South America and in the islands of the South Pacific; sprue found in all tropical and subtropical countries; yaws distributed among the natives of all parts of the tropics, related perhaps to syphilis, and lately described by Dr. Musgrave of Manila, and the various lesions caused by the *Filaria medinensis*—would you recognize them, I ask, if you came across them?

5. "Special Report of the Board of Health on the Cholera Epidemic," 1895.

6. Cooper, Charles B.: "Berberi," 1905.

DIVERTICULITIS (NOT MECKEL'S) CAUSING INTESTINAL OBSTRUCTION.

MULTIPLE MESENTERIC (ACQUIRED) DIVERTICULA OF THE SMALL INTESTINE.*

HERMON C. GORDINIER, M.D.
Professor of Physiology and Anatomy of the Nervous System, Albany Medical College; Physician to Samaritan Hospital,
TROY, N. Y.
AND
JOHN A. SAMPSON, M.D.
Lecturer in Gynecology, Albany Medical College; Gynecologist to Albany Hospital,
ALBANY, N. Y.

The so-called false or acquired diverticula of the small intestine have been of very little interest to clinicians because of their supposed rare occurrence and also because it was thought that they rarely or never give rise to any clinical symptoms.

The following case with multiple mesenteric diverticula of the small intestine shows that, apparently, even in these heretofore considered benign diverticula inflammatory changes may occur which may give rise to clinical symptoms and even endanger the life of the individual. In this case, apparently, one of the diverticula became inflamed and a diverticulitis occurred, causing a partial obliteration of the diverticulum. As the diverticulum extended between the folds of the mesentery, the later became inflamed, thickened and puckered, thus causing an angular bending of the intestine and obstructing its lumen. The local peritonitis arising as the result of this gave rise to the formation of adhesions between the mesentery of the small intestine and the transverse colon and its mesentery, and thus kinked the transverse colon.

Patient.—Mrs. ——, aged 45, was first seen by Dr. Gordinier Oct. 13, 1905.

Complaint.—Abdominal tenderness, with constipation following a supposed attack of appendicitis about three weeks previous.

Past History.—The patient was married, but never had any children; menstrual history was negative. Ten years ago she had an apparently definite attack of appendicitis; she was very ill, being in bed three weeks and was incapacitated for several weeks afterward. Since then she has enjoyed good health. She has always been troubled with constipation, and occasionally has some indigestion after eating, but the latter troubles her very little and has not been worse recently.

Present Illness.—While in Bennington, Vt., on Sept. 27, 1905, her previous health having been good, she was suddenly seized with severe abdominal pain starting near the umbilicus and extending in all directions, and followed by nausea and vomiting. Dr. A. S. M. Chisholm, Bennington, was called. Morphin had to be given to control the pain, and the bowels were moved with enemata and cathartics. After the bowels had been moved, this taking place on the second or third day, the patient felt much better, but remained in bed about a week altogether. From a communication received from Dr. Chisholm we learned that the patient's temperature was never over 1.5 degrees above normal, and that only on his first visit, and that her pulse never reached a hundred. There was great abdominal distension and, on this account, palpation was very unsatisfactory. The attack seemed like one of appendicitis to Dr. Chisholm, but he states that it was so atypical that it was impossible for him to make a positive diagnosis.

The patient returned to Troy, N. Y., on October 12 and was seen the following day by Dr. Gordinier of that city. He found that she felt weak and looked somewhat "run down" as the result of her recent illness. Her bowels had been moved each day by means of cathartics, but the movements were watery and had not appeared normal since her illness. She still complained of abdominal tenderness, and on palpation a sausage-shaped superficial mass could be felt just to the left of the umbilicus, and on deeper palpation a smaller mass was felt just about at the umbilicus (Fig. 1). Under catharsis, enemata and restricted diet the superficial mass gradually disappeared, but the deeper one persisted. Dr. Gordinier made a diagnosis of partial intestinal obstruction and inferred that the superficial mass was formed by a loop of the intestines distended with fecal material.

Consultation.—Dr. Sampson was called in consultation October 23. The patient had gained in strength and felt much better. She was still on restricted diet and the constipation persisted, the movements being watery. The deep-seated mass could still be palpated. It seemed to descend with inspiration, was tender, and it was difficult to estimate its size, as the abdominal walls were very thick, the patient weighing about 185 pounds. We considered many things which might account for the mass we felt and which could also cause obstruction of the intestine in that situation, such as a malignant growth, a Meckel's diverticulum, inflammatory mesenteric lymph glands, a mesenteric cyst, fecal concretions, etc.

Examination.—On vaginal examination the pelvic organs were found to be normal, and rectal examination, except for the presence of hemorrhoids, was negative. The stomach was distended by giving the patient tartaric acid and sodium bicarbonate, and it apparently did not bear any relation to the mass near the umbilicus.

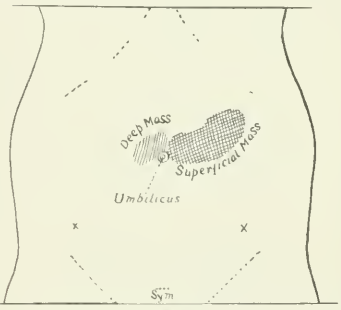


Fig. 1.—Tracing of the abdomen, showing the situation of the superficial and deep masses. The superficial, sausage-shaped mass was undoubtedly caused by the loop of small intestine, containing the diverticula and distended with fecal matter. The deep mass was probably formed by the adhesions between the kinked small intestine, caused by the inflamed diverticula and the mesocolon. See Figure 2.

Course of Disease.—As the patient's general health had greatly improved since her acute illness in September, it was thought best to wait. During the following four weeks she continued to improve, but the same indefinite mass could be felt at the umbilical region, at some times more distinctly than at others; and the constipation persisted, it being necessary to employ cathartics or enemata. The stools still continued to be watery, as they had been since her acute illness.

Preoperative Treatment.—As a deep-seated mass could still be palpated and had persisted, in spite of vigorous catharsis and the use of enemata, for over six weeks, it was thought best to make an exploratory incision in order to ascertain the cause of the trouble. With this in view the patient was admitted to the Samaritan Hospital of Troy, N. Y., on Nov. 23, 1905. After admission to the hospital she was put to bed and, for two days, she was given a course of treatment in order to empty the intestines thoroughly. Liquid food only was given, and that in small quantities. A vigorous course of saline catharsis was given. In addition the colon was irrigated with large quantities of water three times a day by means of a rectal tube connected with a fountain syringe, the patient lying in the Sims' position with hips elevated. On the second day she passed two large enteroliths, and after these a large quantity of soft fecal matter, the first approach to anything like a normal fecal movement since her illness in September.

On examining her, after this, the abdomen was much softer

* Read before the Medical Association of Troy and Vicinity, Jan. 2, 1906.

and the tumor had apparently disappeared. There was still some tenderness present about the navel and it was thought that this might have been due to a local inflammatory condition about the place where the enteroliths had been lodged. At this time it was thought that the entire condition might have been caused by the enteroliths. The patient wished to have a minor operation done, but was persuaded to wait a week until we felt sure about the other condition. The treatment by colonic irrigations was continued and also the catharsis, but the latter less vigorously. At the end of the week, during which time the patient had been having normal fluid bowel movements for the first time in two months, she was again examined and the same tender area was found near the umbilicus, and it seemed as if one's fingers rolled over an indefinite tender mass.

Operation.—On December 2 Dr. Sampson performed an exploratory laparotomy; a loop of small intestine adherent to the transverse colon and its mesentery was freed, the distal portion of an occluded diverticulum was removed and the angular kink in the small intestine, caused by the mesenteritis, resulting from the inflamed diverticulum, was released.

An incision about 10 cm. long was made through the left rectus muscle, at about the level of the umbilicus. The omentum was freed and lifted out of the way, and the transverse colon with adherent loop of the small intestine was delivered into the wound. Thirteen diverticula varying from 0.5 cm. to 1.5 cm. in diameter were found in about 40 cm. of the small intestine, which was distended to about half again its natural size. These diverticula were all in the mesenteric border and extended between the folds of the latter, in ten instances being more prominent on its upper surface. They bore a very definite relation to the large blood vessels, penetrating the intestines at the mesenteric border; as in every instance a large vessel extended over the surface of the diverticulum. Apparently they all consisted of serosa, submucosa and mucosa, the musculature being absent, i. e., they were hernial protrusions of the mucosa and submucosa through a weakened spot in the wall of the gut and beneath the serosa of the mesentery. They could all be invaginated into the lumen of the bowel, and the base of each diverticulum seemed to be nearly as large as its distal portion (Fig. 2). On freeing the loop of the small intestine, which was adherent to the colon and its mesentery, a small infected cyst, about 1.5 cm. in its long diameter, was ruptured (Fig. 3). This cyst was situated in the inflamed mesentery of the small intestine at its attachment to the latter. Apparently a diverticulum had become inflamed and its base occluded. It, therefore, no longer communicated with the lumen of the intestine, and its patent distal portion became converted into an infected cyst. The origin of mesenteric cysts from mesenteric diverticula has been recently suggested by Ayer[1]. Unfortunately the non-dilated portion of the intestine, beyond the kinked portion, was not very carefully examined and diverticula were not observed in this portion.

It could be argued that a small mesenteric cyst, situated at the intestinal border, had become infected, causing a mesenteritis and kinking of the bowel, and that these diverticula had arisen as a result of the distension from the partial obstruction of the intestine. There is no doubt but that the obstruction made the diverticula larger and more conspicuous, but if they owed their origin to intestinal distension alone we would expect to find them in every case of intestinal obstruction, whether acute or chronic, and especially the latter. On the other hand small diverticula could be present which would easily escape observation unless the intestine was examined very carefully (unfortunately not done in this case). Should one of these diverticula become infected a mesenteritis would result; the base of the diverticulum might become compressed and then occluded by inflammation. Its distal patent portion would become distended and a condition such as the above would occur. As a result of the kinking of the intestines obstruction would take place and previously insignificant and small diverticula would become greatly enlarged, and therefore more conspicuous.

The distal cystic portion of the partially obliterated diverticulum was removed and its base reinforced with sutures of fine catgut, taking care to avoid injuring the mesenteric vessels. The puckered mesentery was straightened out, thus relieving the angular kink in the small intestine. The question arose as to what should be done with the remaining diverticula. One hesitates to resect over forty centimeters of the small intestine unless it is absolutely indicated, especially when the distension would cease and the diverticula would become much smaller after the obstruction had been relieved. The invagination of each diverticulum and the closure of its hernial opening in the intestine was considered, but this did not seem advisable on account of the intimate relation between the diverticula and the larger blood vessels. The procedure would certainly occlude some of the larger blood vessels of the intestine and might cause necrosis of the portion of intestine nourished by the blood vessel.

Still further it seemed best not to disturb the remaining diverticula because:

1. They had probably been present for a long time and only one had given rise to any clinical symptoms.

2. Their situation in the upper portion of the circumference of the intestine and between the folds of the mesentery insures better drainage of their contents and also greater protection from secondary pathologic changes than in diverticula arising from the free border of the intestines.

3. The fluid contents of the small intestine, and the broad bases, with patent orifices of the diverticula, both make it very unlikely that any trouble will ever arise from the accumulation of fecal material in the diverticula, as occurs in similar diverticula of the large intestine. In addition, all the other diverticula were examined and found empty, and in none could any secondary pathologic changes be detected.

A small gauze drain covered with rubber protective was placed down to the raw and infected area and the abdominal incision was closed. The drain was removed at the end of forty-eight hours. Convalescence was uneventful; the patient left the hospital three weeks after the operation.

Remarks.—The exact portion of the small intestine involved was not ascertained, but judging from the length of the intestines exposed proximal to the involved portion of the intestines, the diverticula were situated in the upper portion of the ileum or in the lower portion of the jejunum.

An interesting question arises as to the situation of the enteroliths. There were two, about the size of hen's eggs, and we do not believe that they could have been situated in the small intestine. If they formed the mass which was palpated just before the very vigorous catharsis and colonic irrigations, they must have been situated in the transverse colon, which had been kinked by the adherent mesentery of the small intestine, otherwise the enteroliths were never palpated and the mass which disappeared was fecal material which had accumulated back of the stricture. It is impossible to settle this point.

INTESTINAL DIVERTICULA.

Diverticula of the intestines may be classified as congenital and acquired. Histologically they may be classified as true and false, the former containing all the coats of the intestine and the latter being but hernial protrusion of the inner coats through the muscularis. All congenital diverticula are true ones and the acquired ones are nearly always false, but true acquired diverticula have been reported.

The vermiform appendix is a true congenital diverticulum containing all the coats of the cecum. The pathologic changes which may occur in this diverticulum and their clinical manifestations will not be considered here.

Meckel's diverticulum is another example of a congenital true diverticulum. According to Kelly and Hurdon[2] it occurs in 0.5 to 2 per cent. of all bodies coming to autopsy and usually arises from the ileum from 80 to

1. Ayer: "Enteric and Mesenteric Cysts, with Report of an Unusual Case," Amer. Jour. Med. Sciences, 1906, vol. cxxxi, p. 100.

2. Kelly and Hurdon: "The Vermiform Appendix and Its Diseases," Saunders & Co., Philadelphia, Pa., 1905, p. 594

290 cm. from the cecum, but may arise from the duodenum or jejunum. This diverticulum is of great surgical importance, causing, according to Halstead,[3] 6 per cent. of all cases of intestinal obstruction, aside from giving rise to other forms of acute abdominal conditions demanding surgical interference. A full consideration of the subject, with a complete review of the literature, has recently been made by Dreifeus,[4] and Porter[5] has recently analyzed 184 cases and has described the pathologic conditions caused by this diverticulum.

The acquired diverticula occur much more frequently than autopsy records show and are apparently less likely to give rise to symptoms than Meckel's diverticulum, which may account for their supposed infrequency. They may be classified according to the portion of the intestines from which they arise, i. e., whether the small or large intestine. Judging from autopsy and clinical reports, they occur more frequently in the large intestine and especially in the sigmoid.

FREQUENCY OF ACQUIRED DIVERTICULA OF THE INTESTINES.

These diverticula, especially as they are frequently mesenteric, could be easily overlooked at autopsy unless the intestines were examined very carefully. Heretofore they have been of very little general pathologic and clinical interest, and for these reasons all pathologists have not borne them in mind while making their autopsies and studying the intestines afterward. These points are well shown in Table 1.

TABLE 1.

Source.	Number of autopsies.	Meckel's diverticulum.	Acquired diverticula. Small intestine.	Large intestine.
1	8,133	8	1	6
2	2,600	15	14	19
3	2,382	11	1	1
4	953	5	0	2
Total	14,068	39	16	28

Table 1.—Compiled from: 1, Records of the City Hospital of Dresden, Freidrich Stadt (Georgi's[6] article); 2, the Johns Hopkins Hospital (communicated by Dr. C. H. Bunting); 3, the Boston City Hospital (communicated by Dr. F. B. Mallory), and 4, the Bender Hygienic Laboratory (communicated by Dr. R. M. Pearce).

This table does not show the actual occurrence of these diverticula, but rather that they are much more frequent than the records indicate when one institution has recorded 32 instances (one case presenting diverticula in both the large and the small intestine) of acquired diverticula of the intestines, as compared with only 11 similar cases in over four times the number of autopsies from three other sources. Two other interesting features of the records of the above-mentioned hospital show that in 2,600 autopsies these acquired diverticula occurred over twice as often as Meckel's, and, furthermore, that they were nearly as frequent in the small as in the large intestine. It is evident that these diverticula occur more frequently than the autopsy records indicate, and, as shall be shown, they are of much greater clinical importance than has been accorded them.

ETIOLOGY OF ACQUIRED INTESTINAL DIVERTICULA.

Of the predisposing causes, constipation, old age, cachexia, obesity and chronic passive congestion seem to have been important etiologic factors in many of the reported cases. Traction undoubtedly causes, occasionally, an intestinal diverticulum, as shown by a few cases reported, in which a tumor, which was adherent to a portion of the intestines, has pulled it out, forming a diverticulum. Their prevalence at the mesenteric border and their relation to the blood vessels penetrating the intestines at this place was explained by Klebs[7] on the theory of traction. More probably they arise from pressure within forcing the inner coats of the intestine through a weakened place in the intestinal wall, and this better explains their frequent intimate relation to the blood vessels penetrating the intestines at the mesenteric border, as has been emphasized by several of the later investigators.[8]

Many experiments have been made to ascertain the origin of these diverticula by injecting intestines removed at autopsy and also by injecting the living intestines of dogs. The results of these experiments have been fully described by Beer.[9] While these experiments may be interesting, they have very little value in explaining the etiology of these diverticula, for if they were caused by intraintestinal pressure alone they would be found in every instance of acute, and especially of chronic, intestinal obstruction from any cause. These diverticula are hernias, and, as in other hernias, there must be a local weakness of the wall through which the hernial sac may be forced. In many instances—and this is especially true of the small intestine—the penetration of the intestinal walls by the large vessels at the mesenteric border causes this weak place. In other cases in which they occur on the free border of the intestines, as they may in the large intestines or even in the epiploical appendages, we must assume that here, too, there was present a weakened place in the musculature of the intestinal wall.

CLINICAL SIGNIFICANCE OF ACQUIRED DIVERTICULA OF THE SMALL INTESTINE.

We have been unable to find a single case reported in the literature in which clinical symptoms have arisen from diverticula of the small intestine. In our case the patient did not suffer from any marked attacks of indigestion, nor were there any local disturbances until the sudden onset of diverticulitis, causing mesenteritis and intestinal obstruction two months before her operation. We therefore conclude that the diverticula which must have been present for some time did not give rise to any marked symptoms until the present attack.

On the other hand, the presence of inflammatory changes found in the diverticula described by Fischer, together with our case, shows that not only is it possible for these diverticula to have minor secondary pathologic changes and hence possibly give rise to minor clinical disturbances, but it is also possible that serious changes may occur, thus endangering the life of the individual. One may have all the inflammatory changes (but less frequently, for reasons already given) that may occur in any diverticulum, with the secondary local or general peritonitis. In addition its usual situation between the folds of the mesentery causes a mesenteritis as a complication of the diverticulitis. In such cases the mesentery may become thickened, puckered and folded, giving rise to the angular bending of the intestine found in our case

3. Halstead: "Intestinal Obstruction from Meckel's Diverticulum," Annals of Surgery, 1902, vol. xxv, p. 477.

4. Dreifeus: "Das Divertículum Ileï," Centbl. f. d. Grenzeb. d. Med. Chir., 1905, vol. viii, Nos. 11 to 16.

5. Porter: "Abdominal Crises Caused by Meckel's Diverticulum," THE JOURNAL A. M. A., 1905, vol. xlv, pp. 883 to 889.

6. Georgi: "Ueber das erworbene Darmdivertikel und seine praktische Bedeutung," Deutsche Zeitft. f. Chir., 1902, vol. lxvii, pp. 321 to 329.

7. Klebs: "Handbuch der Path. Anat.," Berlin, 1869, vol. i, p. 271.

8. Fisher: "False Diverticula of the Intestine," Jour. Exp. Med., 1900-1901, vol. v, pp. 333 to 352.

9. Beer: "Some Pathological and Clinical Aspects of Acquired (false) Diverticula of the Intestines," Amer. Jour. Med. Sciences, 1904, vol. cxxviii, pp. 135 to 145.

and causing intestinal obstruction. It is also possible that a diverticulum may become so thin that a sudden increase in intra-abdominal pressure may cause its rupture, as has occurred in cases of diverticula of the large intestine.

As shown in the consideration of the frequency of false diverticula of the small intestine, these occur more often than the autopsy records show. As they have not been duly recognized, they undoubtedly have given rise to minor or serious secondary pathologic changes, which either have been overlooked or the cause of the trouble has not been correctly interpreted, the condition being incorrectly attributed to pathologic changes caused by the appendix or by Meckel's diverticulum or some other condition.

Our present knowledge suggests that the acquired diverticula of the small intestine, when present, are less of a menace to the life of the individual than similar diverticula of the large intestine or Meckel's diverticulum, and possibly even less than the vermiform appendix. On the other hand, we do not as yet know what rôle it plays in the causation of minor complaints, as indigestion and indefinite abdominal pain and discomfort.

TREATMENT OF ACQUIRED DIVERTICULA OF THE SMALL INTESTINE.

For the following reasons it would seem that these diverticula do not need surgical interference unless causing definite symptoms, and the treatment in these cases should vary with the demands of each individual case:

1. The fact that this condition has frequently been overlooked at autopsy and that we have been unable to find any cases reported in which secondary pathologic changes have caused clinical symptoms, suggests that these rarely occur. The reason for this can readily be understood from the situation of the diverticula and the fluid contents of the small intestine, as has previously been explained.

2. The usual situation of the diverticula between the folds of the mesentery and their intimate relation with the larger blood vessels make any operative measures on individual diverticula attended with danger of injuring the blood vessels crossing the diverticulum, and thus possibly causing local intestinal necrosis.

3. The diverticula are usually multiple and a long area of the intestine may be involved, sometimes the greater portion of the small intestine, thus excluding, in most cases, the advisability of resecting the area of the intestine involved.

THE CLINICAL SIGNIFICANCE OF ACQUIRED DIVERTICULA OF THE LARGE INTESTINE.

Judging from autopsy reports, acquired diverticula of the large intestine are more frequent than those of the small intestine. In 2,600 autopsies at the Johns Hopkins Hospital there were thirteen diverticula of the small intestine, as compared with eighteen of the large and one of both. Secondary pathologic changes occur in these more frequently than in those of the small intestine, and this may account for their having been observed more frequently. They are also usually multiple and may arise from any portion of the circumference of the intestine, the mesenteric border or free surface, and they may also extend into the epiploical appendages. They have been observed most frequently in the sigmoid flexure, but may occur in the other parts, including the appendix. In some instances it has been possible to demonstrate their relation to the larger blood vessels, i. e., in cases in which they develop in the mesentery, as in those of the small intestine. In other cases in which they have arisen from the free border this relation has not been so evident.

The contents of the large intestine being harder than that of the small, and thus the liability of these diverticula becoming filled with hardened fecal matter renders them more prone to secondary inflammatory changes, which is especially true for the diverticula arising from the free surface of the intestine.

In 1904 Beer[9] collected from the literature 18 instances of inflammatory processes arising in these diverticula and leading to grave, often fatal, results. The same year Heine[10] collected 8 instances of intestinovesical fistula, including one case of his own, where such a fistula had resulted from a false diverticulum of the large intestine becoming adherent to and ulcerating into the bladder. He states that these fistulæ occur more frequently than has been supposed, and he gives abstracts of 9 other reported cases of vesico-intestinal fistulæ, which from their description should probably be included in this group, but in which the author had not considered this condition. It is evident that these diverticula are of considerable clinical importance, especially as they cause trouble much more frequently than the literature shows, because they either have not been recognized or the true condition has been attributed to something else. Cases representing all forms of acute inflammatory conditions and the results of these conditions have been reported, and Hochenegg[11] has reported one instance of cancer arising in one of these diverticula.

Stricture of the intestine or a localized abscess formation which may result from inflammatory changes in these diverticula form a most important group of cases, as they have usually been diagnosed as cancer, thus suggesting that other cases diagnosed as cancer may have been these. This would well account for some of the good results following colostomy in clinically diagnosed inoperable cancer of the sigmoid.

The following case may have been one of this class:

Patients.—Mrs. C. F., aged 63, was admitted to the Johns Hopkins Hospital May 7, 1904.

History.—She complained of pain in the lower abdomen and pressure on the rectum caused a great desire to go to stool, but she was not relieved by movements of her bowels. For two years there had been slight pain in the left ovarian region, and her present illness was of one week's duration, with the onset of severe cramps and with rectal symptoms necessitating her staying in bed.

Examination.—On pelvic examination a mass about the size of one's fist was felt adherent to the left side of the pelvis in the region of the right ovary. A probable diagnosis of malignant growth of the ovary, causing pressure on the rectum, was made.

Operation.—An exploratory laparotomy was made by Dr Sampson (then resident gynecologist of that hospital), and the tumor, which was densely adherent, was found to have arisen from the sigmoid. A diagnosis of carcinoma of the sigmoid was made and attempts were made to remove it, but after partially freeing it this was abandoned. During the manipulations necrotic tissue was encountered, suggesting the presence of an abscess which could well have arisen from a necrotic cancerous involvement of the sigmoid. A loop of the sigmoid

10. Heine: "Ueber Darmblasenfisteln infolge von Darmdivertikel," Centbl. f. die Kr. d. Harn u. Sex. Organe, 1904, vol. xv, pp. 401 to 415 and 458 to 471.

11. Hochenegg: "Behandlungsresultate bei Dickdarm-Carcinoma," Deutschen Ges. f. Chir., thirty-first meeting, reported in Berl. klin. Wochft., 1902, vol. xxxix, p. 343.

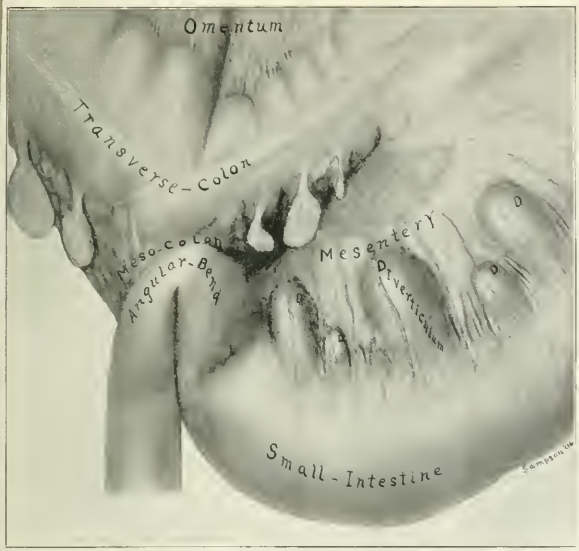


Fig. 2.—Distended loop of small intestine, showing five mesenteric diverticula and a kinking of the intestine due to adhesions resulting from an inflamed diverticulum (natural size). The omentum has been lifted up, showing the under surface of the transverse colon, with its mesocolon and a partially obstructed loop of the small intestine adherent to the latter. Notice that the diverticula of the distended portion of the small intestine extend between the folds of the mesentery and are crossed by large blood vessels supplying the intestine.

above the tumor was brought out through a gridiron inguinal incision and sutured there so that a colostomy could be made whenever the occasion demanded. The field of operation was drained and the abdominal incision closed.

The patient left the hospital in a month's time feeling greatly relieved, and with the understanding that a colostomy would be established whenever necessary. From a reply dated Dec. 16, 1905, to a communication addressed to her physician, Dr. E. B. Fenby of Baltimore, we learn that it has not yet been necessary to open the sigmoid, and also that the patient is in the best of health, teaching school, and on examination it was found that the lump, previously felt in the pelvis, has disappeared.

The effect of mesenteritis arising from diverticulitis is well shown in the first case here reported, where the puckering, thickening and folding of the mesentery had given rise to an angular bending of the intestine, and one can well see how such a condition could be the axis about which a volvulus might be formed. Our case, then, supports the views of Brehm[12] as to the possible relation between diverticulitis, mesenteritis and volvulus.

THE TREATMENT OF ACQUIRED DIVERTICULA OF THE LARGE INTESTINE.

It is evident that these diverticula are much more likely to undergo secondary pathologic changes and hence to give rise to clinical symptoms than similar ones of the small intestine, and for this reason they more often demand surgical interference. On the other hand it is apparently the exception rather than the rule for these diverticula to cause serious trouble. We do not know how important a rôle they play in the cause of minor ailments. A very interesting clinical feature is the mistake made in their diagnosis and especially their being taken for cancer of the large intestine. In cases demanding operative interference the treatment should vary with the condition found.

On the other hand, when found accidentally these diverticula should be removed, unless too numerous, and if this can be done without interfering with the nourishment of the intestines. This is especially true of those arising from the free surface of the intestines, as they are more easily removed and also more likely to cause trouble than those developing into the mesentery.

CONCLUSIONS.

Acquired diverticula of the small intestine occur much more frequently than the autopsy records show, and undoubtedly have often caused minor symptoms and even occasionally endangered life, and the true cause of the trouble has not been recognized. These diverticula are usually multiple and long areas of the intestine may be involved, even the entire length of the small intestine. They consist of hernial protrusions of the mucosa and submucosa through a weakened place in the intestinal wall, and they usually escape alongside of the blood vessels penetrating the intestinal wall at the mesenteric border, and thus push between the two folds of the mesentery. Their usual situation, between the folds of the mesentery, renders them less likely to undergo pathologic changes than diverticula hanging free in the peritoneal cavity or attached to the abdominal wall. Also the fluid contents of the small intestine render

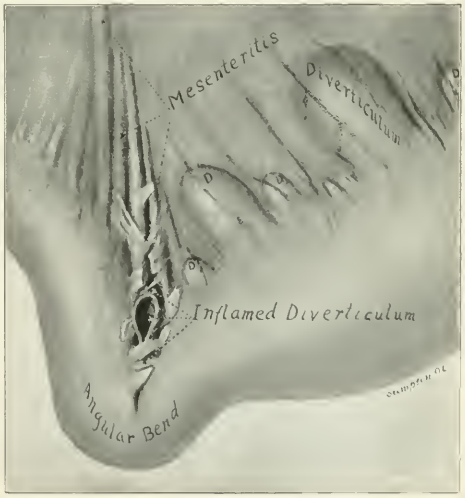


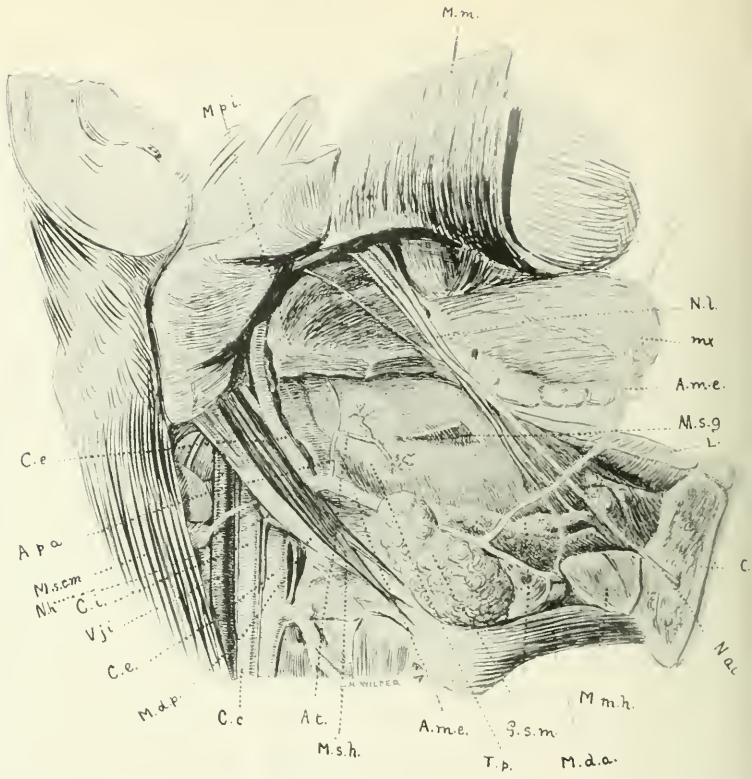
Fig. 3.—Diverticulitis causing local peritonitis and mesenteritis with a resulting angular bend in the intestine causing obstruction (natural size.) The loop of the small intestine, adherent to the mesocolon, has been freed, and in doing so the distal portion of the inflamed diverticulum has been ruptured. The base of the inflamed diverticulum has been occluded, so that the distal portion appears like a small infected mesenteric cyst situated near the border of the intestine.

12. Brehm: "Ueber die Meseuterialschrumpfung in ihre Beziehung z. Volvulus der Flexura sigmoidea," Archiv. f. klin. Chir., 1903, vol. lxx, pp. 267 to 301.

them less of a menace to the individual than similar diverticula of the large intestine. Should inflammatory changes arise, a mesenteritis is likely to occur with a resulting puckering of the mesentery and possible kinking of the bowel, as occurred in the case here reported. As these diverticula are usually multiple, thus involving a long area of the intestinal tract, and as they are usually intimately associated with the larger blood vessels of the intestines, they are ill adapted to safe operative procedures and apparently these have seldom been indicated. When secondary pathologic changes occur, thus endangering the welfare of the individual, operative treatment may be indicated, and this must vary with the demands of each case.

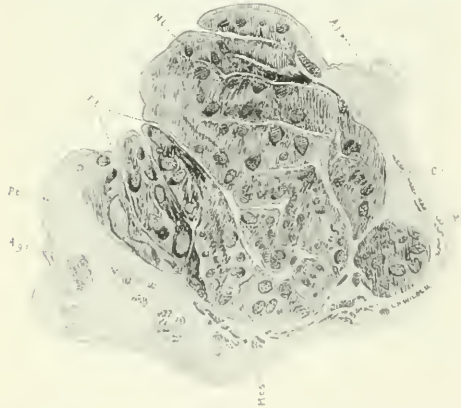
The acquired diverticula of the large intestine may arise from any portion of its circumference and have been most frequently found in the sigmoid flexure. They have been more frequently observed than similar ones of the small intestine, and several cases have been reported in which they have given rise to serious trouble. They are usually multiple and consist of hernial protrusions of the mucosa and submucosa through a weakened spot in the intestinal wall. As the contents of the large intestine are harder than those of the small, and as these diverticula occur more frequently on the free border of the intestine than do those of the small, they are more apt to undergo secondary pathologic changes and to endanger the welfare of the individual. Of great clinical interest is the difficulty in diagnosing the structures and inflammatory tumors which may result, from cancer, and also that intestinal diverticula are a frequent source of vesicointestinal fistula.

We again emphasize the fact that acquired diverticula of both the small and large intestine undoubtedly occur more frequently and also more frequently give rise to clinical symptoms than the reported cases and autopsy records indicate, and for this reason we would especially urge that this condition be borne in mind, both by pathologists and clinicians, in order that the medical profession may learn the frequency of their occurrence and also the part played by them as a cause of both minor and more serious abdominal disturbances.[13]



(Illustrating Dr. Wilson's Article.)

Fig. 2.—Dissection to show the tonsil and its arterial supply from the outer side; part of inferior maxilla removed. T.p., palatine tonsil; A.t., tonsillar artery; C.c., common carotid; C.e., external carotid; C.i., internal carotid; A.m.e., facial artery; A.p.a., ascending palatine artery; V.j.l., internal jugular vein; L., tongue; N. h., hypoglossal nerve with ramus descendens; N.l., lingual nerve and N.a.l., inferior alveolar nerve (drawn upward); C.md., inferior maxilla; mx., superior maxilla; G.s.m., submaxillary gland. Muscles: M.p.l., internal pterygoid (cut); M.m., masseter (turned up); M.s.g., styloglossus (cut); M.s.h., stylohyoid; M.d.p. and M.d.a., digastric muscle; M.s.c.m., sternomastoid; M.m.h., mylohyoid (turned down).



(Illustrating Dr. Wilson's Article.)

Fig. 1.—Transverse section of an enlarged tonsil, removed immediately after death, from a male, aged 28. Drawn from micro photograph. Adhesion of plica triangularis P.t., of anterior pillar (A.g.p.), and of posterior pillar (A.p.p.), to the tonsill. P.t., tonsillar crypt; N.l., lymphoid follicle; C.l., capsule; M.c.s., superior constrictor muscle.

13. For other contributions see collateral references in the articles cited in the footnotes.

SOME ANATOMIC AND PHYSIOLOGIC CONSIDERATIONS OF THE FAUCIAL TONSIL.*

J. GORDON WILSON, M.A., M.B. (Edin.)
Hull Anatomic Laboratory, University of Chicago.
CHICAGO.

INTRODUCTION.

In the true pharynx—that is, posterior to the tongue—there exists a more or less continuous ring of lymph follicles with their accompanying lymphatic vessels, differing in macroscopic but similar in microscopic appearance, generally called Waldeyer's ring. Beginning in the posterior pharyngeal wall as the pharyngeal tonsil, this ring passes to the follicular tissue in the pharyngeal recess, Rosenmüller's fossa, thence around the pharyngeal orifice of the Eustachian tube to the soft palate, and along the posterior pillar of the fauces to the palatine tonsil, which is connected with its fellow by the mass of follicular tissue at the base of the tongue, the so-called lingual tonsil. From this ring, lymphatic prolongations of varying extent pass off into the nasal fossæ, to the epiglottis and to the larynx.

This ring exists as:

1. More or less irregular masses—as in the soft palate.

2. Continuous layers at the base of tongue and round the tube comparable to Peyer's patches.

3. Circumscribed masses possessing a fibrous connective tissue boundary and forming a more or less distinct unit. These form on the pharyngeal wall the pharyngeal tonsil, and between the pillars of the fauces, the palatine or faucial tonsil. They are analogous in many respects to the lymphatic glands, but differ in having crypts or furrows which communicate with the buccal cavity.

It is to the last of these, the palatine tonsils, that attention is here directed; and it is to the palatine tonsils I refer when speaking generally of the tonsils.

In this section of the paper I limit myself to a brief discussion of some points bearing on the surgical anatomy of the tonsil.

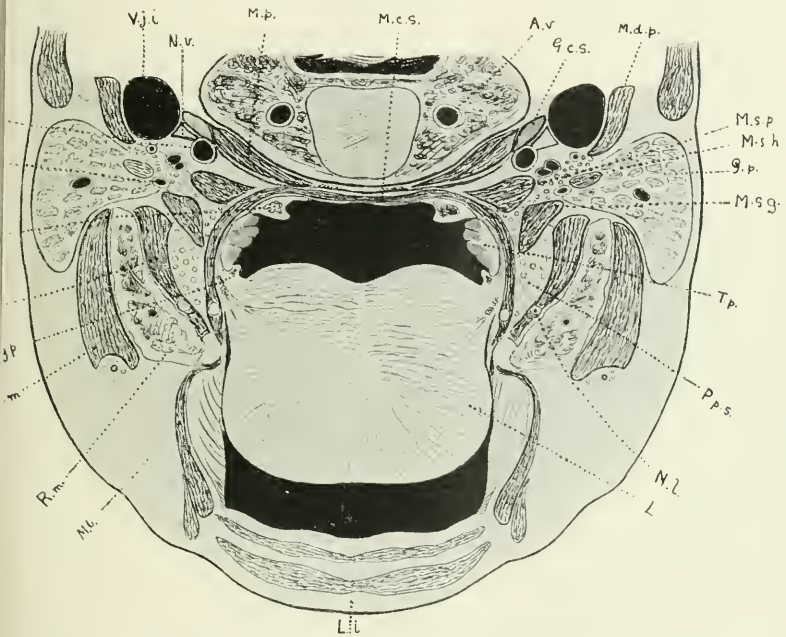


Fig. 3.—Transverse section through the tonsil. T.p., faucial tonsil; A.g.p., anterior pillar; A.p.p., posterior pillar; P.p.s., pterygopharyngeal space; G.p., parotid gland; A.c.e., external carotid artery; A.c.i., internal carotid artery; V.j.i., internal jugular vein; A.v., vertebral artery; M.p., prevertebral muscles and fascia; R.m., ramus of mandible; N.v., vagus nerve; G.c.s., superior cervical ganglion; M.b., buccinator muscle; M.c.s., superior constrictor; L.i., lower lip with orbicularis muscle; L., tongue (cut). (Other lettering as in Fig. 2.)

THE NORMAL SIZE AND DEVELOPMENT OF THE TONSILS.

The normal size of the palatine tonsil is hard to determine, since few have escaped some irritation and inflammation. The following measurements appear to me to be as nearly accurate as any: Length, 20 mm. (Luschka); breadth, 12 to 15 mm. (Sappey); thickness, 13 mm. (Luschka).

Of the follicular masses forming Waldeyer's ring, the pharyngeal tonsil is the first to develop; it is well marked at birth and reaches maturity at the end of the first or second year. It retains this mature state till the twelfth year, when it begins to retrograde.[1] The activity of the palatine tonsil has been demonstrated at the end of fetal life not only

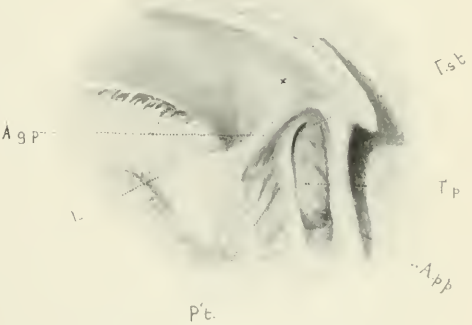


Fig. 4.—Relation of supratonsillar fossa to soft palate; + marks average position of the apex of the fossa in 12 cases in which its presence was marked. F.s.t., fossa supratonsillaris; P.t., plica triangularis; A.g.p., anterior pillar; A.p.p., posterior pillar; T.p., tonsil; L., tongue.

* Read at the conjoined meeting of the Chicago Medical and the Chicago Laryngological and Otological Societies, March 7, 1906.

1. Poirier et Charpy: "Anatom. Humaine," vol. iv, p. 165.

by the multiplication of lymphocytes in the follicles, but by the infiltration of leucocytes into the overlying epithelium.[2] It is well developed at the end of the first year, but apparently does not reach maturity till the fifth year. The lingual and tubal lymph follicles are slower in reaching maturity and can only be said to be definitely developed about the twelfth year. All these dates, however, are very variable, depending on individual peculiarities.

The Capsule of the Tonsil.—The tonsil is enclosed in a capsule of connective tissue which, according to Zuckerkand, is normally 1 mm. thick.[3] From the capsule bands go off between the lymph follicles in which lie the blood vessels and lymphatics. The capsule is covered externally by the superior constrictor muscle and by the attachments of the anterior and posterior pillars of the fauces containing the M. glosso-palatinus and M. pharyngo-palatinus.

What is the effect of hypertrophy of the tonsil on the capsule? In hypertrophy either or both of the pillars may become more closely related to the capsule and the follicular tissue in the pillars may blend with the corresponding tissue of the tonsil. Labbé[4] showed that in children and young adults there is in hypertrophy no real thickening of the connective tissue and that the proportion of connective tissue is relatively not greater than normal. This has received ample corroboration. In the enlarged tonsils I have examined, this appears to be the case. It is especially to be noted in tonsils which are removed along with their capsule immediately after the sudden death of a healthy adult. In such cases one can note how the crypts and follicular tissue encroach on the connective tissue capsule (Fig. 1).

The Blood Supply.—The blood supply to the tonsils is given differently in English anatomic texts. Thus Gray[5] gives "the dorsalis linguæ from the lingual artery, ascending palatine and tonsillar from the facial, the ascending pharyngeal from the external carotid, and the descending palatine from the internal maxillary, and a twig from the small meningeal." While this description may apply to such animals as the dog, in which certainly the main supply comes from the lingual, it does not accord with what we usually find in man. My observations lead me to believe that the main blood supply in man comes from the facial, either through a distinct tonsillar artery or more commonly from the tonsillar branch of the ascending palatine branch of the facial. The dorsalis linguæ gives one or two branches which pass into the lingual side of the sinus tonsillaris, but its distribution is chiefly to the pillars of the fauces and to the plica triangularis and any follicular tissue which may be there. A branch of the descending palatine lies in the soft palate in the region of the supra tonsillar fossa. I have observed a few cases in which

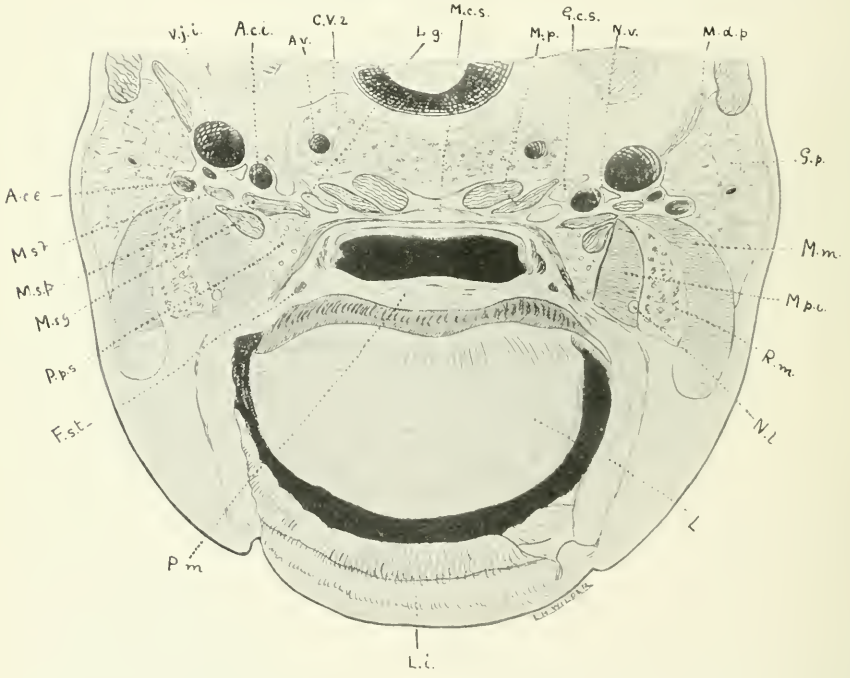


Fig. 5.—Transverse section through the soft palate to show the relation of the fossa supratonsillaris to neighboring structures. Lettering as in Fig. 3. L.g., retropharyngeal lymph gland; P.m., soft palate; C.v.2, second cervical vertebra; F.s.t., supratonsillar fossa (cut).

2. Stöhr: "Zur Physiologie der Tonsillen," Biol. Centlb., 1882, vol. II, No. 12.

3. Zuckerkandl: Quoted by Grober, "Tonsillen als Eintrittspforten für Krankheitserreger," Klin. Jahr., 1905, p. 155.

4. M. Labbé et Levi Strugue: "Etude de quelques amygdales hypertrophiées," Bull. de la Soc. Anat. de Paris, 1889, p. 922.

5. Gray and De Costa: Text-book of Anatomy, p. 1213.

it was relatively large and lay on the floor of the fossa, being distributed to the follicular tissue which at times appears in considerable amount.

The branch from the facial comes off near the origin of this artery from the external carotid. It passes under the mandible and internal pterygoid muscle and over or under the styloglossus into the loose fatty tissue of the pterygo-pharyngeal space. At or near the middle of the tonsil the arterial supply, usually a single branch, passes to the buccopharyngeal fascia, which covers the superior constrictor externally and there divides into two branches, a superior and an inferior.[6] These two trunks pass through the superior constrictor muscle and divide on the capsule of the tonsil into numerous branches which pass into the gland along the interfollicular connective tissue septa (Fig. 2).

The pterygo-pharyngeal space appears to me to play an extremely important part in the surgical anatomy of the tonsil. It is of irregular conical form—more or less triangular in cross section. It contains a varying amount of loose fatty areolar tissue in which lie the ascending palatine and tonsillar arteries. It is bounded externally by the internal pterygoid muscle, internally by the pharyngeal wall, posteriorly it communicates with the fatty tissue of the pharyngeal maxillary space adjacent to the postero-lateral angle of the pharynx, in which lie the internal carotid artery, the external carotid artery, the internal jugular vein, with its branches, numerous nerves, and the styloid muscles (Fig. 3). The tonsil rests in the medial side and is, therefore, separated by the fascia and fat in this space from the pterygoid muscle and mandible against which it may be pressed.

It is by no means an uncommon opinion that in operations on the tonsil it is relatively easy to injure the internal carotid artery. This artery at the level of the tonsil lies some distance lateral to the inner angle of the pharynx, about 1.5 cm. from the tonsil, and separated from it by the superior constrictor muscle, by the stylo-pharyngeus muscle and to some extent by the styloglossus muscle. With a space of 1.5 cm. filled with semi-fluid fat and loose connective tissue, it will be apparent that in tonsillectomy the chance of injury to this vessel is very small. Moreover, the ease with which the tonsil can be pulled forward on account of the presence of this loose areolar tissue, leaving the internal carotid *in statu quo*, reduces the danger of injury to a minimum.

The external carotid is usually 2 cm. to the side and posterior to the tonsil. In this position, shielded by the styloid muscles, it is little liable to injury. Occasionally it curves medially, approaching to or entering the pterygo-pharyngeal space, and there giving off the tonsillar artery; but this variation is extremely rare.

There is no disease of the tonsil so common and none which gives the ordinary practitioner so much concern in regard to treatment as the so-called tonsillar abscess. The anatomic relations of the area in which this usually occurs are very definite. From the upper part of the sinus tonsillaris, a supratonsillar fossa (*Recessus palatinus* of Killian) passes into the soft palate, curving superiorly and anteriorly. The upper part of this fossa often appears as a narrow recess whose extremity may lie from 8 to 10 mm., in rare cases from 12 to 15 mm., from the edge of the fossa. The apex of this recess, when of medium size, may be indicated by a point in the soft palate above and slightly anterior to the anterior pillar (Fig. 4). Postmortem examination shows the floor of the recess to be occasionally irregular with bands and constrictions.

In probably 90 per cent. of the cases of tonsillar abscess it is in this locality that the pus forms—in short, it is a supratonsillar or peritonsillar abscess. It is apparent from Figure 4 that it is by no means difficult, even though the tissues are swollen, to locate the usual site of pus formation. The deeper relations of the supratonsillar fossa are seen in Figure 5. From this it is obvious that injury to the internal or external carotid artery by judicious use of a knife in opening this form of abscess is impossible.

This brief account will explain why at times an easy way to evacuate the abscess is by means of a curved probe passed into the supratonsillar fossa.

To what is due the hemorrhage which occurs at times in tonsil operations? Considering the anatomic side of this question, a common cause is injury to the ascending palatine artery. The artery may be of very considerable size and often is in close relation to the bucco-pharyngeal fascia in the tonsillar region of the pterygo-pharyngeal space. Treves[7] quotes a fatal accidental perforation of the ascending pharyngeal artery. Such accidents in tonsillectomy could not result unless the superior constrictor had been cut through. The danger of such an accident is diminished by pulling the tonsil inward.

In operations involving, as they so often do, the anterior and posterior pillars and the plica triangularis, the branches of the lingual artery distributed there may give considerable hemorrhage.

A hemorrhage may occur from injury to a branch of the superior palatine artery. This artery, however, is not likely to be cut in opening a supratonsillar abscess because of its relation to the deeper wall of the abscess cavity.

Another though very rare source of hemorrhage is an abnormal relation of external carotid to the pterygo-pharyngeal space.

Hemorrhage from the tonsillar artery is, of course, the most common cause. In ordinary tonsillectomy the risk of severe hemorrhage is slight, since, as a rule, the vessels contract satisfactorily. In enucleation, however, especially with injury to the superior constrictor muscle, the main tonsillar artery or one of its two primary branches, might easily be cut and give troublesome hemorrhage. A severe hemorrhage from this source is not likely to occur in the most common form of tonsillar abscess.

Hodenpyl[8] has offered this explanation of tonsillar hemorrhages. As the branches of the tonsillar artery penetrate the tonsil they are surrounded by a fibrous sheath from the capsule; this sheath, when the tonsil is cut, contracts and hinders the artery collapsing. Anatomically, this explanation does not appear to me convincing, and I doubt if surgical experience permits us to consider it adequate.

ARE THE TONSILS A PHYLOGENETIC RESIDUE?

Before beginning consideration of the physiology of this organ, one may well consider whether we have here an organ of primary importance or one which may have had some definite purpose in the past history of the race, but which now exists as a phylogenetic residue.

Reasoning from residual organs generally, one may

6. It is interesting to note how the blood supply corresponds to the development of the tonsil in two parts.

7. Treves: "Surgical Anatomy," 1881, p. 117.

8. Hodenpyl: "Faucial Tonsils." Amer. Jour. Med. Sciences, 1891, p. 265.

affirm that were the tonsil a residual organ, we should find some of the lower animals in which it is better developed and more differentiated than in man, with a function not to be gainsaid. We should expect to find an ontogenetic history with early appearance in fetal life, rapid maturity and retrogression. What we do find is that in mammals of all the lymph nodes of the throat the tonsils are the most constant and most differentiated. According to Packard,[9] they appear in the crocodile as pharyngeal folds. It is generally agreed, however, that it is in mammals that one can definitely recognize them as distinct and particular organs.

The tonsil develops in a depression, the sinus tonsillaris, formed in the second branchial cleft. The mode of development varies in different species. Hammar,[10] to whom we are indebted for the most recent and most careful account, distinguishes two varieties:

1. A primary form, seen in such rodents as the rabbit, and in such carnivora as the dog and cat, where a tubercle appears at the oral side of the sinus and both in the sinus and round this tubercle the follicular tissue develops.

2. A secondary form, seen in pig, sheep, cow and in man, in which epithelial processes grow down into the sinus tonsillaris, round which lymph follicles form. The tubercle appears, but atrophies very early, and takes no part in the subsequent development. In its simplest form this is seen in the pig. What must be regarded as a more complex development is apparent in man, the cow and sheep, marked by an intratonsillar fold of tissue which divides the sinus into two recesses.

In man, the tonsillar anlage appears during the third month of fetal life. The remains of the tubercle persist as the plica triangularis. From the two recesses into which the sinus tonsillaris is divided by the intratonsillar fold there grow down epithelial buds which open out and form crypts. In the mesenchyme around the buds adenoid tissue develops and lymphocytes accumulate to form the tonsillar follicles. In short, the human tonsil develops in two parts, which afterward coalesce, and are usually indistinguishable as separate parts.

So far these researches show that there are certain groups of mammals in which the tonsils have reached an advanced stage of development—perhaps in no group as high as in man. From this it would appear that there is in the phylogenetic history not the least support for the hypothesis that in the tonsil we have a vestigeal organ. It is true that they reach maturity early, but in this respect they agree with lymph glands generally, which are more active physiologically in early life.

One might well hope that a comparative study would throw some light on their function. It would appear that in rodents, carnivora and insectivora the tonsils show the simplest type. In this connection it is interesting to note that in some rodents, e. g., rat, mouse and guinea-pig, there is no tonsil, and that no trace of an embryonic anlage has been noted. In ruminants and in man the tonsils are more complex. But from the meager supply of facts on their comparative anatomy it is impossible to divine their function.

THE SECRETION OF THE TONSIL.

In studying the secretion from the tonsil, the first fact that presents itself is that we have here a definite organ actively engaged in the production of lymphocytes. The germ centers of the follicles contain many cells undergoing mitotic division. From these follicles the lymphocytes may pass in one of two ways: 1. Directly into the lymphatic system. 2. Though the mucous membrane into the mouth, either directly or indirectly through the crypts, from which they are expressed during the act of swallowing.

In regard to the first of these, we need only say that, so far as our present knowledge goes, they do not appear to differ in any way from those secreted by other follicular glands; further, that the large and numerous efferent lymphatics point to the large outflow of lymph.

In regard to the secretion into the mouth, a great amount of discussion has taken place. The large majority of cells which pass normally out are lymphocytes, and these form the so-called salivary corpuscles. Commingling with these there are a varying number of polymorphonuclear leucocytes from the blood.

When one examines a little mucus from the surface of the tonsil of any one in good health and with no apparent inflammatory condition of the fauces, there are always found, in addition to the surface epithelium and innumerable micro-organisms, numerous lymphocytes and many polymorphonuclear leucocytes—some of which latter contain bacteria.

It has been asked whether this secretion is a physiologic or a pathologic process. It appears to me that we must regard it as physiologic, though one recognizes that here the line between a physiologic and a pathologic function is hard to define. One is led to this conclusion from its occurrences at all ages; even in embryonic life Stöhr[2] found lymphocytes in tonsillar epithelium. Further, this emigration is a phenomenon common to follicular tissue in all parts of the body.

This fact brings us no nearer to the reason for its occurrence. Hagenschmidt, however, showed that saliva, which contains bacterial products and enzymes, is capable of exciting in leucocytes a positive chemiotactic activity. Metchnikoff[11] believes that this afflux of leucocytes must be regarded as important for the protection of the buccal cavity, and suggests that it is probably due to this attraction of leucocytes and their phagocytic property that lesions of the mouth heal so quickly. He also recognizes the important rôle played by the epithelium of the buccal cavity and the effect of the growth of non-pathogenic organisms on the development of pathogenic. It must be acknowledged that this account of the phagocytic action of the excretion is not altogether satisfactory, because we find a relatively small number of leucocytes containing bacteria. Not only may the living leucocytes play an important part, but the leucocytes, after they have undergone dissolution, may set free a varying amount of cytases which they contain, and communicate bactericidal properties to the saliva.[11]

While one acknowledges the probability that the leucocytes from the tonsil—living or dead—may exert bactericidal properties, at the same time one can not but remember that in the mouth so many processes are still unknown[12] that it may well be the additional function of these lymphocytes to assist in one or other of these processes. Further, there is the possibility that the lymphocytes have already in the tonsil fulfilled partly their physiologic function and that their extravasation may be more of the nature of an excretion than a se-

9. Packard: "Infection Through the Tonsils," Phila. Med. Jour., 1900, April 21.

10. Hammar: "Das Schicksal der zweiten Mundspalte," Arch. f. mikrosk. Anat., 1902, vol. lxi, p. 404.

11. Metchnikoff: "Immunity in Infective Diseases," Cambridge, 1905, p. 428, p. 494.

12. For example, the purpose of sulphocyanid in parotid secretion.

cretion—an hypothesis quite in keeping with the anatomic appearance of their passage through the tonsillar epithelium.

Under all these considerations, however, the general belief seems to be that in the tonsil we have a definite organ, part of a ring of follicular tissue which surrounds the upper part of the alimentary canal at a point which, from its location and structure, is very open to disturbance and infection, whose physiologic function is connected with active processes at the beginning of the alimentary tract. One function may be to act as a defensive barrier against micro-organisms and, it may be, against other injurious bodies; and in these processes the lymphocytes and leucocytes may exert no unimportant part.

A question which appears to me to have received too little consideration is this: What effect have diseases which demand increased leucocytosis within the body on tonsillar exudation into the mouth and what is the relation of this to the disturbances of buccal and gastric activity which occur in these diseases?

It is well for us at all times to consider the physiologic aspect of problems which present themselves to us, even though we can not give a complete and satisfactory explanation. We are too apt so to magnify the pathologic importance as to diminish the physiologic consideration. It is well to give the tonsil some thought, not as a frequent seat of inflammatory trouble, and therefore a constant source of danger and a menace to the individual, but as part of a group of active glands placed in an area susceptible to disease. Such a view does not preclude the possible necessity for the removal of a tonsil should it be diseased. If this gland become the center of recurring inflammatory attacks, if its mucous covering is obviously a nidus for micro-organisms, if its size is hurtful to the development of the individual, if, in short, it is obviously no longer physiologic but pathologic, as a pathologic structure it requires appropriate treatment.

A CONSIDERATION OF PRURIGO, PRURITUS, AND SOME COMMON ITCHING DERMATOSES.*

OLIVER S. ORMSBY, M.D.
CHICAGO.

The object of this paper is to consider the points of interest in some of the commoner diseases of the skin, which are accompanied by the sensation of itching, with special reference to their differential diagnosis.

Prurigo is a rare disease, and the only reason for including it here is properly to place it and practically eliminate it. A disease productive of itching of varying intensity is one which sooner or later compels its host to seek for relief. Patients may carry for years without complaint cutaneous eruptions of different kinds that are not productive of physical discomfort, especially when these manifestations are hidden beneath the clothing; but when the peace of mind is disturbed by constant or intermittent suffering incident to the subjective symptom, itching, the physician is sought in the hope of relief.

* Read before the Aux Plaines Branch of the Chicago Medical Society, March 23, 1906.

* In the preparation of this article the following text-books have been consulted, in addition to special articles, for which due credit is given in the text: Hebra, Kaposi, Hyde and Montgomery, Stelwagon, Crocker, Osler; Morrow's "System of Dermatology"; Allbutt's "System of Medicine."

TERMS DEFINED.

The terms prurigo, pruritus and itching have been used so often interchangeably that they would seem synonymous.

Prurigo is now restricted to designate a disease first described by the master dermatologist, Hebra; pruritus, pruritus essentialis (Bronson), or pruritus cutaneus, to designate a disease which is a sensory neurosis. Itching is a prominent feature of the former disease and the only essential symptom of the latter. It occurs as a prominent symptom also in many cutaneous affections, but in all of these is secondary to cutaneous lesions. Among other such diseases are scabies, pediculosis, eczema, urticaria, etc. It is not to the lesional itching diseases, such as eczema, urticaria, etc., that reference is to be made, for usually these are easily recognized. Scabies, however, will be considered, for evident reasons, later.

PRURIGO.

Prurigo is a chronic and usually incurable disease. It is rare in America, but is common in Austria, and in varying degree in Germany and England. It begins, as a rule, in infancy, but at times has been noted to begin from the fifteenth to the thirty-fifth year of life. Though, as a rule, it remains throughout life, some patients have recovered, and the disease may be modified by treatment. It is always accompanied by intense itching. The earliest lesions are urticarial, after which the classical lesion appears, which is a colorless or slightly reddened papule. In time the skin becomes harsh, dry, thickened, excoriated, crust-covered and pigmented. Pustules and superficial ulcerations occur. At a glance one sees that the major part of these lesions are due to the scratching. The sites of predilection are the extensor surfaces of the limbs, and to a less degree the abdomen, buttocks, chest, and occasionally the face. Inguinal and axillary adenopathy occurs. The former glands often become very large. The prurigo mitis of Willan presents the same, but a less intense, picture.

The essential cause is unknown, but it is commonly classed as a neurosis. Poverty and insanitary conditions predispose, and the male sex is more often attacked. Although examples of this disease are occasionally seen here, it is so rare that a more detailed description is not necessary, this much being given merely for its identification.

PRURITUS.

In cutaneous medicine to-day, pruritus signifies a disease, not a symptom. It is a sensory neurosis, in which itching is the sole essential symptom. Other symptoms are usually present, however, and are evidenced locally by the torn and injured skin, and systemically by varying degrees of malnutrition and lowering of the vitality of the patient through loss of rest. It is usual to classify pruritus into two varieties, general and local, and with propriety a seasonal variety, pruritus hiemalis, could be added.

General Pruritus Essentialis.—General pruritus occurs usually in adults, a common example being the so-called senile pruritus. Although all parts of the cutaneous surface are liable to be attacked, it rarely attacks the whole area simultaneously, but moves about from place to place. The itching may be intense; is worse at night, but occurs more or less throughout the day, the morning hours being the least uncomfortable. The intensity of discomfort is sometimes relieved only by producing sufficient trauma to bring blood, and thus change the sensation to one of burning and smarting. The paroxysms are of varying duration, and, while early in

the disorder no objective symptoms are present, all those belonging to traumatic dermatitis may be added later. Many of these patients restrain themselves and avoid scratching while awake, but during sleep inflict serious damage on their skins.

Local Pruritus Essentialis.—In local pruritus the areas attacked are the anal, vulvar and scrotal regions, and occasionally the palms, face and scalp. Pruritus vulvæ may affect the labia, vagina and clitoris. The whole area or any part of it may be involved. The disorder may extend over the perineum and surround the anal region. In men the scrotal or anal region, alone or in combination with the perineum, may be attacked. The skin about the anus presents a whitish, sodden appearance, with increase in depth of the folds, in which there collects a foul-smelling secretion. The scrotum also becomes thickened and soggy, and may even become vitiliginous. Frequently the intensity of the itching in these cases can not be described. Naturally, after a time, local inflammatory symptoms develop, due to the scratching and rubbing, which for a time might render the diagnosis difficult as to whether the case was originally a pruritus or an eczema. The methods of obtaining relief employed by some of these victims of the intense suffering testify strongly to its severity. In women the intense itching is irresistible, and the effect produced by the rubbing is detrimental not only physically, but morally. Not once or twice, but several times patients have come under observation whose suffering for years with such a pruritus have driven them to contemplate self-destruction to end the torture.

The palmar cases of local pruritus are rare, and when present, for anatomic reasons, are not accompanied by marked secondary lesions. The scalp and face cases are not common, but are seen occasionally. Recently two cases occurred in the practice of Drs. Hyde and Montgomery in which a local pruritus, limited to the nose, cheeks and chin, had existed for several years. In each case moderate traumatic dermatitis accompanied the disorder. At times one small area may be noted over the course of a special nerve. Crocker reported one such case, limited to the course of the sciatic nerve. With one of the members of this society, I saw such a case, in which the pruritus occurred in a narrow band, which extended from the vulva along the entire length of the leg, terminating at the heel.

Etiology.—In every case of pruritus a probable cause must be diligently sought. While pruritus cutaneous is dignified by a name and described as a disease *per se*, it is essentially merely a symptom of some disturbance, local or more or less general, of the nervous system; and this disturbance is further secondary to many and varied internal and local organic and functional diseases, and even to increased or decreased physiologic activity, exhibited in pregnancy and the menopause, and finally to abnormal mental states. Bronson[1] states that hyperesthesia is the chief predisposing cause in all cases. This hyperesthesia may be acquired by long-continued irritation of the cutaneous nerves in various itching dermatoses, such as eczema, lichen planus, scabies, etc., or it may be inherited.

In casting about for light on the cause of a general or local pruritus, one must make an extensive examination of the patient. Functional or organic disease of the stomach, intestines (including the rectum), liver, kidneys, bladder, urethra, uterus, ovaries, etc., may be causative. The intense itching accompanying jaundice is well known to all practitioners of medicine. This often appears only when the icterus is subsiding. An unaccountable pruritus may be the earliest symptom of an internal carcinoma. Gastric carcinoma has been known to produce intense general pruritus. Pregnancy is often accompanied by local or more or less generalized pruritus. At the menopause in women, when the organs of reproduction are undergoing organic changes, pruritus occurs; and may be due to reflex local irritation or to the changes incident to the general effect these changes produce on the nervous system as a whole. Among the more common general diseases concerned in the production of pruritus are tuberculosis, malaria, various forms of nephritis, diabetes, mellitis, gout, etc.

Common among local causes of pruritus is constipation. The hard fecal matter lying in the rectum sets up a reflex irritation, as do also varicose veins and ascarides in this locality. Fistulæ, fissures and local hyperidrosis are causative. In the genito-urinary tract, vesical calculi, polypi and stricture may be effective.

Reflexly, general pruritus may be caused by a local pruritus. For example, severe generalized cases have occurred in people the subjects of an anal pruritus, the whole disorder clearing up by treating simply the local disease.

At times, psychic disturbances produce pruritus. This may be seen when a class of medical students or nurses are suddenly attacked by real pruritus when viewing a patient covered with pediculi. Another example of this form occurs in patients who believe themselves to be infected with certain parasites. These patients will declare that they not only feel the parasites, but see them emerging from the skin, and are able to catch quantities of them. The pruritus in these cases is often severe.

The degenerative changes occurring in the skin of the aged are a cause of senile pruritus, but other factors are also active here, such as deficient excretion, and various changes in the internal organs incident to age. Neurotic cases of pruritus occur in such diseases as hysteria and hypochondriasis.

Pruritus Hiemalis (Duhring).—This form of cutaneous pruritus might be classed as a seasonal variety, as it occurs only during the cold weather. It is properly classed with the neuroses. Special stress is laid on it here, because in this climate it is a fairly common affection and is not generally credited with the importance its frequent occurrence demands, and because of its likelihood to be mistaken for other itching diseases, especially scabies and other equally distinct diseases with demonstrable etiologic factors. It was first described by Duhring[2] in 1874, and has since been studied and carefully reported by many competent observers, such as Hutchinson,[3] Hyde,[4] Corlett,[5] and others. The disorder occurs in the autumn and winter, but clears up with the approach of warm weather. The chief symptom is itching, which is worse usually on retiring to bed. The skin in these cases is usually harsh and dry, and after a time presents lesions, induced by the rubbing and scratching to which it is subjected; namely, excoriations, broken stumps of hair, blood crusts, and enlarged follicles. It is due to changes incident to the cold weather, and is often aggravated by the coarse

1. Bronson, I. Bennett: "The Etiology of Itching," Medical Record, Oct. 24, 1891.

2. Duhring: Phila. Med. Times, Jan. 10, 1874.
3. Hutchinson: British Med. Jour., 1875, II, p. 773.
4. Hyde: Chicago Med. Jour. and Examiner, March, 1885, and February, 1886.
5. Corlett: Jour. of Cut. Dis., 1891, p. 41.

woolens worn at this season, though it occurs also in those whose personal habits as to clothing and cleanliness leave nothing to be desired. At times, several members of a family are attacked simultaneously or successively, which fact has led often to the erroneous belief that it is contagious. The lesions are commonly situated on the antero-internal aspect of the thighs, around the joints and to a lesser degree on the forearms and other parts of the body, such as the waist and other parts where pressure is exerted by the clothing.

Etiology: From a study of his cases with a review of others, Corlett[5] concludes that (1) the state of the general health plays no appreciable part in the production of the disease; that (2) though irritation of rough clothing aggravates the disease, it is not, *per se,* capable of producing it; (3) that meteorologic conditions are most important, the most potent combination being low temperature, low humidity, and a northwest wind, increased velocity meaning increased symptoms. This combination inducing evaporation and the low temperature reducing glandular activity to a minimum, the result is a harsh skin and irritation of the peripheral nerves, inducing the disease; (4) that it may be associated with other cutaneous neuroses.

Bath pruritus, described by Stelwagon, occurs in some people immediately following a bath. The sensations are itching or burning of varying intensity. It is usually located on the lower part of the body, from the hips down, but occasionally involves the arms also. It lasts from a few moments to an hour or so, then gradually subsides. It attacks adult males more frequently, and those who habitually have an irritable, dry skin. The temperature of the water appears to have little to do with the cases, as any temperature produces the same results.

SCABIES.

Owing to the markedly increased prevalence of scabies in this region during the past two years, it seems justifiable to lay some stress on this disorder as now seen.

In March, 1905, Dr. Hyde[6] published the observations of himself and associates on this subject, in which he demonstrated this increase. He attributes it to two main factors: first, that during the preceding year the immigration to this country from countries abundantly supplied with scabies exceeded that of past years: and, secondly, to the massing together of large numbers of people in the west, due to the exposition at St. Louis. The increase is noticeable in private as well as public practice. It is not at all common for whole families to appear at the public clinics affected with the disorder. In the public clinic of the Chicago Clinical School, scabies represented 10 per cent. of the total cases treated in 1903, 11 per cent. in 1904, and 16 per cent. in 1905; a fact which demonstrated the marked increase here. In private practice, the ratio of increase is as great or greater.

In December, 1904, Dr. E. Wood Ruggles[7] called attention to this fact in a paper in which he calls the increase an epidemic of scabies in the United States. The classical cases that one sees in clinics and hospitals abroad are not evident here; and it is important to recognize the fact that the disease attacks people in the best stations of life, where anything bordering to filth is not to be thought of.

As Dr. Hyde pointed out, the lesions may be few, and very careful search must be made to identify the disorder positively. In place of an enormous number of typical lesions, vesicles, vesico-pustules, papules, furrows, crusts, excoriations, etc., in the usual places—on the hands, between the fingers, around the wrists, about the axillæ and breasts of women, the nates of children, and the penis and scrotum of men—only a few lesions can be found, half a dozen furrows, not well marked, a few vesicles and papules, and some staining, but still accompanied by the usual intense itching, especially on retiring. The fact must be recognized, however, that very many more moderately severe cases of scabies are now appearing than formerly.

Two or three important points, which have a bearing on diagnosis and treatment, have been impressed in this connection: First, a number of cases are seen in which marked irritability of the skin has been induced by over-treatment, which makes it appear that the disease, instead of yielding, is increasing in severity, a dermatitis of varying intensity being present, accompanied by itching and many lesions, all of which subside on the withdrawal of the energetic treatment and the institution of a mild one in its place. Secondly, in some cases a form of dermatitis of moderate degree, accompanied by vesicle formation and other lesions simulating scabies, will remain for some time after the original disease has been eradicated, this, too, usually in private cases; and if the patient is aware of the original diagnosis, he is tormented by the thought that he is still the host of the dreaded *Acarus scabiei.* This cutaneous irritability is due either to the long-continued irritation of the nerve endings by the original disease, or to the treatment pursued for its relief, or to both, and is productive of itching, often of severe grades. When the skin in these cases is scratched or rubbed, vesicles and other lesions are induced, which resemble scabies but are not identical, as no furrows can be found, nor can the essential cause, the *Acarus scabiei,* be demonstrated. The vesicles, too, differ, in that they are not located at one end of the furrow, as in scabies. These cases have yielded best to complete protective dressings in the weakened areas.

DIFFERENTIAL DIAGNOSIS.

Under this heading, it is not necessary to consider at all the itching diseases whose symptomatology aside from itching is characteristic. Eczema, lichen planus, urticaria, dermatitis herpetiformis, and the like, are all sufficiently characteristic and rarely cause any confusion with the groups considered in this paper; so also are the local varieties, such as pruritus vulvæ, etc. They are described here and treatment outlined on account of their more or less common occurrence and obstinate character, as well as to complete the description of the term pruritus.

For the past twenty years, including the present winter, perhaps the commonest question presented to the dermatologist for solution by the general practitioner has been one concerning the diagnosis of some seemingly epidemic itching disease, which did not correspond apparently to the usual descriptions given for diseases with which they are familiar. In 1885-86, Dr. Hyde published two articles on winter pruritus, in which many letters from practitioners of medicine were quoted showing the confusion and perplexity existing on this subject. Under the titles "prairie itch," "Texas mange," "Ohio scratches," "swamp itch," "lumberman's itch," etc., these disorders have been described, and one sees

6. Hyde: The Amer. Jour. of the Medical Sciences, March, 1905.
7. Ruggles, E. Wood: Buffalo Med. Jour., December, 1904.

that geographical distribution had to do with the naming. It is generally conceded by the men doing most work with these diseases that the bulk of the cases variously named, belong in one of three categories—pruritus essentialis, pruritus hiemalis, or scabies. So it is with these that we are concerned in differential diagnosis.

Itching is the prominent symptom of all, and in all the itching is worse at night, either during disrobing or shortly after retiring.

Scabies and pruritus hiemalis appear among comparatively large numbers of people at about the same time; and as several members of one family may be attacked, both diseases at first glance appear contagious. But on closer examination it may be demonstrated that in scabies a variable length of time elapses between exposure to the disease and its subsequent development. A child brings the disease from school; shortly afterward, the person with whom this child sleeps will develop the disease, and so on, until perhaps the whole family, including the parents, are successively attacked. When very close association exists in families, an almost simultaneous development may occur; but still the time factor is of value. On the other hand, pruritus hiemalis is apt to develop more nearly simultaneously, as its etiologic factor affects all at the same time. Differences in susceptibility must here be considered, but it is true that the ones susceptible are apt to be attacked at the same time.

Lesional Points.—If sufficiently careful search be made in scabies, the following points may be found and are of value in the order named: first, the *Acarus scabiei;* secondly, the coniculus or gallery; thirdly, the vesicle at one end of the furrow; all of which are absent in the majority of cases of the other two disorders; and after these all the lesions due to scratching, such as papules, pustules, crusts, excoriations, etc. In pruritus hiemalis, a harsh, dry skin, with reddened follicular papules and broken stumps of hair, is important. In pruritus essentials (general or local) only the lesions due to trauma are present.

Regional Points.—If the lesions are located on the hands, between the fingers, and on the penis, scabies is the only solution. Pruritus essentialis and pruritus hiemalis do not attack these regions. Scabies selects by choice, in addition the area about the wrists, the axillæ and breasts of women, and the buttocks in children. Pruritus hiemalis selects chiefly and most markedly the antero-internal surface of the thighs, the anterior surface of the legs, and, to a lesser degree, the arms, etc. Pruritus essentialis is variable as to regions, as it attacks first one and then another, moving about from area to area.

Scabies and pruritus essentialis may occur at any season; pruritus hiemalis only during cold weather. An epidemic in July could only be scabies; one in November might be either. In isolated or single cases, all elements must be considered—season, lesions, and regions of the body involved. The fact that pediculi, fleas, human bugs or bedbugs may induce severe itching should be borne in mind. The long linear excoriations about the shoulders and back and other points of pressure on the trunk, with the small puncta where the *Pediculus vestementorum* obtained his meal from his temporary host, are characteristic of pediculosis corporis. The itching about the pubic region, with the easily demonstrable *Pediculus pubis* and its ova on the hair, are sufficient for this variety; while the enlarged suboccipital glands, the pus-infected lesions in the occipital region of the scalp, and the *Pediculus capitis* and its ova here are sufficient to settle the question.

The human bug attacks the extremities earliest about the ankles, as these areas are nearest his abode, and later other parts of the body. The lesion produced in procuring his meal is apt to be hemorrhagic. The flea, in susceptible people, induces urticarial lesions, in the center of which a punctum is evident. These wheals may occur in lines, being produced as he passes and feeds along. All of these local causes of pruritus are not difficult of recognition, but should be borne in mind, especially in isolated or doubtful cases.

TREATMENT.

Under this heading I shall consider only the treatment positively proved of value in pruritus, deeming it unnecessary to consider that of prurigo and only mentioning that of scabies.

Scabies.—Sulphur stands at the head of the list of remedial agents in the treatment of scabies, but on account of its disagreeable odor when used in an ointment, and its liability to produce dermatitis its otherwise universal use is somewhat restricted. It may be employed in the following formula:

℞ Sulphuris sublimat. ..... ʒii-ʒi 8-30
Adipis benzoinat
Unguenti petrolat., āā ..... ʒiss 45

M. Ft. unguentum. To overcome the odor balsam of Peru may be added in the same quantity as the sulphur.

Karosi recommends the following, which is reliable and has no odor and is not so likely to irritate:

℞ Naphthol ..... ʒiv 15
Cretæ preparatæ ..... ʒiiss 10
Saponis mollis ..... ʒiss 45
Adipis ..... ʒiii 90

M. Ft. unguentum.

In any case the patient should begin the treatment with a warm bath of about thirty minutes' duration, during which the surface is thoroughly shampooed with either green, or castile soap. In this way the furrows are opened and allow the medicament to come in closer contact with the active cause. The ointment should be used daily for three or six days, which is usually sufficient to eradicate all activity of the disorder. Should a few areas escape they may be treated later with the ointment. It is necessary to sterilize the under garments and bed clothing by boiling and the outer clothing by baking to prevent reinfection of the patient. Sherwell[8] recommends using dry powdered sulphur, rubbed lightly over the surface after bathing, once in two or three days changing the under garments and bed linen each time, also having the sulphur sprinkled between the sheets. This method is of distinct value in many cases, is clean and requires one or two weeks to eradicate the disease. One or the other of these three simple formulæ will accomplish the result in all cases. The dermatitis arising from the sulphur in ointment form will soon clear up on suspension of the drug, and using in its place a simple dusting powder, such as the compound stearate of zinc.

Pruritus Essentialis.—The treatment of any case of pruritus is simple if the etiology is clear. In many cases this can not be absolutely determined, and then recourse to some of the general rules laid down must be resorted to. There are some general principles of treatment, both as to internal and local management, which are of great value, both in mitigating and completely relieving the disease. As a rule constitutional

8. Sherwell: Jour. Cutan. Dis., 1899, p. 494

treatment is unsatisfactory unless especially directed to some discoverable etiologic factor, such as diabetes, rheumatism, or the various other hepatic and renal diseases concerned in its production. Among other constitutional remedies should be mentioned cannabis Indica, gelsemium, pilocarpin, belladonna, quinin, the salicylates, (acetyl-salicylic acid) phenacetin, antipyrin, chloral, sulphonal, arsenic, and chlorid of calcium, as recommended by Savill.[9] Local remedial agents are very important, and if properly selected and applied are of great value. The best of these are carbolic acid in oil or lotion; thymol, or menthol, 1 to 4 per cent. in an ointment; resorcin, ½ to 2 per cent. in lotion; camphor in an ointment or dusting powder; chloral in an ointment or lotion and the tars; also hot water, electricity and radiotherapy. These local remedies may be used in the following combinations:

R.	Acidi carbol	3i-iii	3-12
	Aquæ calcis		
	Olei olivæ, āā	℥viii	240
Or:			
R.	Acidi carbol	℥ss-iss	2-6
	Pulv. amyl	℥ii	8
	Pulv. zinc. oxid	℥iii	12
	Aquæ calcis	℥iv	120
	Aquæ rosæ q. s. ad	℥xvi	480
Or:			
R.	Thymol vel menthol	gr. v-xxi	0.33-1.33
	Adipis lanæ		
	Unguenti petrolati, āā	℥ss	15
Or:			
R.	Resorcin	gr. xv-3i	1-5
	Glycerini	3iss	6
	Spts. vin. rect. q. s. ad	℥viii	240
Or:			
R.	Camphor or chlorali	℥ss-i	2-4
	Unguenti petrolat	℥i	30
Or, Anderson's dusting powder:			
R.	Pulv. camphor	℥iss	6
	Pulv. amyl	℥viii	32
	Pulv. zinc. oxid	℥iv	16
Or, Wilkinson's salve:			
R.	Olei rusci (birch tar)	℥ii	8
	Sulphuris sublimat	℥ii	8
	Cretæ preparatæ	gr. liii	3.5
	Saponis viridi		
	Adipis, āā	℥ss	15

In all cases, free elimination should be encouraged by salines and other laxatives, with abundant water drinking and perhaps other diuretics. Cotton, linen, or silk should be worn next to the skin. The diet should be simple and non-irritating, and, as a rule, tobacco and alcohol should be interdicted.

In the generalized variety known as senile pruritus, a large number of the measures may have to be resorted to, for the reason that these cases are often intractable and may be absolutely incurable. In a private communication Dr. F. H. Montgomery recommends in these cases general massage once or twice weekly with a bland oil or lanolin to promote general nutrition, the rubbing being done in the direction of the return venous flow. Other cases of generalized pruritus are amenable to treatment by making sufficient search for and removal of the cause, combined with the measures outlined above. The following case illustrates the necessity of careful search in these cases for an exciting cause:

The patient, a man aged 48 years, had been the subject of general pruritus for several months, and recently was so tormented with the intolerable itching that his general health was impaired and his nervous system was becoming wrecked. An examination of his urine, together with the several internal organs, revealed nothing abnormal. He had used various measures without relief. In his sleep, or when partially asleep, he would tear his skin until the blood would flow freely.

Radiotherapy was recommended, and during the treatment it was found that the patient had suffered with anal pruritus for several years. This was immediately given thorough attention, with the result that in two weeks this condition was relieved, and with it all the generalized pruritus without special treatment, the case evidently being a reflex sympathetic general pruritus caused by the local condition.

The importance of having means at our disposal to combat the local varieties of pruritus, especially anal and vulvar, can be attested by any one who has had charge of a severe case. They are often chronic, and have had almost every known antipruritic used, with only temporary relief; and the point here of greatest importance is the skill with which we use the means at our command. Many cases can be relieved completely by using thoroughly the same remedial agents that were used before and failed. Some of the very best of these agents become discredited because the patient either used them improperly or insufficiently. It is not sufficient to examine the patient and write a prescription for an ointment, and say: "Get it compounded and apply it twice daily." With such directions, the chances are that the ointment will be in apposition with the affected parts a few moments only, instead of hours, as intended.

An outline for the treatment of a case of anal pruritus, for example, might be as follows: The case is severe, with no discoverable general etiologic factor. Locally, there will be evidence of traumatic dermatitis. Before retiring at night the patient is instructed to bathe the part with hot oatmeal water, as hot as can be borne, for from fifteen to thirty minutes. The part is then dried thoroughly and the dressings are thoroughly saturated with a lotion containing equal parts of oleum olivæ and liquor calcis, to which 1 per cent. of carbolic acid has been added. These dressings are placed with care so as to cover the whole area, and are held in place over night with a T bandage. In the morning the parts are cleansed with more of the same oil, and then for the day a strip of surgeon's absorbent cotton, thoroughly covered with dusting powder, such as stearate of zinc, is inserted between the nates. This may be applied fresh, if for any reason it becomes displaced. This procedure is intended to keep the skin surfaces apart. After a few days of this treatment, an ointment containing a small amount of tar may be substituted for the oil at night, continuing the powder during the daytime. A convenient and safe procedure is to give the patient two ointments—one, such as Wilkinson's salve, containing tar, the other a comparatively neutral one—instructing him to mix one part of the tarry, one with ten parts of the other the first night and apply it on a linen cloth, being sure to have the ointment cover the affected area thoroughly, and keeping it in place with the T bandage as before. Each evening more of the tar may be added until the desired result is accomplished. The patient is cautioned that, should irritation from the ointment arise, he is to reduce the amount of tar or suspend it entirely for a time. After a time, all evidence of the disease having disappeared, active treatment may be suspended; but strict cleanliness, with use of the powder, should be kept up for a long period. The remedial agents of especial value in anal pruritus are carbolic acid, menthol, hot water, the tars, and at times cocain, the latter with caution. Fissures about the

9. Savill, Thos. D.: "Pathology of Itching, and Its Treatment by Large Doses of Calcium Chloride, with Illustrative Cases," London Lancet, August, 1896.

anus may be penciled with silver nitrate or treated with bichlorid, or by means of the actual cautery.

Some surgeons believe most cases are due to fissure, and that these fissures may be well within the rectum, and hence require search for their location. It is true that they play a part in the production of this disorder, and should always either be excluded or eradicated. Fistulæ, hemorrhoids, etc., should be given their appropriate treatment, as should also the tags often seen in these cases, especially after various operations for hemorrhoids, etc. If after these various methods have been carefully used recurrences continue, radiotherapy will be of greatest value. During the past five years it has given me most happy results in cases that apparently resisted all other means of treatment.

In vulvar pruritus, the plan of treatment is similar to that outlined above. Here hot water, carbolic acid in ½ to 2 per cent. solutions, dilute hydrocyanic acid in 1 to 2 per cent. lotions, are of great value. The dressing must extend up a short distance into the vagina and be kept thoroughly in place by means of the T bandage. The cause of any leucorrhea must be sought and removed, as well as other etiologic factors. Bichlorid of mercury in solution is often of value also; and, finally, radiotherapy may be resorted to if necessary. Whichever method is employed, minute detailed instructions should be given and carried out. In severe cases, rest in bed for two weeks, with restricted diet and with the treatment detailed above, accomplishes more than can be done in a very much longer time with the patient up and about. Scrotal and perineal pruritus may be managed similarly to the above.

Treatment of Pruritus Hiemalis:—As these cases are due entirely to lowered temperature, it is essential to overcome the change, so far as possible, by appropriate clothing. Cotton should be worn next to the skin, but extra clothing can be worn over this. Corlett advises resorcin as a local application, and believes internal treatment is of no value. Menthol and carbolic acid are the two chief local antipruritics employed. Bronson advises bandaging the limbs and smearing them with a 5 per cent. salol superfatted soap. Warm weather is always curative.

THE TREATMENT OF LOBAR PNEUMONIA.

E. RUSSELL ZEMP, B.S., M.D.

Professor of Materia Medica and Therapeutics, Diseases of Children, and Clinical Medicine, Tennessee Medical College.

KNOXVILLE, TENN.

Pneumonia is a self-limited disease and runs its course uninfluenced in any way by medicine. It can neither be aborted nor cut short by any known means at our command. Even under the most unfavorable circumstances it will terminate abruptly and naturally without a dose of medicine having been administered. So also under the favoring circumstances of good nursing and careful diet the experience of many physicians in different lands has shown that pneumonia runs its course in a definite time, aborting sometimes spontaneously on the third or fifth day, or continuing until the tenth or twelfth. We have then no specific treatment for pneumonia. The practitioner may bear in mind that the patient is more often damaged than helped by the promiscuous drugging which is still only too prevalent. In cases of moderate severity a purely expectant plan may be followed—keeping the bowels open, regulating the diet and, if necessary, giving a Dover powder at night to procure sleep. In severer cases a symptomatic plan of treatment should be pursued, meeting the indications as they arise (Osler).

In spite of the above clear-cut statement by one of the greatest physicians of modern times many physicians continue to drug their patients in this disease to their detriment and this can be proven by glancing over the medical journals for the last few years. In them will be found almost every combination of drugs recommended as a specific for this trouble. This fact alone proves that we know of no drug that is curative of pneumonia.

While no drug is curative, strictly speaking, we possess the means of saving many patients who would certainly die if left alone to Nature. As Dr. Hare says: "In this disease the doctor should be a watchman all the time and only a therapeutist when necessity arises." Pneumonia is a condition which demands that the physician have a thorough knowledge of the possibilities of medication, but at the same time he must keep clearly in mind the pathology of the condition and the physiological actions of his remedies. A drug which apparently may be indicated on account of one of its actions, may produce a death blow by another effect. Here ignorance is criminal, for while cooling the fevered patient's brow it stabs him in the heart, or vasomotor system. The number of patients who die annually from too much drugging can never be estimated.

GENERAL MANAGEMENT.

A patient suffering from pneumonia should be put to bed and kept strictly in the recumbent posture until several days after the crisis. He should be clothed in a light flannel gown and the bed-pan should be used. Food should be administered in such a way that the patient will not have to sit up to take his nourishment. The sick room should be bright and airy, with plenty of sunshine and fresh air. It should be well ventilated. There will be no danger of the patient taking "cold," as the high temperature prevents this. The patient should be isolated, both to prevent infection of others and because he needs mental, as well as physical, rest. Baruch says: "Plenty of oxygen, in the way of fresh air, early in the disease will do away with the necessity of administering oxygen later." He also suggests administering about four ounces of cold water frequently. This has an excellent effect on the heart, kidneys, skin and nervous system.

As a routine procedure it is well to administer from 5 to 10 gr. calomel, to be followed by a saline if a good, large action of the bowels is not produced by the mercurial.

The diet should consist principally of milk, broths and egg-water, liquid-beef preparations being added to suit the case. As this disease is a depressing one, the diet should be of the most nutritious sort and easily digested. Over-feeding should be avoided as much as under-feeding, for a distended stomach, or bowel, may easily interfere with an already over-taxed heart. Good feeding, absolute rest during the waking hours, a proper amount of sleep, and keeping the bowels open, are generally the points on which success or failure depends. To summarize: Put the patient to bed in a well-lighted and well-ventilated room. Keep him at rest, both mentally and physically. Give plenty of cold water at brief stated intervals. Feed him light, but nutritious diet, and keep his bowels open. This is all the treatment that a large number of patients really need. Its simplicity should appeal to all who realize that pneumonia is a self-limited disease. Those who are in the habit of drugging their patients should try it. I am sure they will find that they have been attributing a power to certain drugs that these do not possess.

SYMPTOMATIC TREATMENT.

Probably the first symptom that attracts our therapeutic attention is pain. This is often sharp and severe. It is best relieved by a hypodermatic injection of morphin ⅛ gr. Frequently a brisk counterirritation applied over the seat of pain gives relief. Strapping the chest with adhesive plaster not only relieves pain but puts the part at rest. I have found that the local application of a mixture containing methyl, salicylate, iodin and camphor liniments, acts well and perhaps, has some good influence over the disease.[1] The prescription I use is as follows:

R. Iodini (crystals)	gr. viii	50
Methyl salicylatis	ʒss	15 00
Liniminti camphoræ, q. s.	ʒii	60 00

M. Sig.: Apply over chest three times daily. Cover with oiled silk.

I do not countenance the use of poultices. They can not possibly do any good except in relieving pain, and may do a great deal of harm.

Fever.—Unless the temperature rises above 104 F. it should be left severely alone. This rise is not only without danger, but is actually beneficial; it is Nature's effort to control the disease. There is nothing more pernicious than the constant attacking of a pneumonic temperature with coal-tar derivatives or arterial sedatives. Dr. Douglas Powell has demonstrated that pneumococci grow to perfection at the normal temperature of the body, but not at all at a temperature of 104. Besides, fever produces leucocytosis and, as is well known, cases without an increase in leucocytes are almost always fatal. So that the patient's general condition and not the temperature alone must be the guide in the use of antipyretic measures.

Some patients bear a much lower temperature than 104 very badly. In these cases antipyretic drugs should be used, if at all, for their effect on the nervous system alone. The application of cold is the best means of reducing temperature. Large ice-bags may be applied to the chest and head, or ice-cold compresses may be applied to the chest, as advocated by Baruch. In some cases, the sponge bath acts well, and some writers boldly declare that the temperature of pneumonia when excessive, should be treated by the cold tub bath. While this latter procedure may be satisfactory in hospital practice, it can not be generally recommended for various and obvious reasons. The occasional use of coal tar remedies in small doses, carefully guarded, is not objectionable. The fever of pneumonia, it must be emphasized, is not a symptom that demands treatment, unless it goes over 104 F., or unless the patient is showing a marked intolerance to a febrile rise. Under no circumstances, should an attempt be made to reduce the temperature to normal. Generally reduction of a degree or two is all that is necessary, and a host of practitioners are having forced on them the fact that hydrotherapy is the best and the safest way to reduce the fever of pneumonia when it demands attention.

Cardiac Failure.—The use of stimulants in pneumonia requires very careful attention. There are many patients who require no stimulation at all. The practice of giving every patient suffering from pneumonia whiskey, digitalis or strychnin, is a therapeutic outrage. There are times when these patients need stimulants, but the drug to be used and the time to use it should be selected with care. "If the pulse goes over 120, if the first sound becomes weak, if the pulmonary second sound loses its accentuation, or if marked nervous symptoms appear, then a stimulant is indicated." (Anders).

Alcohol is not only a stimulant but a food, as well. It increases the force of the heart by directly stimulating it (Wood), removes, to a certain extent, the peripheral resistance and hastens the movement of the blood current. In other words, it restores a disturbed equilibrium and overcomes passive congestions. There is evidence that seems to prove that alcohol increases the bacteriolytic power of the blood, so that, although a great deal of experimental evidence has arisen within the past few years proving that alcohol is not a stimulant to the circulation inasmuch as it does not raise arterial pressure, we use it in pneumonia because clinically it has been proved to be of great value when it is given at the proper time and in a proper manner. Dr. Wood says that when the odor of alcohol can be detected on the breath of the patient, too much is being given. In the general improvement of symptoms we have, however, a faithful index as to how much to give. On the other hand, if the patient becomes more nervous, the circulation more "irritable," the tongue and skin dry and parched and the entire picture becomes manifestly worse, it is certain that too much alcohol is being given. The human body is capable of consuming only a very limited amount of alcohol. In febrile conditions this amount is considerably increased. In amounts easily assimilated alcohol is a food and imparts force. If more than can be assimilated be given the food becomes a poison.

Ramberg and Santvoored have proved that the pneumococci paralyze the vasomotor centers, besides weakening the heart. Hence, much of the circulatory disturbance must be attributed to paralysis of the vasomotor system as well as to a weakened heart. All measures, therefore, which increase the work of the heart, or in any way interfere with its function should be carefully avoided. According to Dr. Powell, the heart dangers are three in number; impaired nerve power, impaired nutrition and mechanical dilatation. To overcome these, nothing is so satisfactory as digitalis. This drug stimulates the pneumogastric, slows the heart's action, strengthens its beat and tightens up the vasomotor system. Under its influence the heart empties itself more completely; is supplied with better blood and does its work in a quiet, steady manner. Digitalis should not be given until it is clearly indicated. A weak, fast, empty pulse calls for its administration, especially if irregularity in the heart's rhythm is present. It is best given in the form of a standardized fluid extract, two minims of which may be given hypodermically at intervals of from four to eight hours. It must be remembered that this drug manifests its effect slowly but that the effect lasts for a long time, hence the doses should not be given too close together or one may get an overlapping of them. It is well to bear in mind that high temperatures prevent the action of this drug, and to remember that it takes several hours to manifest its full effect; it can not be relied on in emergencies, such as heart failure following the crisis.

Perhaps the most universally used drug in pneumonia is strychnin. Here we have another illustration of the physician using a drug without a clear and perfect understanding of what he is trying to accomplish. Dr. Hare says: "Strychnin is a drug that goads the system to increased endeavor and does not aid it simultaneously. It is the crack of the whip that keeps the team from being mired. Would any sensible driver whip his horses all day and then whip them all the more when they are stalled?"

1. When the druggist mixes this, a little iodin will be left in the mortar, but this amount is prescribed to insure a saturated solution.

Strychnin is a drug to be used at the crucial moment when it is necessary for the system to make one grand effort to pull itself out of a desperate situation. It is not a drug to be used continuously, although its use may extend over several days. The constant use of this drug keeps the nervous system on a "wire edge" and will undoubtedly result in more harm than good. Strychnin should be reserved for the crowded hour, when a sharp, quick attack upon the impending depression, by administration of a twentieth, or a fifteenth of a grain hypodermically, will call forth the patient's best effort to recover, and in many cases he will succeed. Another drug of great value for its effect on the vasomotor system is belladonna. This drug also should only be used when symptoms of arterial depression appear. It is of immense value just following the crisis when the patient's skin is cold, pale and clammy. Its use is indicated especially in the later stages of the disease, and also whenever the blood paths show signs of relaxation. This condition sometimes appears quite early. In no other way can belladonna be of service in pneumonia. The mistake should be avoided of giving this drug early in the disease with the idea of relaxing the blood vessels and thus aiding the inflamed lung. Belladonna never lowers arterial pressure, unless it is given in toxic doses. Then it paralyzes the vasomotor centers. Caffein and camphor are reliable heart stimulants and are sometimes useful. The former may be given in the form of one of its salts or as strong black coffee. The latter is best administered hypodermically in the form of camphorated oil. Adrenalin chlorid is a powerful vasomotor stimulant and acts directly on the heart as well. It may be given in from 15 to 30 minim doses hypodermically.

The use of diffusible stimulants as recommended by Elsner, is a very valuable procedure but I believe that Elsner's doses are too frequent. It is not necessary to give these stimulants every fifteen minutes day and night, as advised by him. With the disturbed circulation, and the condition of the patient's mucous membranes, it is hardly possible that any dose of medicine of sufficient size to be felt, will have spent itself in fifteen minutes. Every one or two hours is often enough, if necessary, the dose may be increased. There are few patients who would not be markedly disturbed by having to take a dose of medicine every fifteen minutes, and when we are vainly trying to get a patient to sleep it would seem but folly immediately to wake him up again as soon as we accomplished our purpose.

Diffusible stimulants are best given in the form of a mixture composed of equal parts of Hoffman's anodyn, aromatic spirits of ammonia, spirits of lavender and brandy. A teaspoonful of this may be given as above stated well diluted with ice water. This can be kept up as long as indicated.

An injection of decinormal salt solution under the skin is of great benefit in all cases of pneumonia. Not only does it strengthen the heart and tone up the vasomotor system but it also dilutes the toxins, starts up all the secretions and prevents heart clot. Its effect on the skin and kidneys is especially marked. With ordinary precautions it can produce no harm. It is not necessary to have an elaborate apparatus. A large syringe, such as an otologist uses for washing out the ears, will answer all purposes. A large needle can be attached to this syringe by means of a small rubber tube and the injection made just as if giving a hypodermic. From 8 to 16 ounces may be given at once and the injection repeated from time to time.

I shall speak of the use of nitroglycerin only to condemn it. It produces all harm and no good. It can not be regarded in any sense as a heart stimulant, but it does most certainly paralyze the pneumogastric and the respiratory and vasomotor systems. It also destroys the oxygen carrying properties of the blood. No one who clearly understands the physiologic action of this drug can be excused for killing a patient with pneumonia by its use. I am fully aware of the fact that some writers advocate its use late in the disease when the right heart is vainly struggling to empty itself. This drug will empty the heart certainly, but unfortunately it will liberate the soul at the same time. It is said to be indicated in cases associated with arterial sclerosis but it is in such cases that it is most likely to kill and least likely to produce the desired result. I notice that most writers advocate giving this drug at intervals of from three to six hours, and as the effect of nitroglycerin probably does not last over thirty minutes, I am constrained to attribute their success from its use, in a measure at least, to the goodness of God.

If the right heart must be relieved it is best done by bleeding, but Osler says out of twelve patients treated in this way eleven died. The collapse following the crisis, when severe, is best met by a hypodermic of strychnin 1-15 gr., atropin, 1-120 gr., and standardized fluid of digitalis 2 minims, repeated pro re nata. The patient's body temperature should be kept up with blankets and hot water bottles.

Cyanosis.—Beginning cyanosis calls for respiratory stimulants, the best of which is strychnin. Atropin is not so good a respiratory stimulant as was once believed, and as poisoning is easily produced it must not be used carelessly. Caffein as a respiratory stimulant has been highly overrated. Its power lies more in its awakening effect than in any stimulation of the respiratory centers. The inhalation of oxygen is a doubtful procedure, so far as producing any effect on the disease goes. It gives temporary relief sometimes, but as Manges says: "The fact that the dyspnea is markedly relieved immediately after the crisis, while the lung is just as much consolidated as it was before the crisis proves that cyanosis and dyspnea are not altogether due to mechanical causes, but are largely due to the pneumococci infection." In tiding the patient over sudden attacks of cyanosis and dyspnea oxygen is most useful.

Nervous Symptoms.—These consist chiefly of headache, restlessness, delirium, insomnia and hiccough. Generally they can be successfully combated by hydrotherapy. When necessary a small dose of morphin, hypodermically, will help to quiet delirium and to produce sleep. Hyoscin hydrobromate is also a useful drug at times. Hiccough when prolonged may cause exhaustion. It can usually be checked by a small dose of morphin and atropin. It is best in all these conditions to give small doses of the medicines recommended and to repeat the dose until the desired effect is produced. Marked nervous symptoms call for alcoholic stimulation.

Cough.—The cough in pneumonia is not generally distressing enough to require any treatment, but when it does call for attention a small dose of morphin hypodermically, or heroin in 1/24 gr. doses by the mouth will relieve.

Vomiting.—This is sometimes distressing. Feeding by the rectum for a day will nearly always stop it. When an initial dose of calomel has been given, vomiting is rarely severe. Cracked ice sometimes acts well when everything else fails. Continued and severe vomiting calls for stomach washing. It is very important to remember that with some patients opium in any form

causes nausea and vomiting. It is useless to try to remedy this condition in these patients while continuing to give this drug. Counter irritation over the stomach is a simple but useful procedure.

This covers the symptomatic treatment of lobar pneumonia. In the treatment of this disease, I have not mentioned venesection and arterial sedatives because their field of application is so limited as to make it a rare chance for the physician to use either to the betterment of his patient. Certainly the average patient when seen by the physician has passed the time for venesection, or arterial sedation. I will admit that there is a pre-pneumonic stage in which these measures will prevent the patient from contracting pneumonia. This is in no sense of the word an abortion, for how can any condition be aborted when it does not exist? The cases that are suited to these measures are found in strong robust persons. If the pulmonary congestion is not relieved in twelve hours, and the symptoms of pneumonia supervene, all depressing measures should be discontinued and an expectant, stimulating plan adopted.

SPECIFIC TREATMENT.

Various drugs have been advocated as specifics in pneumonia, but all of them have had an early death. Chief among these are digitalis, as advocated by Petresco, who recommends the giving of 180 grains a day and claims a mortality of a little over 2 per cent. This treatment has not met with favor. Salicylic acid has been highly lauded, but has failed to establish the claims made for it. This is not surprising when we remember that this drug depresses the heart and irritates the kidneys and digestive tract. Of late creosote carbonate has been claimed as a curative agent in this disease. It certainly benefits the accompanying bronchitis and seems to modify the infection, but after a careful trial in the Pennsylvania Hospital by Drs. Scott and Montgomery, the most that they can say for it is that experiments with it should continue with increased dosage. Iodid of potassium has very lately appeared on the field. It is said to be a specific in doses ranging from 1,500 to 3,000 grains daily. Any one who can believe this should try it. The internal administration of antiseptics has been tried with poor success. Sepine has obtained good results by injecting very dilute solutions of mercuric chlorid directly into the inflamed lung. Antipneumococci serum has disappointed the profession at large, as Dr. Welsh has shown that the antitoxin is not only absent from the blood at the time of and after the crisis, but that the toxin is actually stronger then than at any other time. So we are forced to believe Dr. Osler when he says that we have no specific for pneumonia.

Perhaps the nearest approach to a specific treatment of pneumonia is the hypodermic injection of quinin. This treatment receives the endorsement of no less an authority than Nothnagel. Muriate quinin 7½ grs. are dissolved in ½ ounce of sterile water. This is injected once daily into the lateral parts of the abdomen, where the cellular tissue is loose. Generally two or three injections suffice. The effect on the temperature is less than that on the general condition. It gives one the impression that the subcutaneous administration of quinin lessens the effect of the products of the bacteria which have found their way into the blood current. This treatment is worthy of a very careful trial.

Pneumonia is an infectious disease, and as such every precaution should be taken to prevent its spread. Not long ago a small house epidemic of this disease was reported from the Episcopal Hospital of Philadelphia. The sputum should be cared for, all bed clothing sterilized, and the patient isolated. After the patient is discharged the room should be disinfected. There is no reason why pneumonia should not be included in the diseases that are to be reported to the board of health.

DYSPEPSIA IN ELDERLY INDIVIDUALS.*

JAMES S. McLESTER, A.B., M.D.
Visiting Physician to the Hillman Hospital.
BIRMINGHAM, ALA.

A large number—I had almost said the largest number—of our errors are those of omission. It is of a very common error of omission that I wish to speak.

Optimism is ordinarily a virtue, but when carried too far it becomes failing. It is characteristic of most of us in the consideration of the various possibilities surrounding the complaining individual who consults us that we give first thought to the minor ailments which he may have and in a falsely optimistic manner leave from our consideration all thought of the graver diseases. Reflection will, I am sure, convince any one of the fallacy of this mental attitude; for where there are conditions making possible any of several disorders certainly we should endeavor, first of all, to exclude by all the means of our power the most serious of these, and then take into consideration the least serious.

In passing, I might suggest that were pulmonary tuberculosis the first instead of the last possibility considered in the case of every youthful individual with a cough and a record of lost weight, the mortality from this disease would be lessened. We can best serve the patient in such doubtful cases not by holding tuberculosis a dreadful thought to be put behind us and not to be mentioned, but, on the other hand, by tactfully but plainly making such provisional diagnosis as will give him opportunity to take those steps which would in its incipiency lead to the healing of a tuberculous process.

Somewhat similar, and this is the error alluded to above, is our mental attitude toward the elderly patient who for the first time suffers from indigestion, or who late in life begins to have acute exacerbations of an old but previously mild dyspepsia. Such a patient may have cirrhosis of the liver—he may have chronic interstitial nephritis—but he may also have, and to this possibility I ask your especial attention, cancer of the stomach.

Exactly why cancer of the stomach is a probability in these cases it is difficult to say; but experience teaches us that such is the case. Ordinary indigestion is almost always due to some faulty habit of diet, the quality or quantity of the food or else the manner of taking it is wrong. Such habits are acquired in youth or early adult life, and the resulting dyspepsia quickly follows. The person who has passed through the toils and stress of early adult life and has by hygienic living preserved his digestion will not late in life change these good habits. Advancing age carries with it many notable diseases and disorders of function, but disorders of digestion *per se* are not among them; so that the individual who has reached advanced or middle age without experiencing the discomforts of dyspepsia is not likely to do so unless some remote disease to which his age renders him liable becomes responsible.

These cases of dyspepsia in elderly individuals are naturally first seen by the family physician and on him

* Read before the Medical Association of the State of Alabama, April 18, 1906.

lies the burden of omitting nothing in his consideration of the various possibilities. In hospital and consultation practice we do not usually see them until the condition has lasted some time and considerable progress of the disease has rendered cancer of the stomach a probability even to the casual observer. Then little can be done for the sufferer, although much might have been done a few months earlier.

As has been very aptly suggested, we have been educated up to the point of thinking immediately of cancer of the uterus when a woman who has passed a menopause bleeds from that organ; so why not give to the stomach the same consideration when, previously healthy, it begins in old age to show signs of disease.

Examples are common and I mention the following merely by way of illustration:

CASE 1 (Hosp. No. 7463).—M. H., laborer, age 43. Symptoms of dyspepsia, bad taste in the mouth, discomfort after eating, anorexia and belching first appeared seven months before admission to the hospital. He had been during this time treated by his family physician for dyspepsia. Diagnosis of cancer of the stomach was made soon after admission and he was operated on. On opening the abdomen it was seen that, in addition to the primary growth at the pylorus, metastatic carcinomata were present in the liver and the pancreas. Death occurred a short time later.

CASE 2 (Hosp. No. 8978).—A. B., boiler fireman, age 44. Patient was admitted complaining of "much trouble with the stomach." He had suffered with dyspepsia for past ten months, for which he had been treated. Physical examination revealed a tumor in the left hypochondrium and gastric analysis showed it to be a carcinoma. Operation revealed carcinoma of the pylorus. The patient left the hospital a little more comfortable than on admission, and nothing more was heard from him, but I think it safe to assume that the course of the disease was not interrupted at the late stage in which this operation was undertaken.

CASE 3.—Another case, in a man of 50 years, which made a profound impression on me, but of which, unfortunately, I have no clinical record, came under my care as an ordinary case of dyspepsia. He complained of discomfort after eating, anorexia, belching and occasional vomiting of a year's standing, for which he had been under constant treatment. I remember this man's statement, in answer to my question, that no physical examination of him had ever been made nor any attempt at determining the functionating capacity of his stomach. His clothing being removed, a tumor in the left hypochondrium was very evident, and closer examination convinced me that it was of the pylorus. Gastric analysis confirmed the diagnosis of cancer. The patient would not consider an operation, and feeling it to be hopeless, I could not urge it.

I selected these three cases for reporting because each was hopeless when it came under my care and because much could have been done for each of them had cancer of the stomach been suspected and looked for when the group of symptoms called dyspepsia first appeared.

It is not the function of this communication to discuss the means of diagnosticating cancer of the stomach, which may, with the exception of a few suggestions in the recent literature, be found in any of the text-books on that subject. While there is no truly pathognomonic sign, there are conditions to be observed from an examination of the stomach contents and otherwise which, taken together, at least approach certainty in their significance. And where there is a reasonable doubt, I believe, in view of the skill attained to-day by our colleagues in surgery, that an exploratory incision is a perfectly legitimate means of diagnosis.

It seems hardly necessary to dwell on the advantages of an early diagnosis in cancer of the stomach. Many surgeons, like Czerny and Rindfleich, state that when a recognizable tumor has appeared or marked cachexia is present, operative measures can not accomplish anything. Yet we are agreed, and I speak as an internist, that in the earlier stages of this disease surgery can do much for the patient by increasing his comfort and prolonging life. Therefore, you can understand why I make the plea, and make it before this association of practitioners, that every middle-aged or elderly individual who for the first time has dyspepsia be studied most carefully to determine whether cancer of the stomach be present.

FIVE CASES OF MECKEL'S DIVERTICULUM.*

O. M. GILBERT, M.D.
Associate in Clinical Medicine in the Medical Department of the University of Colorado.
BOULDER, COLO.

In order that we may call to mind the nature of a Meckel's diverticulum, it will be necessary to recall briefly the method of development of the alimentary canal.

When the three blastodermic layers have formed a longitudinal axis and the mesoderm has partially segmented to form the celom or the body cavity, the infolding process begins from all directions, but as the embryo is by this time much elongated, approximation takes place laterly much sooner than from above and below, i. e., from headward and tailward.

Also the splanchnopleuric or inner layer approximates much more rapidly than the somatopleuric or outer layer. As a consequence of the almost complete approximation of the inner layer, the incomplete alimentary canal is formed and a narrowly constricted communication remains between it and the general vitellin cavity from which the embryo draws its nourishment until the allantois is formed. Then the vitellin cavity begins to diminish relatively very rapidly and as the outer layers close in, forming the body wall, it is again constricted at the umbilicus and divided into an extra-abdominal portion or vitellin sac proper and an intra-abdominal portion or vitellin stalk or duct, extending from the intestine to the umbilicus.

After the complete formation of the allantois, all that remains of the sac is an almost unrecognizable vestige which afterward forms a part of the umbilical cord. The duct, the intra-embryonic portion, also begins to atrophy and soon after the formation of the placenta should entirely disappear.

This disappearance, however, does not always take place and the duct may persist throughout life as a more or less patulous tube, known as Meckel's diverticulum. This is generally attached at the greatest convexity of the umbilical loop of the embryonic intestine which represents a point in the adult about three or four feet above the ileocecal junction, but may be attached anywhere from the duodenum to the cecum, or even to the rectum.

It is generally from one to four inches in length and often ends in a more or less pouched extremity, though not uncommonly it terminates in a fibrous cord several inches in length.

It is generally attached nearly opposite the mesentery and may have a mesentery of its own.

In size, it may be a mere fibrous cord throughout or as large as the intestine from which it springs, and it contains all the intestinal coats.

It is said to occur in from 1 to 2 per cent. of all individuals.

* Read before the Boulder County Medical Society, 1900

This small series of five cases has been met with in ess than one hundred autopsies. In two cases it was the ause of death, but in the other three it gave no symp- om whatever of trouble.

They were all discovered at autopsy and were wholly nsuspected during life except in one case as a possi- ility.

Halstead estimates that it is the cause of 6 per cent. f all cases of intestinal obstruction and Fitz classes it s more dangerous to its possessor than a veriform ap- endix.

Its most common method of causing difficulty is by and; i. e., the fibrous cord which often extends from its ip, becomes attached by some inflammatory process, or otherwise to some point on the abdominal wall, the in- estine or mesentery, creating a band behind which a loop of the intestine become incarcerated. Fitz has proved by his demonstration of the presence of the remains of the omphalomesenteric vessels that this is not ordi- narily an inflammatory or accidental attachment, but s a remnant of the original connection with the um- bilical opening.

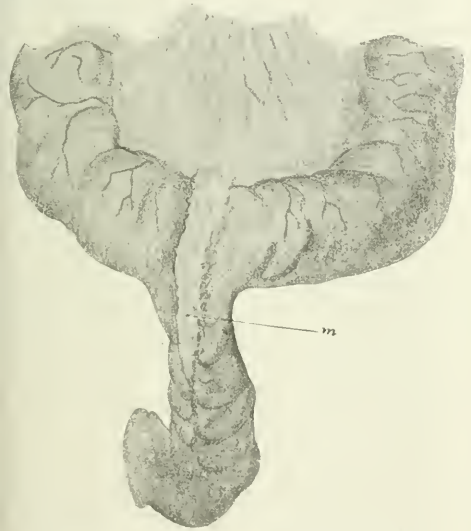


Illustration of mesentery of the diverticulum in Case 4.

Other methods of causing trouble, probably in order named, are: volvulus, intussusception, diverticulitis, hernia—umbilical, inguinal, or internal—and perfora- tion by various ulcerative processes.

Dr. Miles F. Porter, Ft. Wayne, Ind., to whom I am indebted for much data, has recently collected from the literature 149 cases and reported 35 more from other sources, from which he gives a very admirable sum- mary of the conditions in all its phases.

He concludes that the enormously high death rate is due to non-operative interference or late operations and urges early operations in all cases of intestinal ob- struction.

My cases were as follows:

Case 1. Mrs. H., aged 40, two or three children, general health good, except for a number of attacks of intestinal colic of great severity, but of short duration.

History.—She was seen first on April 1, 1901, in an attack which had lasted about twelve hours. Pulse was 156 and weak; the abdomen was somewhat distended and imprint of coils of intestine could plainly be seen through the walls; there was some vomiting of fecal matter, with practically all symptoms of intestinal obstruction. The patient grew rapidly worse and died next day—thirty-six hours from beginning of attack—without operation.

Autopsy.—On opening the peritoneal cavity, a mass of shiny, ebony-black, distended intestine protruded itself. This mass proved to be a loop of the ileum about 3 feet in length and sprang from near its middle. It was found to be firmly constricted at its base by a Meckel's diverticulum which arose from the ileum 3 or 4 feet from the ileocecal junction. It had a mesentery which had tended to draw it upward and to the right where it had fallen into a hole in the mesentery of the ileum, else had made one for its passage.

This increased the tension on its mesentery and it continued the curling process until it entirely encircled the loop of intestine mentioned and again passed through the hole in the mesentery, thereby making one and one-half circuits. It was dislodged with difficulty, and only after enlarging the opening in the mesentery, and was found to be about four and one-half inches in length. The extremity was slightly expanded and there was no fibrous continuation.

Judging from the suddenness of the grave symptoms, the amount of the shock and the appearance of the strangulated bowel, the strangulation must have been sudden, giving insufficient time for much peritonitis to be established in the constricted portion of the bowel, yet there must previously have been some interference with the intestine, from traction or otherwise, causing the colicky symptoms. I can find no other case in the literature like this unless it be Taylor's case, reported by Porter, in which he says: "The diverticulum wound round the gut through a hole in the mesentery."

Case 2. Male, aged about 50. In course of routine autopsy, Meckel's diverticulum about 2 inches long and about two-thirds the diameter of the ileum from which it sprang and with a free and somewhat pointed extremity was found. There was no attachment of its free extremity and no evidence of there ever having been any trouble from it.

Case 3. Male, aged 40. This case was the same as Case 2, except that the diverticulum was about 3 inches in length and was slightly clubbed at its extremity. There was no mesentery in either of these cases.

Case 4. R. M., male, aged 22, single, laborer, was brought down from a mining town with a history of intestinal obstruction of forty-eight hours' duration with abrupt onset. There was then general peritonitis, and the patient died in three hours, without operation. There was history of previous attacks of appendicitis.

Autopsy.—This revealed adhesions from old appendicitis, and behind one of the bands thus formed was a loop of intestine about 6 or 8 inches in length, and hanging from the most dependent portion of it was a Meckel's diverticlum about three and one-half inches in length and ranging from an inch in diameter near its attachment to one and one-fourth inches near its extremity, which was inclined to be bifid. It was entirely filled with a hard fecal mass and it, as well as the incarcerated portion of the ileum, was gangrenous and seemed on the verge of perforation near its extremity.

Case 5. This instance was found in course of routine autopsy on a woman 73 years old and had given no symptoms. It was situated about 3 or 4 feet above the ileocecal junction, seven-eighth of an inch in diameter and was slightly expanded at its extremity. It also had a small diverticulum growing from near its extremity, probably one-half inch in length and half as thick.

SUMMARY.

I found five cases in a little less than one hundred autopsies—being over 5 per cent., whereas they are ordinarily found in from 1 to 2 per cent.—this, of course is merely incidental to the small series. In two of my cases this condition caused death, although in one of them the peritoneal adhesion from the former attacks of appendicitis was also a factor. In both cases which

caused the trouble there was a mesentery of the diverticulum. All the diverticula were between two and one-half and four feet from the ileocecal junction. The manner of causing strangulation in Case 1 was unique.

I believe from this short series of cases, as well as the reports of some of our most careful observers, that diverticulum troubles are more common than are generally supposed and should be borne in mind as one of the not uncommon causes of intestinal obstruction.

A PORTABLE RATION FOR SOLDIERS IN BATTLE AND ON THE MARCH.*

LOUIS L. SEAMAN, M.D., LL.B.
Surgeon and Major U. S. V.
NEW YORK CITY.

So many and so complex are the considerations involved in this question that it can be readily seen no uniform standard can be made applicable to all armies or to all countries. Climate, season, custom, fixed tastes of different nationalities inherited through generations, distance from base of supplies, cost of preparation, are all factors that materially influence the selection of a portable ration and also indicate the impossibility of uniformity. It is, therefore, not my purpose to advocate any single standard ration, but rather to point out the advantages of certain articles of food that may be added to or replace others in already existing standards, as gathered by an experience with different armies in various lands.

An efficient dietary requires that its constituents shall furnish the proximate principles in amounts necessary for the economy, that they shall be easily digested as well as palatable, and that they shall fulfill their requirements with the minimum waste.

Briefly, the nutritive substances in food are the proteids, the carbohydrates and the hydrocarbons or fats. To these are added the mineral salts, water and accessories. The function of the proteids consists principally in the repair of waste, and they also supplement the carbohydrates and hydrocarbons in the generation of heat and energy.

The inorganic salts and water, although not foods, since they neither repair waste nor produce energy, are absolutely necessary to the chemical and metabolic changes which take place in living organisms.

Muscular energy requires for its generation a far more complicated process than mechanical force, just as the human machine is much more complex than the mechanical. In the steam engine the transformation of force from fuel to heat, and heat to power, is rapid and can be measured with mathematical exactness. In the animal machine this is not the case. A complicated process of digestion and assimilation are necessary, and these are often influenced by surrounding conditions which affect the nervous state of the individual and impair the production of energy and the repair of tissue. Nature provides for this by conserving the animal forces and storing them, so they may be available when needed. No more striking example of this conservation of energy in muscle can be found than in the hunting dog, who works from morning till night on his stored muscular power, often covering a hundred miles without a morsel of food until his day's work is done, when he is given a full meal before his rest. During the night his food becomes thoroughly digested, absorbed and stored, so that he is ready next morning to repeat his labor. Feeding during the day impairs his keenness of scent and produces heaviness and desire to rest.

All animals naturally rest after eating. It is by following these dictates of Nature that the most beneficial results are obtained.

A portable military ration for soldiers on the march or in battle requires special elements which are not demanded in the dietary of those in other walks of life. Such a ration must be small in bulk, compact so as to be easily carried by the soldier in sufficient amounts for several days' use; it must be previously prepared or capable of being prepared with facility by the individual soldier, often under the most adverse conditions, and it must be non-irritating and of such character that it will keep under varying conditions of climate and weather.

That these requirements are not easily fulfilled is apparent by the varied rations in use in different armies, and the frequent changes made in them.

For many years the data deduced by Voit as to the amounts of the proximate principles of food necessary to maintain health and to produce heat and energy have been accepted as a standard. He estimated that a man of 154 to 156 pounds, working at moderately hard labor for nine or ten hours per day, required 118 grams proteids, 105 of which shall be absorbable, 56 grams fat and 500 grams carbohydrates, the food values of these principles being equivalent to 3,054 calories.

Chittenden, in an elaborate series of careful investigations, carried on for many months with students, soldiers and athletes, has demonstrated that Voit's estimates were excessive, that less than half the amount of proteids is ample under ordinary conditions and that with this diminution in proteids no increase in carbohydrates is necessary. He also proved that 3,000 calories is in excess of the real needs of the economy; in other words, that the average individual consumes double the amount necessary for the maintenance of health, and that the excess of food frequently acts detrimentally in producing imperfect digestion, fermentation, the creation of toxins and thereby necessitating additional work of elimination, for excess will as surely produce disease as insufficient or improper food.

While these conclusions hold good in the case of the subjects of Chittenden's experiments, a soldier in campaign or in battle undergoes an entirely different process of nervous tension and physical fatigue, wear and tear. Admitting his results, however, the proportions of one part proteids, two-thirds of a part of fat and three and one-sixth parts of carbohydrates, with one-fourth of a part of mineral matter, hitherto taken as a standard, may be changed to advantage. In the hitherto accepted scale of proportions the relation of nitrogen to carbon is as 1 to 15.

The results achieved by the Japanese in the prevention of disease in their army in the recent war with Russia, wherein the death rate from disease was far below that of any other army in history during active warfare, was due to several factors, of which the ration only concerns us at present.

This ration up to February, 1905, was as follows:

Rice	6 go	= 1,020	grams.
Or hard bread	270 momme	= 480	grams.
Fresh meat without bone	40 momme	= 68	grams.
Or fresh meat with bone	50 momme	= 85	grams.
Or dried salt meat	30 momme	= 51	grams.
Pickled plums	15 momme	= 25.5	grams.
Powdered misc.	20 momme	= 34	grams.
Salt	3 momme	= 5.1	grams.
Sugar	3 momme	= 5.1	grams.
Tea	1 momme	= 1.7	grams.
10 go = 100 momme = 170 grams; 1 momme = 1.70 grams.			

* Presented before the Military Section of the International Medical Congress, Lisbon, April 23, 1906.

The nutritive value of this ration is approximately as follows:

Articles.	Protein. gms.	Fats. gms.	Carbohydrates.	Nitrogen. gms.	Carbon. gms.	Fuel Value. Calories.
Rice, 36 oz., 1,020 gms.	81.60	6.12	805.80	13.05	302.97	3604
Fresh meat, 2.4 oz., without bone 68 gms.	12.92	5.71	.....	2.06	2.11	102
Misc. estimated 1.70 oz., as per meal 34 gms.	8.36	.34	21.08	1.33	8.06	120
Sugar, 1.8 oz. 5.1 gms.	....	...	4.84	...	1.79	19
Totals	102.88	12.17	931.72	16.44	314.93	3845

Nitrogen to carbon, 1 to 19.

According to Voit's tables it is markedly deficient in fats, though the fuel value is high. The proteids are likewise below his standard. The carbon in the ration is almost entirely derived from the carbohydrate elements, which can not entirely replace the fat element without detriment to the nutritive process. Yet with this ration the Japanese troops endured all the hardships of a most vigorous campaign. The Russian troops likewise, according to Colonel Havard, U. S. Army, maintained a state of health superior to that of troops at home in the Russian garrisons on a ration which American or English soldiers would reject with scorn. The same observer gives the Russian field ration as follows: Fourteen ounces (396 grams) of fresh meat; two pounds (907 grams) of black rye bread; three or four ounces (85-113 grams) cereals or fruits, and vegetables, tea and sugar when procurable. In emergencies these quantities, especially the meats, were often reduced. This ration has a nutritive value of about 150 grams of proteids and 450 grams of carbohydrates, while its value in calories is 4,180.

Among the Japanese troops there was a noticeable absence of gastrointestinal diseases, and I am firmly convinced that their easily digested, non-irritating and readily assimilated ration was an important factor in eliminating disease of this class. On the other hand they suffered greatly from the scourge of Oriental races, beriberi. Almost one-half of the sickness in the army during the war with Russia was from that disease. The estimate of the number of cases—24.3 per cent. of the entire sick and wounded—shows the enormous total of 84,545. The disease had been practically eliminated from their navy in 1885, and no case occurred among the naval forces during the Russo-Japanese war. This result was accomplished by Baron Takaki, medical director of the navy, through a change in the naval ration, principally by the addition of barley, whereby its nutritive value was increased from 109 grams of proteids, 15.8 grams of fat and 622 grams of carbohydrates to 196 grams of proteids, 43 grams of fat and 775 grams of carbohydrates.

Bread and meat are the essential constituents of all dietaries, and military men generally recognize the importance of making provision for their supply whenever possible. Portable field ovens for baking bread and the furnishing of fresh beef by herds accompanying the army or the preservation of meat by refrigeration and its transportation in the frozen state are now commonly employed in the military service for this end. Vegetables will always be supplied when practicable, as their use is of the greatest importance in the maintenance of the health of troops.

I wish, then, to be distinctly understood that in proposing a portable ration for soldiers on the march or in battle I advocate it only as a field ration, when fresh meat and bread and vegetables can not be supplied; that in no manner is it proposed to replace the ration issued under ordinary military conditions; neither do I wish to be understood as advocating it as a substitute for the numerous varieties of the emergency ration, which is only to be taken under occasions of great stress.

As the proteid constituent of such a ration I desire to call attention to smoked beef. In the process of its preparation the meat is exposed to the slow action of wood smoke. After a preliminary salting and drying the meat is suspended in a closed chamber and saturated with the smoke on alternating days for at least a month. Green hickory and beechwood are the best varieties for this purpose, as they generate more creosote than other woods. As a result of the action of the smoke, the meat becomes impregnated with pyroligneous and acetic acids and creosote. Meat preserved in this manner will keep indefinitely, is easily digested and palatable, and it may be eaten raw or cooked. It does not soon become distasteful, like canned roast beef or corn beef; it is small in bulk, hence there is no transportation of unnutritious material; it is not irritating and is not likely to cause gastrointestinal disturbances. Its nutritive value is high as it contains 26.4 per cent. protein and 6.9 per cent. fat; and owing to the creosote with which it is impregnated it possesses antiseptic qualities, which I consider of great value in a military diet.

For the carbohydrate constituent of the ration I would suggest a mixture of 7 parts rice to 3 parts barley meal. Rice, while deficient in proteids and fat, possesses the quality of being easily digested, its starch granules ranking first among the carbohydrates in this respect. It is procurable everywhere, cheap and economical, in that there is no loss of any of its constituents in the cooking. Barley meal is slightly richer in proteids and nearly four times as rich in fats, and approaches wheat in its nutritive power.

The mixture of these two grains is a very good substitute for bread, and lends itself particularly to the making of a palatable soup or stew. It should be cooked, dried and ground; so prepared it keeps well, is easily transported, and can be quickly prepared by the individual soldier. It is especially proposed as a substitute for the hard bread which now forms such an important constituent of most military field rations. Hard bread is irritating to the alimentary canal and unless well masticated or soaked in fluids its sharp angular particles will cause diarrhea. While theoretically it appears to be a good substitute for leavened bread, it is well known that it soon becomes distasteful and men do not thrive on it. It also has the objection of readily becoming moldy if exposed to the damp weather. (Prepared breads like French *pain de guerre* and Austrian aerated hard bread, are either too expensive or unsatisfactory in other respects.)

In the proportions suggested, the water-free combination of rice and barley, weight for weight, has a larger percentage of fats and carbohydrate than hard bread, and though its proteid value is somewhat less, there is less loss from non-absorption, because of its greater digestibility.

In this form it was issued to the Japanese troops after February, 1905, with the result of rapidly diminishing beri-beri in their armies.

Napoleon, commenting on the terrible trials of the Moscow campaign, mentions that of all his army the Italian troops withstood the hardships best. They were subsisted on a ration made up almost exclusively of vegetables and cereals. Leonidas and his little Spartan band defended the pass of Thermopylæ on a diet of lentils. The winner of the late Marathon race at the Olympian games trained on the same food, the lentil.

Barley meal and rice with smoked beef are then to constitute the bread and meat components of the ration. In addition to these nutritive elements I would strongly advocate the issue of sugar in greater amounts than is now used in any army. While it is recognized as a necessary adjunct to the military ration, I do not believe its advantages are appreciated to the extent that its qualities merit. When energy is to be liberated rapidly, with the least tax on the digestive system, sugar, an almost pure soluble carbohydrate, would seem to be the ideal food for the purpose. It is essentially a producer of muscular energy; it increases the ability to perform work and lessens or delays fatigue. Harley showed that when 200 grams were added to a small meal the total amount of work done was increased from 6 to 30 per cent., and when added to an ample meal, this total was increased still more. Comparative experiments made by Prantur and Stowasser in 1899, showed that men to whom sugar was administered were able to perform more work with less fatigue than those from whom it had to be withheld. The pulse rate and respiration were less affected when it was given than when it was withheld.

Sugar is readily soluble, easy of digestion, appeases hunger, and lessens thirst. Possessed of such qualities, its value as a part of a military ration is unquestioned. Its combination with chocolate has been frequently recommended, especially as an ingredient of the emergency ration. When so combined it makes an excellent food or drink and is a valuable adjunct to the field ration. Chocolate is easily digested and absorbed. It has slight stimulating properties, due to its active principle, theobromine, though in this respect it has less of the active principle than coffee, but like these it appeases the cravings of hunger. It contains 12.9 per cent. protein, 48.7 per cent. fat and 30.3 per cent. carbohydrates. Its nutritive value is therefore very high. It is palatable and can be eaten uncooked or readily made into a beverage with hot water. It is easily compressed into tablets, making it easily portable, and possesses excellent keeping qualities. It thus meets with all the requirements of a military food. The only objection against it for general use is its cost.

All military men agree as to the necessity of tea or coffee as an article in the soldiers' ration. Both, when properly made, are agreeable, refreshing and stimulating beverages; both diminish bodily fatigue, and allay hunger, and as they are prepared with boiling water, they are certain to be sterile. Both enable men to endure cold and hardships, but the experience of Arctic travelers give tea the preference. When drunk hot they maintain the bodily temperature and permit the use of food for purposes of energy which would otherwise be applied to the maintenance of bodily heat. Tea is in my opinion far preferable to coffee as a component of the military ration under consideration. Coffee when roasted and ground, and in that form only is it feasible in the ration under discussion, rapidly loses its fragrance and aroma. Tea retains these qualities much longer. The equivalent of a ration of tea as compared with a ration of coffee is but one-sixth in weight, while its bulk is correspondingly smaller. Compression into tablets increases its economical value through the breaking up of the vegetable cells by pressure. The readiness with which the infusion can be made by the individual soldier is another great advantage it has over coffee. To this purpose the water bottle or canteen of the Japanese soldier lends itself readily. This is made of aluminum with a flat bottom, with a screw top which serves as a cup; water can be quickly heated in a bottle so shaped, and in a very short time the soldier's tea is prepared. Another advantage of the aluminum water bottle is that tea does not attack the metal and produce a tannate of iron as is the case when an iron vessel is used.

To the above articles should be added salt and pepper. The necessity for them is self-evident and needs no argument. The quantities in which these ingredients of the proposed daily ration should be issued, and their nutrient force values are as follows:

Articles.	Protein. gms.	Fats. gms.	Carbohydrates. gms.	Nitrogen. gms.	Carbon. gms.	Fuel Value. Calories.
Smoked beef, 170 gms.	44.88	11.73	.....	7.18	9.26	283
Rice, 315 gms.	25.20	1.89	248.85	4.00	93.56	1113
Barley meal, 135 gms.	14.18	2.97	125.78	2.36	46.54	586
Sugar, 79 gms.	....	....	66.56	...	24.60	266
Chocolate, 70 gms....	9.03	34.09	21.26	1.42	7.84	424
Tea, 10 gms.	....	....	.....	...	....	...
Salt, 10 gms.	....	....	.....	...	....	...
Pepper, 1 gm.....	....	....	.....	...	....	...
Total	93.29	50.68	462.33	14.96	181.80	2672

Nitrogen to carbon as 1 to 17.8.

This ration is easy of digestion, is palatable, satisfying, and with water it has considerable bulk; it is non-irritating, and to a degree antiseptic, and in my opinion meets with the requirements demanded.

The main objection to be apprehended from the use of a concentrated ration is its lack of bulk. Quantity is as essential as quality in rendering a food digestible. The stomach and intestinal canal require a decided amount of distension to stimulate their normal secretions, while at the same time the bulk serves to increase peristalsis, to flush the kidneys, and carry off waste products, which, if retained, would generate toxins. For this purpose I believe nothing equals hot water in value. It mixes admirably with every constituent of the ration enumerated; it furnishes that most grateful quality—heat to the digestion tract, especially at night when the soldier is exhausted and chilled after a hard day's march or the nervous tension of field service—it relieves fatigue, reinvigorates the system, and rapidly restores it to the best possible condition to resist disease.

An essential adjunct for the successful use of this ration is the portable water and soup kettle, which should form a part of every company's outfit. It should be made of aluminum, with attached fire box, mounted on wheels, and light and easy of transportation. These kettles, or similar ones, were in almost universal use by both armies in the recent oriental conflict, and they proved a most important factor, through the sterilizing of food and water, in reducing mortality from preventable diseases to the minimum point known in the history of war.

247 Fifth Avenue.

Treatment of Typhoid.—At the beginning, says Van Zant in the *Denver Medical Times*, I am accustomed to clear out the bowels with calomel and a saline, but later I rarely give purgatives for this purpose, relying entirely on colon enemata. In accordance with this plan, I have never felt it wise to resort to the Woodbridge treatment, for it is essentially laxative and irritant, increasing peristalsis and, I fear, the tendency to hemorrhage. A moderate experience with the new intestinal antiseptics has not impressed me in their favor. Salol has seemed useful in limiting tympanites, due to fermentation of food, and also as a urinary antiseptic; likewise the sulphocarbolates and creosotal. Turpentine by the mouth and in high colon flushings has a well-merited place in treatment. If the movements are not especially loose or frequent, it is not best to check them by medication, but to limit the degree of tympany as above suggested. Hemorrhage is best met by ice-bags to the abdomen, morphia hypodermically, and hypodermoclysis of normal salt solution; perforation by immediate laparotomy. Of direct specific treatment I believe there is none

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XXII.

Vesicants.

Vesication is the result of greater irritation than that which merely causes rubefaction. The exudate from the blood vessels is not absorbed, but collects beneath the horny layer of the skin, which it can not penetrate, but which it separates from the layers beneath. Such collections of fluid are called vesicles or blisters, and the agents which produce them are termed epispastics, vesicants or "blisters".

If the vesicle is ruptured soon after it has formed, and the horny layer removed, it leaves a tender surface of the skin exposed; this is irritated even by contact with the air, and, being easily permeated, it is liable to infection, hence it is better to puncture the blister with a sterile needle inserted at the periphery; the fluid is allowed to escape while the loose layer of epidermis is left in place for protection until a new hard layer is formed.

While there is some sensory stimulation, vesication may occur from slowly acting agents which do not penetrate readily, with merely an itching.

Those agents which applied to the skin cause vesication also cause an irritation of the mucous membrane, but, as the exudate escapes more readily from such surfaces vesication does not usually occur.

Vesicants, and, in fact, all but the mildest of irritants, such as heat, are contraindicated in the treatment of infants, in diabetics who are prone to gangrene, and for the old and the feeble.

The internal use of irritants which are excreted by the kidneys, and their external use if they are absorbed, as sometimes occurs with cantharides, are to be avoided in nephritis: in such cases stronger ammonia water may be used, but it is very painful.

Mustard occasions so much pain before blistering, owing to the volatility of the oil of mustard, which, therefore, penetrates readily, that it is seldom used to produce an irritation beyond the stage of rubefaction.

Cantharides contains cantharidin, which, though readily volatile at a higher temperature, is not much affected at the body temperature and does not rapidly penetrate the tissues, hence cantharides causes vesication with but little pain and is much the most popular of the vesicating agents.

OFFICIAL PREPARATIONS OF CANTHARIDES.

Cantharis.—U. S.—Cantharides, more popularly known as Spanish flies, is officially described as the thoroughly dried beetle of *Cantharis vesicatoria*. The powder of cantharides, which is the form of the drug that is most frequently found in the shops, is grayish brown in color with shining green particles. It should contain few or no hairs.

Ceratum Cantharides.—U. S.—Cantharides cerate, also known as blistering cerate or blistering plaster, contains 32 parts of powdered cantharides in a mixture of liquid petrolatum, yellow wax, rosin and lard. Cantharides cerate is most frequently used in the form of a plaster, spread on the official adhesive plaster or some other suitable grease-proof material.

Collodium Cantharidatum.—U. S.—Cantharidal collodion represents the chloroform soluble portion of 60 parts of cantharides dissolved in sufficient flexible collodion to make 100 parts.

Tinctura Cantharidis.—U. S.—This preparation represents 10 parts of cantharides extracted with alcohol. It is not usually efficient as a vesicant, but is frequently used externally as an irritant or rubefacient.

The active principle of cantharides is not soluble in water, and as the normal skin is usually covered with a thin film of perspiration or water, the necessary precautions must be taken to have the blistering preparation come in contact with the dry skin.

This is most readily accomplished by washing the part with soap and water and wiping it with a small amount of strong alcohol. In the case of the cerate or plaster the alcohol may be followed by a fatty oil, or, better still, the surface of the plaster may be thinly covered with a coating of oil.

In directing the use of a blister it should be remembered that the resulting vesicle is usually larger than the plaster that has been applied, and the size of the latter, therefore, should be gauged accordingly.

Cantharidal collodion is simply painted on the surface, and is more cleanly than the cerate. In using blistering collodion the same precaution of thoroughly cleansing the skin, with soap and water, and alcohol, should be observed so as to insure vesication.

Vesication usually ensues in about six hours after the application of the vesicant, but a somewhat longer period may elapse even in cases in which all the necessary precautions have been observed, and the physician should allow ample time before he concludes that the preparation is worthless.

Cantharides is prone to deteriorate with age, and one is often inclined to attribute the failure to cause blistering, to the worthlessness of the product, but even a faultless preparation may at times fail to produce vesication.

The now widely used rubber-base plaster containing cantharides, although not official, has many points of advantage over the less cleanly extemporaneous plaster made from the cerate. After preparing the surface of the skin, as indicated above, the plaster is smeared over with a thin film of oil and applied at once. After causing sufficient vesication it can be removed readily, and in this respect offers some advantage over the blistering collodion which continues to act until exhausted.

While cantharides is commonly employed as a vesicant, it is sometimes applied for a shorter time to produce rubefaction, and its irritant action is also made use of in hair tonics, as it is supposed to stimulate the growth of hair.[1]

The expensive Packer's tar soap has no advantage over the very much cheaper tar soap generally used by machinists for washing grease from the hands.

Where an oleaginous preparation, containing cantharides, is desired, the following may be used:

R.	Olei ricini		
	Tincturæ cantharidis, āā	f ʒii	8
	Spiritus myrciæ	f ʒi	30
	Alcoholis q. s. ad	f ʒvi	200

M. Sig.: Apply locally to scalp.

The toxicology of cantharides is of some importance because the laity has an exaggerated idea of its efficiency as an aphrodisiac without a corresponding appreciation of its harmful effects on the kidneys.

Poison oak has been used as an irritant, but it is wholly unsuited for the purpose because of the extraordinary activity of the irritant principle, the uncertainty of its action, and the inability to control it, which render it far inferior to many other available irritants.

It is of much greater toxicologic interest because of the frequency with which accidental poisoning occurs, either from handling it or merely coming into the immediate neighborhood, since even dust particles may carry enough of the extraordinarily active fixed oil, toxicodendrol, on which the action depends, to poison susceptible persons.

Toxicodendrol penetrates the skin very easily and, therefore, is difficult to remove. Even bland oils are to be avoided in the treatment of poisoning by it, since they but serve to dissolve and to spread the poison, the same being true, of course, of ointments, vaselin and cerates.

In treating a case of rhus poisoning as much as possible of the poison should be removed by repeated washing with soap and fresh portions of warm water, after which a paste of soap or a solution of lead acetate is applied. If vesicles form they should be opened with care and the liquid received on absorbent cotton or a powder such as baking soda, since it would but spread the infection if the exuding liquid were allowed to spread over the surface of the skin.

---

1. The following formula fairly represents the form of mixture commonly used as a hair tonic:

R.	Tincturæ cantharidis	f ʒii	8
	Ammonii carbonatis	ʒi	4
	Spiritus myrciæ	f ʒii	60
	Aquæ q. s. ad	f ʒvi	200

M. Sig.: Apply with brush, rubbing into the scalp after washing with tar soap.

The place should then be carefully washed with soap and warm water to remove even traces of the fluid from the vesicles, and the soap paste or the solution of lead acetate applied.

Fluidextract of grindelia robusta, diluted with water, or with a saturated solution of sodium bicarbonate (about 6 per cent.) has had a special reputation as a wash for the treatment of poison oak.

Pustulants.

Pustulants are those irritants which give rise to pustules instead of vesicles. The pustulants appear to be unable to affect the skin through the horny layer as a rule, but can only penetrate the orifices of the glands. They are much less frequently used than the rubefacients and the vesicants.

As tartar emetic is not irritant except in acid solution it has been suggested that it is decomposed by acids in the cutaneous glands, and there produces pustulation.

Croton oil owes its irritant action to crotonoleic acid, which exists mainly in combination as a fat. This fat is not affected by the gastric juice, but is split up in the intestines and the crotonoleic acid is then able to exert its violent irritation resulting in purgation.

Applied to the skin croton oil causes pustulation. It is not now so much used externally or internally as it was formerly.

Official Pustulants.

ANTIMONII ET POTASSII TARTRAS.—U. S.—Antimony and potassium tartrate, more commonly known as tartar emetic, is usually seen as a white granular powder, without odor, and having a sweet, afterward disagreeable metallic taste. It is soluble in about 16 parts of cold water, but is much more readily soluble in hot water.

Antimony and potassium tartrate may be used externally, as a pustulant, either in the form of the powder, in aqueous solution, or in the form of an ointment. The German pharmacopeia contains a formula for the latter preparation that appears to be quite popular on the continent of Europe. This is a simple mixture of 20 parts of antimony and potassium tartrate, with 80 parts of petrolatum.

Because of its irritant action tartar emetic produces nausea or emesis, when taken internally, according to the amount employed. It is much more frequently used as a nauseant than as an emetic, and least often as a pustulant; for the latter purpose it will be found to be preferable to use it in the form of an ointment, similar to the one referred to above, simply rubbed on the skin.

OLEUM TIGLII.—U. S.—Croton oil is described as a fixed oil expressed from *Croton Tiglium*. It occurs as a pale yellow, or brownish yellow viscid, fluorescent liquid, having a mild, oily, afterward acrid and burning taste. In eastern countries croton oil appears to have been known from a very early period. It was known in Europe several centuries ago, but fell into disuse and was reintroduced there with several other drugs from India, about 1813.

Caustics.

Caustics are irritants which either cause violent inflammation, resulting in necrosis, or dissolve the tissue by direct chemic action.

Caustics may be used to produce counterirritation alone, to remove exuberant or diseased tissue, or, in diluted form, to stimulate non-granulating surfaces.

Apart from the use of the thermo-cautery in surgery, that of lunar caustic for exuberant growths and non-granulating tissues, and of arsenic for the destruction of the nerves of teeth, caustics are not very widely used at the present time.

The number of substances possessing a corrosive action is of course very great, but many of them are not suited for therapeutic use, thus the strong alkalies, such as caustic potash and caustic soda, dissolve the tissue and penetrate deeply, hence their action is not easily controlled, besides they are very painful.

Potassium hydroxid, better known, perhaps, as potassa, is sometimes used to soften and to remove the callous of corns and warts.

The action of silver nitrate, and of copper sulphate, in the form of molded sticks, or cones, is so easily controlled that they are very comonly used.

ARGENTI NITRAS.—U. S.—Silver nitrate, as lapis infernalis, appears to have been known to Geber in the eighth century and has been used extensively since that time. It occurs as colorless crystals, which are freely soluble in about one part of water and melt or fuse at 200 C. (392 F.). This latter feature is taken advantage of in making the official forms of fused silver nitrate, and is also of advantage in forming extemporaneous preparations, for local application, by melting or fusing silver nitrate onto suitable metallic instruments such as sounds.

ARGENTI NITRAS FUSUS.—U. S.—Molded silver nitrate contains about 95 per cent. of silver nitrate, with a small amount of silver chlorid, which is added to make the sticks tough and fibrous.

ARGENTI NITRAS MITIGATUS.—U. S.—Mitigated silver nitrate is composed of one part of silver nitrate and two parts of potassium nitrate fused together.

CUPRI SULPHAS.—U. S.—Copper sulphate or blue vitriol occurs as large, transparent deep blue crystals. For external use these crystals may be rasped or filed into suitable shape, and are then used in very much the same way as are the sticks of silver nitrate.

The various uses of these agents are so well known that they scarcely require extended treatment here.

When the lunar caustic is used on exuberant granulations care should be taken to avoid bringing it into contact with the newly formed skin, which is recognized only as a bluish line, since this occasions pain and is, of course, destructive of the very object it is intended to promote.

ARSENIC AND ZINC CHLORID.

ARSENI TRIOXIDUM.—U. S.—Arsenic trioxid, also known as arsenous acid and as white arsenic, occurs most frequently as an odorless and tasteless white powder, that is but slowly soluble in about 100 parts of water.

ZINCI CHLORIDUM.—U. S.—Zinc chlorid occurs as a white granular powder or a porcelain-like mass. It is freely soluble in water, but the solution decomposes, on long standing or boiling, depositing a basic salt.

Arsenic and zinc chlorid have been used to destroy cancerous growths. Arsenic, particularly, has been widely used as the active constituent of various cancer cures that have been proposed by regular as well as irregular practitioners. Its action is very slow, and therefore it can be readily controlled, but it occasions considerable pain. Arsenic may be employed in the form of powder, as an ointment, either with lard or petrolatum, or as a paste. In the latter case the arsenic is suitably diluted with either starch or powdered althæa, and subsequently mixed with water to which a trace of gum or mucilage has been added. At present arsenic is most frequently used for the destruction of the nerves in carious teeth.

Zinc chlorid is now but seldom used for its local corrosive action. It may be used in aqueous solution or fused on to and over suitable metallic instruments, much as silver nitrate is used.

Mercuric chlorid is the most corrosive of the metallic salts, but it is too toxic to permit of its general employment for its local caustic action.

SOME OTHER OFFICIAL CAUSTICS.

ACIDUM NITRICUM.—U. S.—The official nitric acid contains 68 per cent. by weight, of absolute nitric acid, and occurs as a colorless, fuming liquid that is very caustic and corrosive.

LIQUOR HYDRARGYRI NITRATIS.—U. S.—Solution of mercuric nitrate occurs as a clear, nearly colorless liquid, having a faint odor of nitric acid and a strongly acid reaction. It should contain about 60 per cent. of mercuric nitrate and about 11 per cent. of free nitric acid.

UNGUENTUM HYDRARGYRI NITRATIS.—U. S.—Ointment of mercuric nitrate is made by dissolving 7 parts of mercury in 10.5 parts of nitric acid and adding this solution to 76 parts of lard that has, previously, been partially decomposed by 7 parts of nitric acid, and continuing the heat, if necessary, until the reaction is completed. The resulting ointment should have a bright yellow color, whence its popular name, "citrine ointment."

UNGUENTUM HYDRARGYRI AMMONIATI.—U. S.—The oint

of ammoniated mercury is now directed to be made by mixing 10 parts of ammoniated mercury with 50 parts of white petrolatum and 40 parts of hydrous wool fat.

Nitric acid is a popular domestic remedy for the removal of warts. The surrounding surface should be thickly covered with petrolatum and a single drop at a time of the acid applied to the excrescence.

Emollients.

The word emollient is derived from *emollio*, to soften; demulcent comes from *demulceo*, to smooth. Since the same agent is usually demulcent as well as emollient, the term to be used depends on the tissue to which the agent is to be applied, rather than on the medicinal agent itself. Mucous membranes rarely require softening, but an inflamed skin is frequently hard and rough, we therefore speak of applying demulcents to mucous membranes and emollients to the skin.

Not only bland oily substances and fats, but mucilages and diluted glycerin act as emollients. Glycerin, when diluted with water, and rubbed into the skin, prevents it from becoming dry and harsh, and the tendency to crack. Oils and fats penetrate the skin and render it soft.

SOME OFFICIAL EMOLLIENTS.

Adeps Lanæ Hydrosus.—U. S.—This preparation, formerly official as lanolin, is the purified fat of the wool of sheep (*Oris aries*), mixed with about 30 per cent. of water.

Glycerinum.—U. S.—Glycerin or glycerol is a clear colorless liquid of syrupy consistence, obtained by the decomposition of vegetable or animal fats. Anhydrous glycerin is slightly rubefacient, but when diluted, as noted above, is an efficient emollient.

Mucilago Tragacanthæ.—U. S.—Mucilage of tragacanth contains 6 per cent. of tragacanth and 18 per cent. of glycerin, with water to make 100 parts.

Petrolatum.—U. S.—Under this general heading the present Pharmacopeia includes what was formerly known as hard and soft petrolatum.

Petrolatum, a mixture of hydrocarbons, of the methane series, is obtained from petroleum and should be of about the consistence of an ointment. The official substance may vary in color from yellow to light amber and have a melting point varying from 45 to 48 C. (113 to 118.4 F.). In addition to this, which is popularly known as yellow petrolatum, the Pharmacopeia also includes:

Petrolatum Album.—U. S.—This is a white unctious mass, of about the consistence of ointment, that otherwise has the same chemical and physical characteristics as petrolatum.

Petrolatum Liquidum.—U. S.—Liquid petrolatum is a colorless or only slightly yellowish, oily transparent liquid without odor or taste, but giving off, when heated, a slight odor of petrolatum.

Of the vegetable oils that are useful as demulcents, it will suffice to enumerate:

Oleum Amygdalæ Expressum.—U. S.—Expressed oil of almonds.

Oleum Gossypii Seminis.—U. S.—Cotton seed oil.

Oleum Olivæ.—U. S.—Olive oil; and

Oleum Theobromatis.—U. S.—Oil of theobroma, cacoa butter.

Of the several official preparations by far the most popular is:

Unguentum Aquæ Rosæ.—U. S.—Ointment of rose water, or, as it is usually called, cold cream. This ointment consists of a mixture of spermaceti, white wax, expressed oil of almonds, sodium borate and rose water, and in one form or another has been the most popular of the mild emollients from the time of its originator, Galen.

Emollients are used for the protection of inflamed skin against irritants, the choice depending on individual preference or convenience rather than on the nature of the drug. Thus mucilage of tragacanth, ointment of rose water and petrolatum differ widely in their physical properties, but they are all used for chapped hands, sunburn, and to soften the skin when it is rough and hard.

The bland oils and ointments penetrate the skin more readily than does diluted glycerin, and, therefore, they are to be preferred as emollients when they are also to serve as carriers of medicinal substances intended for absorption.

Diluted glycerin is an excellent agent for softening the skin, but is somewhat irritant, and when the sensitive layers of the skin are exposed, a bland oil or ointment, such as cold cream, is to be preferred.

To prevent chapping of the skin when it is exposed to the wind, to alternate wetting and drying, or to irritants, the mucilage of tragacanth, preferably mixed with equal portions of glycerin, will be found useful. The exposed surface is washed with warm water and soap to soften the skin, and while still moist, but not wet, a little of the mucilage, or the mixture of mucilage and glycerin, is rubbed into the surface until the latter feels smooth. Instead of the tragacanth mixture the following may be preferred by some, but it is somewhat irritant to very delicate skin:

One ounce of glycerin soap is reduced to shavings and dissolved with the aid of gentle heat, in half a pint of equal parts of glycerin and water. This mixture solidifies on cooling, and a piece about twice the size of a pea is to be rubbed into the moist skin as often as may be necessary. Those who work with irritant or corrosive chemicals will find this an excellent agent for keeping the hands soft.

A liquid preparation that has met with considerable favor may be made by mixing ten parts of tincture of benzoin, fifty parts of water, and forty parts of glycerin. To secure a homogeneous mixture the water should be gradually added to the tincture of benzoin and the glycerin added to this mixture. If the resulting mixture should still be irritating the amount of glycerin may be further reduced, with a corresponding increase in the quantity of the water. If rose water be substituted for the water in the above formula the resulting mixture would simulate some of the well known and widely advertised proprietary toilet preparations of glycerin and roses.

Clinical Notes

TUMOR OF THE CECUM AND ASCENDING COLON; REMOVAL AND RECOVERY.*

A. B. KNOWLTON, M.D.
COLUMBIA, S. C.

History.—The patient, a lady aged 56, unmarried, was admitted to my infirmary as the patient of Dr. E. J. Wannamaker of Columbia, S. C. She weighed about 96 pounds, being emaciated from twenty years of gradually increasing intestinal obstruction. No bowel movement could be had except in response to patient, persistent and painful effort, both by enemata and by powerful purgatives. In consequence her suffering had gradually increased, each exacerbation becoming more and more pronounced till her condition was that both of physical suffering and mental anguish, which only slowly increasing intestinal obstruction can induce.

The patient periodically eructated quantities of gas and vomited nearly all liquids and nourishment. Anodynes gave her her only relief, except occasionally when in response to cathartics, and by dint of much suffering, a few drams of fecal matter would pass.

Examination.—The abdomen was enlarged from chronic gaseous distension and fecal retention. Through the thin parietes could be plainly seen the peristaltic waves in their oft repeated attempts at emptying the bowel of its contents. There was a mass in the right iliac region extending upwards in the direction of the right kidneys.

Treatment.—Patient was surely but slowly failing, and operation, which Dr. Wannamaker requested me to perform, was done for the first time Sept. 30, 1904. On account of her condition nothing more was anticipated than the relief of possible constricting bands of adhesion or perhaps the evacuation of any fluid that might be encysted. The tumor proved to be one of the head of the cecum and the entire ascending colon surrounded by a mat of intestinal adhesions throughout

* Read before the Tri-State Medical Society of the Carolinas and Virginia, White Stone, S. C., Feb. 18, 1906.

its extent. The patient being unable to endure a radical operation a right inguinal ileostomy should undoubtedly have been performed, but having promised before operation not to leave her with an artificial anus under any circumstances, we were compelled to content ourselves with snipping a few adhesions and closing the abdomen.

To our great surprise the patient evidenced remarkable recuperative powers, and although the obstruction was not in the least degree removed, she was still alive at the end of two weeks. At this junction patient consented to an artificial anus, provided we promised to do a subsequent operation and remove it. Accordingly, Oct. 15, 1904, the second laparotomy was performed and a right inguinal ileostomy established. The incision was made in the line of the preceding one, and a loop of ileum two inches from its termination in the cecum was brought out and suspended on a glass rod by running the same through the mesentery, after the manner of Grieg Smith, and the redundant incision closed. In twenty-four hours the ileum was opened. The relief from suffering was magical, as would have been expected. Recovery was rapid, appetite returned, and patient was given six weeks in which to go home and recuperate. At the end of this time she returned, much increased in weight, looking well, and according to her statement, feeling better than she had in ten years.

A third abdominal section was performed Dec. 28, 1904. Incision was made in the left inguinal region, and the ileum was resected (intra-abdominally) two inches from its termination in the artificial anus. The distal end was inverted and closed by a silk purse string suture. The free proximal end was implanted by Murphy button into the lower end of the descending colon just above its passage over the pelvic brim—the operation constituting technically a left inguinal ileo-colic implantation. It was with some hesitancy that the Murphy button was used in this procedure as the colon was so narrowed and shrunken from years of comprhrative disuse that it was at first doubtful whether or not the button could ever pass through. It was, however, finally adopted. The bowels moved naturally in forty-eight hours. The patient said this was the first natural and comfortable bowel movement she had had in approximately fifteen years. The button was passed on the twenty-second day. Nothing thenceforth passed through the artificial anus but an occasional drop of mucus, and patient was dismissed for another holiday.

March 31, 1905, she returned in excellent condition, the fourth and last laparotomy was done, the old scar of the first two operations in the right iliac fossa was dissected out, and the abdomen opened. Many old and dense adhesions were broken up and the cecum with the appendix buried in a tumorous mass, the entire ascending colon up to and including a portion of the hepatic flexure and the four inches of ileum leading up to the ileo-cecal juncture constituting the artificial anus all removed in one mass. The distal end of the hepatic flexure was inverted with silk purse-string. The abdomen was closed, and April 28, 1905, the patient was dismissed without obstruction, without tumor, and without artificial anus, and in excellent health and comfort.

Owing to an oversight, the microscopic nature of the tumor was not determined, but from the history of the case, the absence of mesenteric lymphatic involvement, the macroscopic appearance of the growth, together with the subsequent conduct of the case, I believe that there was nothing malignant. I judge it to have been fibrolipoma. Operation, however, was just as essential as if it had been malignant. For a distance of six inches the caliber of the ascending colon through the tumorous mass was reduced to the size of a goose quill.

The case emphasizes the value of intermittent surgery in certain intestinal conditions where there is a neoplasm, stricture, volvulus, or other obstruction to be removed and where the patient's physical condition debars an immediate radical procedure. A quick, clean enterostomy or colostomy in these cases is, indeed, one of the most valuable resources known to surgery. Whether the obstruction be acute or chronic, when the patient's ability to endure a radical operation has long since vanished, a timely opening of the bowel just above the seat of obstruction is a procedure to which every such victim is most honestly entitled. By this means the patient is immediately given a respite from his suffering and an opportunity to gain sufficient strength for whatever radical operation should be attempted at a later date.

Another point which this case illustrates is the "resisting power" so often evidenced by those who have been invalids for years. There is no doubt that old chronics oft times show a most remarkable ability to withstand the exhausting effect of surgical procedure. The intestine, from long-continued overdistension from gas, has acquired a degree of toleration which is truly astonishing, while from chronic fecal retention there results a degree of acquired immunity from intestinal toxemia which undoubtedly contributes largely to the actual recovery of these cases after operations. These facts should not be lost sight of in estimating the probable termination of any prospective operation on such cases. It must ever be remembered, too, that in *acute* obstructions the effects of gaseous and fecal distention are quite the opposite. In a subject who is accustomed to daily normal bowel movements, the obstructive retention can not but result in a deleterious amount of autointoxication, while the sudden, unusual and persistent gaseous distension is sure to induce a degree of intestinal paresis which, even after the relief of the obstruction, may be sufficient to produce death.

Thus it would seem that in chronic cases the intestinal canal is one of the most tolerant of all of the abdominal organs, while in acute conditions, especially acute obstruction, it is one of the most easily damaged.

All intestinal neoplasms should be operated on early, for, whether malignant or benign, the inevitable tendency is toward obstruction. The condition is strictly surgical. Palliative treatment leads only to a lowered vitality and an increasingly difficult operation. In view of the prompt and kindly healing of every portion of the intestinal tract, the operative outlook in regard to this organ is one of the brightest of modern surgery.

A NEW METHOD FOR THE DETERMINATION OF LEAD IN THE URINE.

ARTHUR LEDERER,
Demonstrator of Chemistry, College of Physicians and Surgeons (University of Illinois).

CHICAGO.

In examining two specimens of urine for lead in Prof. Charles S. Williamson's clinic at the College of Physicians and Surgeons, Chicago, I experienced great difficulty in using the different methods, inasmuch as some take too much time, some are not sufficiently sensitive, while others require expensive apparatus. Considering the fact that the amount of lead found in chronic poisoning rarely exceeds 10 mg. per liter, the method must be exceedingly sensitive. The methods heretofore used are that of Fresenius and Babo as described in v. Jaksch "Klinische Diagnostik," and that given by E. E. Putman in Keating's "Cyeopedia of the Diseases of Children." Both of these methods require a great deal of time and considerable chemical training. Two other methods, very simple, but not sufficiently sensitive, are those of v. Jaksch[1] and J. H. Abram.[2]

An electrolytic method was worked out by S. R. Trotman and F. H. Jacob.[3]

1. "Klinische Diagnostik."
2. The Lancet, London, ——, 1897.
3. British Medical Journal, ——, 1903.

This method has several advantages and does not consume a great deal of time, but requires an expensive platinum dish and an electric battery, neither of which is apt to be in the possession of the average practitioner. Other metals, if present in the urine, may lead to an erroneous conclusion.

It was my intention to find a method which would be reliable, free from fallacy, sufficiently sensitive, which could be performed by every physician, required but little chemical training, and for which the material could easily be obtained. As the destruction of organic matter is absolutely necessary I found potassium persulphate in sulphuric acid solution the best means for this purpose. Strong sulphuric acid alone does not work satisfactorily and potassium chlorate and hydrochloric acid work too slowly and give off disagreeable fumes of chlorin gas.

Five hundred cubic centimeters of the urine to be examined are placed in a porcelain dish (lead free) or in a sufficiently capacious beaker, and about 70 c.c. of concentrated sulphuric acid (free from metals) are added and the combined amounts are heated over a Bunsen burner. Potassium persulphate is added in small portions to the amount of 20 or 25 grams. The urine which is colored red by the addition of the sulphuric acid is only slightly yellow when boiling starts; the urine probably cloudy before, almost instantly becomes clear and transparent. It is then evaporated to about half its volume.

Should the solution become cloudy during evaporation a small amount of concentrated sulphuric acid is added and the boiling continued for about ten minutes. A few crystals of potassium persulphate should be added in case the urine darkens again during evaporation, but care should be taken to remove the burner first to prevent the liquid from boiling over. This procedure is only occasionally necessary as the urine generally remains clear, and slightly yellowish. After the urine has evaporated to about 250 c.c. it is allowed to cool and about 250 c.c. alcohol (90 vol. per cent.) is added. It now is allowed to stand about four hours in a cool place; during this time the smallest amount of lead is precipitated as insoluble sulphate. The evaporation of the urine can also be carried on till less than half its volume remains, but an equal volume of the alcohol should always be added.

The solution is then filtered through a quantitative filter, washed with hydrochloric and fluoric acid, and the beaker or dish carefully washed out with alcohol. Washing the filter is only necessary once to remove coloring matter. A clean small beaker, or test tube, is put underneath the funnel, and a small hole is punched through the tip of the filter with a clean glass rod. Everything on the filter is then washed down carefully with distilled water from a wash bottle, care being taken not to get too much fluid. If carefully handled not more than 10 c.c. are required. Care also should be taken to remove all particles left on the small glass rod. If considerably more than 10 c.c. is used the solution can be evaporated again if a quantitative determination is wanted. For qualitative determination it does not matter if a few c.c. more or less of distilled water are present. The solution in the test tube now contains all the lead of the 500 c.c. urine, if such was present, in the form of an insoluble sulphate of lead. The amount is sometimes too small to be observed as a precipitate with the naked eye. It might be only a slight cloudiness, hardly visible. The solution is heated over the Bunsen burner and crystals of sodium acetate are added till the solution appears entirely clear and transparent. After the solution is cleared up it is allowed to cool and hydrogen sulphid gas is passed through it. The slightest yellowish-brown discoloration proves the presence of lead.

The test for lead with hydrogen sulphid gas is one of the most sensitive in analytical chemistry. To prove the limitations of the test I performed several experiments and found that 2 c.c. of a 0.002 per cent. lead acetate solution made up to 10 c.c. with distilled water still gave a very slight yellowish discoloration if the solution is looked at from above. This would correspond to 0.00002 gm. lead. It is preferable to pass the gas also through a test tube containing the same amount of distilled water, inasmuch as a slight discoloration can be easily differentiated by comparing the two solutions after the gas has been passed through. Five minutes is sufficient for the passage of the gas.

A great advantage of this method is that even if bismuth is present in the urine it will not interfere with this test, neither will any other substance likely to be present. By comparison with artificial lead solutions containing 1 mg., 2 mg., 3 mg., etc., of lead per liter, a simple quantitative colorimetric method can be established (One part lead acetate crystal contains 0.54 parts of lead.)

Sensitive as the reaction is, it takes but little training to perform the described determination most accurately. If 500 c.c. are taken originally the amount of lead found must of course be multiplied by two in order to get parts per liter. In the two specimens mentioned in the first part of this article I was able by this method to detect 5 mg. in one case and 3 mg. in the other.

The advantages I claim for this method are accuracy of the determination, rapidity with which the determination can be made, and simplicity of technic.

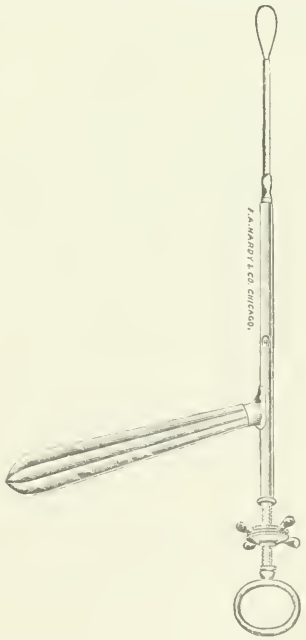
New Instrument

A TONSIL SNARE.

J. A. PRATT, M.D.
AURORA, ILL.

In presenting this tonsil snare to the profession I wish to recommend its simplicity, strength, lightness and cheapness.

The instrument consists of three parts: The shaft, with handle, the stylet and the tip. In place of the straight tip the



different size Vedder tips can be used, all of which are easily taken apart and cleaned.

Wire from Nos. 5 to 8 can be used. The instrument weighs four ounces.

After the tonsil is dissected free from the pillars and the loop is passed over it to the base, by a slight pull on the ring in the end of the stylet the loop is drawn tight and the set-screw is twirled down by the finger setting the loop. The tonsil can now be quickly and easily ecrased.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, MAY 26, 1906.

INSTRUCTION IN OPERATIVE MEDICINE.

In a recent address at New Haven, Dr. Harvey Cushing[1] discusses certain newer developments in the teaching of surgery, or operative therapy, and, inasmuch as the fundamental ideas are of great importance to medical men in general, a brief summary, with comments, may not be without some value. Cushing emphasizes very forcibly the fact, perhaps not so thoroughly understood as it should be, that the essential distinction between surgeons and physicians, between surgery and medicine, as these words are usually employed, lies not in any fundamental differences in general principles or in early training, but wholly in the degree to which manipulative or operative therapy is employed in these two great but largely artificial subdivisions of medicine.

In his daily work the physician employs various essentially surgical methods for diagnosis and treatment, e. g., aspiration of pleural and other cavities, meningeal puncture, etc., methods that require rigid observation of surgical cleanliness, and he early learns to realize when the limits of his operative skill are reached. It is the major forms of operative procedure that, especially in the larger cities, are given over to the surgeon, who, unless he chooses to be a mere handicraftsman, an operator pure and simple, and to occupy no higher plane than the cutter for hernia and stone of a few centuries back, must ever endeavor to maintain familiarity with disease and its diagnosis both at the bedside and in the laboratory, and especially so in these days when anesthesia and surgical cleanliness have made it possible more and more to apply operative therapy to disturbances of visceral functions and structure. Assuming that these general considerations rest on a sound basis, how may the most sympathetic relations be established between "the species surgeon and the species physician" and how may the surgeon best guard himself from losing touch with general medicine so that his chosen branch of it be not made into a mere trade?

Cushing believes that these desirable developments may be favored by certain changes in the manner in which the subject of operative surgery is presented to the student. At first surgery in our medical schools was taught largely by didactic methods, the dissecting room furnishing the only opportunity for acquiring manual dexterity. To Langenbeck is given the credit of having added to the curriculum a practical course in operative surgery on the cadaver, and now our medical schools are supposed to give their students courses of this kind (we fear that in many cases they are given hurriedly and somewhat perfunctorily). But didactic lectures, amphitheater clinics and operations on the cadaver can not impart in the right way to the student the underlying principles of aseptic operative technic on the living subject, and to remedy in some measure this defect, as well to study the diseases that invite operative treatment, there was established in 1901, under Cushing's direction, a course for undergraduate students in operative surgery on living animals, especially dogs, normal and diseased. Largely for this purpose a building, the Hunterian Laboratory of Experimental Medicine, has been specially constructed. We can not enter on a discussion of the details of the course or of the arrangements of the building; both present many points of interest. The point for special emphasis is that actual surgical work and training under favorable conditions have been organized for undergraduate students and put into what seems to be successful, practical operation. The two main purposes one may hope to accomplish in some degree by such a course are "practical finger-end knowledge" of the principles of modern surgical technic and asepsis and to inculcate the fact that "the operation is not the beginning and the end of surgery, but a therapeutic measure alone, and that those employing this manner of treatment must have the same knowledge of disease, the same ability to make examinations, the same instincts to follow pathologic material to the laboratory and to investigate there the causes and symptoms of disease as should characterize any other member of the body medical."

After giving due allowance to the attractiveness of a course like this on account of its very novelty and because of its idealistic program, it is, indeed, difficult to escape the conclusion that its inauguration marks a definite advance in medical teaching. We say medical teaching because the advantages of a course of this kind must be just as great to the future non-operating as to the operating physician. Certainly the principles of asepsis can not be too strongly impressed on the physician, whatever his future work may be. It is plain, too, that a course like this fits the student directly for immediate practical responsibilities which is especially desirable in the unfortunate event that his medical course can not be supplemented by actual service as interne under competent teachers in a good hospital (which, by the way, in time, and let us hope before too long, must be required of all applicants for license to practice). Various side issues also press in for consideration, only one of which can be mentioned, namely, the great influence which work of this kind eventually is bound to exert on veterinary medicine.

1. Johns Hopkins Hospital Bulletin, 1906, vol. xvii, p. 123.

THE CHEMISTRY OF TUMORS.

Chemical investigations of tumors have been relatively few in number, but so far as they have yet been made there has been little found indicating any important deviation of the chemical processes of tumors from those of normal cells of similar origin. Likewise the chemical composition of tumors resembles closely, on the whole, the composition of the parent cells from which the tumor arose, often to the most minute details. Thus Bang found that sarcomas derived from lymph glands contain the particular nucleoproteids that are found normally only in lymph glands; hypernephromas contain, like adrenal tissue, much fat, lecithin and cholesterin; squamous carcinomas develop great amounts of keratin; while carcinomas of mucous membranes often contain great quantities of mucin.

Many investigators have sought in cancer tissues a poison that might account for the cachexia characteristic of new growths. Extracts have been obtained that were destructive to red corpuscles (hemolytic) and that were sometimes slightly toxic to animals, but the results have not been sufficiently striking to account for all the features of cancer cachexia. Because of the abundant areas of anemic necrosis in malignant tumors, autolysis often occurs extensively, and the products of this self-digestion are both hemolytic and toxic to a certain degree, which probably explains the experimental results, but scarcely accounts for the cachexia. As yet no substance has been isolated from or detected in malignant growths that is peculiar to them and not found in normal cells; and much less has any substance been found that will account for the occurrence of tumors or for the results they produce.

Recently a number of interesting positive findings have been made, and, although they have not as yet served to elucidate any of the problems of tumor pathology, yet they possess sufficient interest to repay a brief review. Wolff[1] has studied the proteids contained in the juice expressed from cancer cells, and found that it differs from the juice of normal cells in containing a very much smaller proportion of globulins as compared to the albumins; qualitatively, however, no differences between cancer proteids and normal proteids could be detected. Bang[2] has found that sarcomas derived from lymph glands contain the particular nucleic-acid-histon compound that is characteristic of normal lymphatic tissues, and believes that it is possible to prove chemically the origin of a round-celled sarcoma from lymphatic tissue by a simple chemical test for the histon-nucleinate. Bergell and Döringhaus[3] have studied the structure of the proteids of tumors by isolating the amino-acids by Fischer's ester method, and have found them quite different from ordinary tissue proteids. In the material they examined, which consisted of a mixture of several varieties of carcinoma and a sarcoma, they found relatively high proportions of alanin, glutaminic acid, phenylalanin and asparginic acid, while leucin was relatively small in amount, and glycocoll and tyrosin were also very scanty. These results are important, but need confirmation with pure materials and on a larger scale.

There has been much interest concerning the glycogen of tumors, particularly because of the view advanced by Brault and others that glycogen is a characteristic of fetal tissues in particular, and that, therefore, the proportion of glycogen present in a tumor is an expression of the degree to which it has reverted to the fetal type, and, therefore, an indication of its malignancy. This idea has been found to be entirely erroneous, and the amount of glycogen that a tumor contains seems to depend on two chief factors: (1) The embryonal origin of the tumor, those arising from tissues normally rich in glycogen (e. g., cartilage, squamous epithelium), containing most glycogen. (2) The presence of areas of degeneration from impaired cell nutrition, which leads to glycogenic infiltration alike in tumors and normal tissues (Gierke). Lubarsch[4] reports the results of the examination of 1,554 tumors for glycogen, with positive results in 447, or 29 per cent. It was present in all teratomas, rhabdomyomas, hypernephromas and syncytiomas; in 70 per cent. of the squamous carcinomas, but never in mucoid or colloid cancers; in about 50 per cent. of the sarcomas; but rarely, indeed, in fibromas, lipomas, gliomas, and adenomas. Of other carbohydrates in tumors the pentose group has been especially studied by Neuberg and by Beebe,[5] the former believing that the production of pentose in autolysis is quite characteristic of tumor tissues, the latter finding no characteristic features in the occurrence of this substance. Beebe, however, has advanced the interesting suggestion that a tumor metastasis frequently resembles chemically the organ in which it grows, quite as much as it does the tissue from which it arose, if not more. This observation is quite important, suggesting that the microscopic features of a growth may follow quite different laws from its chemical features, since the former remain true to the tissue giving rise to the tumor, and never irritate the tissue in which the metastasis may have been implanted.

The same author, in a study of the inorganic constituents of tumors, found evidence that potassium is quite prominent in rapidly growing tumors, while in slower growths the potassium sinks and the proportion of calcium increases. Clowes and Frisbie,[6] studying the same question in experimentally produced tumors in mice, with which the age and rate of growth could be well controlled, came to similar results. This agrees with the known importance of potassium for actively growing cells in plant life and in the lower animal forms.

1. Zeits. f. Krebsforschung, 1905, vol. iii.
2. Hofmeisters Beitr., 1903, vol. iv, p. 368.
3. Deut. med. Wochft., 1905, vol. xxxi, p 1426.
4. Virchow's Arch., 1906, vol. clxxxiii, p. 188.
5. Amer. Jour. of Phys., 1905, vol. xiv, p. 231.
6. Ibid., p. 173.

Martha Tracy[1] found nothing characteristic concerning the location or quantity of iron and phosphorus in tumors.

That tumors should show, on the whole, so little variation in chemical composition from normal tissues is not surprising, if we stop to consider a number of well-known facts concerning their biology. The metabolic products of tumors, as well as their histologic structure, vary little from those of the parent tissue. Thus metastatic growths of thyroid tissue will produce thyroiodin in the most remote parts of the body; metastases from carcinomas of the liver may produce bile when located in the lung or any other organ; tumors from the choroid or from pigmented moles produce melanin that seems to be quite the same as the normal melanin. If tumor cells are able to produce such complicated metabolic products as these, which are quite specific for the tissues from which they are derived, there can be little question that the course of chemical processes in tumors must be almost or quite identical with the chemical processes of normal cells of similar origin.

PSYCHIC RESEARCH.

Such subjects as apparitions, psychism, spiritualism and the like have been so much exploited by charlatans and pseudo-scientists, with interests so obviously personal and selfish, that reasonable men, honestly desirous of ascertaining the truth, have generally abandoned this field. Professor Hyslop, however, is an honest, earnest searcher for the truth, and his latest book, "Enigmas of Psychical Research,"[2] is entitled to scientific consideration, even though this must be quite adverse to his position. He accuses scientific men, especially "physical" or "materialistic" scientists, of purposely and even maliciously ignoring the work of those engaged in psychic research, of a very culpable indifference to supernormal or metaphysical phenomena. "Science," he declares, "having become accustomed to residual facts within its own domain, is loath to admit the existence of facts which limit that domain or demand the acceptance of a larger than the ordinary material world." Let us inquire how just are these accusations:

Charles Darwin some thirty years ago, when spirits were rather rife in England, was invited to inquire into their nature and habits. Though skeptical, he respectfully and attentively considered the subject and got Huxley to help him. The latter visited a seance held in a private house and reported to Darwin that "the performance was as gross an imposture as ever came under my notice." Professor Darwin, who was also present, declared: "Unless I had seen it I could not have believed in the evidence of any one with such perfect good faith as Mr. Y. (the host) being so worthless. It has given me a lesson with respect to the worthlessness of evidence which I shall always remember, and, besides, will make me very diffident in trusting myself." Charles Darwin concluded concerning the medium on this occasion who "had the highest credentials": "To my mind, an enormous weight of evidence would be requisite to make one believe in anything beyond mere trickery"; and again: "The Lord have mercy on us all if we have to believe in such rubbish." Tyndall, who investigated "spirits" exhaustively, has described his many difficulties in conducting a thoroughly scientific investigation in the presence of believers or, shall we say, gullible people. He could not persuade them to employ such ordinary precautions as are essential to investigate these phenomena; and he clearly demonstrated their fraudulent character. Prof. Simon Newcomb, who was perfectly willing to oblige the spiritists and to study the phenomena which interested them, has left in his "Reminiscences" diverting accounts of how he found it impossible to continue on the farcical lines laid down by them. Faraday, at the cost of much time and trouble, convinced all who were open to conviction that fraud and self-deception were at the bottom of most of the spiritist doings with which he came in contact. He was shocked at "the superstitions which in this day of boasted progress are a disgrace to the age and which afford astonishing proofs of the vast flood of ignorance overflowing and desolating the highest places."

If these great names do not suffice Professor Hyslop we would add that Podmore, who was president of the Psychic Research Society, demonstrated in his book, "Studies in Psychic Research," the preposterous and flimsy basis for most of the "established facts" on which spiritism was founded. This book, by the way, is a splendid exposition of the laws of evidence which should obtain in any investigation, and is well worth the perusal of both physicians and lawyers. Jastrow, in his "Fact and Fable in Psychology," submits some very illuminating data. Balfour, the recent British premier, as the result of an exhaustive study of psychic phenomena, has become the most conspicuous modern example of the "philosophic doubter." Among the great men in science who have taken up this subject was Wallace, who has been characterized as a "willing believer"; this should not surprise any one who has noted how "easy" Wallace was in the hands of the anti-vaccinationists.

Professor Hyslop does not help his position by such characterizations as "physical" or "materialistic" scientists. Herbert Spencer, the great formulator of the doctrine of evolution, was justly impatient of those who held that doctrine to be purely materialistic. His "First Principles" begin with an earnest and reverent consideration of the immaterial "unknowable" whence is derived so much of the knowable as finite human wis-

1. Jour Exper. Med., 1905, vol. vii, p. 1; Jour Med. Research, 1906, vol. xiv, p. 417.

2. Enigmas of Psychical Research. By J. H. Hyslop, Ph.D., LL.D., Formerly Professor of Ethics and Logic in Columbia University, Author of "Science and a Future Life," etc. Cloth. Pp. 425. Price, $1.50 net. Boston: Herbert B. Turner & Co., 1906.

dom can by patience and reason come to understand. Science is knowing; and the real scientist is eager only for the truth, no matter where he may find it or whither it may lead him. Each worker gathers what he can within his own ken, insisting only that his facts shall be true and absolutely incontrovertible; and all which he gathers together he gladly adds to the sum of all science or knowing, which is philosophy, in the hope that his gleaning may redound to the welfare and happiness of his kind.

DISPENSARY TREATMENT FOR TUBERCULOUS WORKING PEOPLE.

The journey of the tuberculosis exhibit through the country has been marked by a distinct awakening of public sentiment on this subject in each city which has received it. The exhibit, covering, as it does, the sociologic aspect of tuberculosis, has stimulated the interest of philanthropists as well as physicians and we hear of new plans for various preventive measures in many of our larger cities. It is generally conceded that what is most needed at present is the development of home treatment and, therefore, of special dispensaries for the tuberculous. Without in the least detracting from the value of sanatorium treatment, it must be admitted that its field is limited, for working people can not, in the great majority of cases, undertake a course of treatment which necessitates giving up their work. Sanatorium treatment, while always the ideal, is, as every one knows, applicable only to the favored few. Moreover, there are certain advantages which home treatment will always have over sanatorium treatment. The patient who is treated in a sanatorium, on his return home, must change his habits of life, his home surroundings, often his working place in accordance with the hygienic rules which he has learned at the sanatorium. The patient treated at home makes these changes as he goes gradually, as a part of his cure. The sanatorium patient must seek a new medical adviser on his return home, the home patient is throughout under the same control. Statistics show that relapses after discharge from sanatoria are deplorably frequent owing to the patient's slipping back into his old habits. Sanatorium treatment usually can be given only for a short period of time—three months is the average in the workingmen's sanatoria in Germany—but the treatment of tuberculosis must often be carried on for years.

Now, if home treatment is to be given, part of it must be given in connection with special dispensaries, for many patients can not pay even a small fee for treatment extending over many months and requiring frequent visits to the physician. According to the directory of institutions and societies dealing with tuberculosis which the Tuberculosis Committee of New York has published, there are at present in the United States nineteen special dispensaries for the treatment of tuberculosis, seven of them being in New York City. Only three, however, are reported as offering treatment to patients at hours which will not interfere with their work. Day dispensaries provide fairly well for patients among the working classes who need but few treatments or are incapacitated temporarily and not working, but for consumptives who are in the early stages and who can not cease work without becoming dependent or plunging their families into poverty, the day dispensaries can do little, and the workingman finds that medical treatment is beyond his reach until such a time as he shall have become unable to work, until, that is, the hopeful period of his disease is passed.

Physicians who have charge of consumptives in private practice know that it is necessary to see these patients far more frequently than the disease really demands, for patients of this class need encouragement, sympathy, the feeling that they are not being neglected and constant urging to persistence and to self-control. Working people can have such constant oversight only in a dispensary and in one which has hours adapted to their needs. Such dispensaries should be open from 6:30 to 8:30 in the morning and for an hour or two in the evening. It is also advisable that they be open for certain hours on Sunday, which hours could be set apart for physical examinations, the weekly weighing, the more detailed instructions. This adjustment of the hours to the needs of the patients is the most important feature of dispensary work among the tuberculous poor.

THE INFLUENCE OF DEFECTIVE NASAL BREATHING ON GROWTH AND DEVELOPMENT.

Among the functions subserved by the nares in the respiratory process are the heating of the inspired air and the addition of watery vapor, as well as the filtration of particles of solid matter. If this mechanism be deranged from any cause, infection is likely to take place, with resultant catarrhal disturbances and impairment of hearing in case of extension to the Eustachian tube. If nasal breathing be obstructed, especially in children, only imperfect expansion of the lungs can take place and deformity of the chest results. A certain amount of adenoid tissue is present normally in the nasopharynx of healthy children, but an excess appears to cause effects apart from the obstruction of breathing to which this gives rise. The mouth-breathing child with adenoids not alone presents a dull, stupid look, but it also seems intellectually below the average, and it is usually stunted in general growth. The improvement in all directions following removal of such excessive adenoid tissue is a most striking and convincing phenomenon. In a discussion of this subject in a recent communication Dr. P. Watson Williams[1] emphasizes the physiologic importance of the nose in influencing respiratory activity and the pernicious effect of the absence of the nasal respiration, not alone on account of the commonly recognized results of unwarmed, unmoistened and unfiltered air reaching the lungs, but also from the persistent abrogation of nasal respiratory

1. Bristol Medico-Chirurgical Journal, March, 1906, p. 17.

stimulation. At the same time he does not underestimate the factors responsible for the defective physiologic activity of the respiratory centers in children suffering from enlarged tonsils and adenoids, especially chronic sapremia, causing tissue inactivity and hence absence of the normal need for more rapid respiratory exchanges. Children who persistently fail to expand their lungs fully, or in whom the respiratory exchanges are subnormal, are underfed, for a due supply of inspired oxygen is essential for the utilization of food in the processes of internal respiration. Accordingly, after the removal of abnormal conditions in the nose and throat, it is wise to recommend activity in the open air, cold baths and particularly physiologic drill, comprising appropriate respiratory exercises, in order that the listless, partially asphyxiated child may grow up in the fulness of life.

Medical News

ILLINOIS.

Chicago.

New Hospital.—A small neighborhood hospital, with a capacity of 10 beds, is being erected at 264 and 266 West North Avenue and will be ready to receive patients August 1. It will be under the charge of Dr. Frank H. Booth.

Smallpox.—During the week three cases of smallpox were discovered and the patients removed to the Isolation Hospital. Of these one was a resident of the city, 21 years of age, who had never been vaccinated. The second was a colored woman from Texas, who was in the eruptive state on her arrival in the city. The third was a colored man from Memphis, who was in the fifth day of the eruption, on his arrival. Neither of these had been vaccinated. There are now 11 smallpox patients at the Isolation Hospital. Last year at this time there were 85.

Cocain Sellers Convicted.—Albert Dahlberg, a clerk in the drug store of Adolph C. Brendecke, was fined $200, May 8, for selling cocain illegally. On a similar charge Vincenzo Colletto, a druggist at Polk and Clark Streets, was fined $200. Both cases were prosecuted by the authorities of Hull House. The defendant, Dahlberg, claims to be a graduate of Rush Medical College. Dr. Nicholas Rey, 438 Dearborn Street, was fined $200 and costs on a charge of selling cocain, May 10. The attorney for the State Board of Pharmacy announces that he has submitted testified evidence in two of these cases to the State Board of Health and has asked that the licenses of the physicians in question be revoked.

Mortality of the Week.—During the week ended May 19, 652 deaths were reported, equivalent to an annual mortality of 16.59 per 1,000. This shows a great increase over the mortality of the previous week, 583, and a still greater increase over that of the corresponding week of 1905, which was 539. The three days of misplaced midsummer heat are probably responsible for this increase in death rate, especially among the very young, as during the week 33 more deaths of individuals under 5 years of age were reported than during the week previous. Pneumonia caused 138 deaths; consumption, 68; violence, including suicide, 58; heart diseases, 41; Bright's disease, 39; acute intestinal diseases, 35, and cancer, 32.

INDIAN TERRITORY.

Health Board Election.—At the meeting of the Muskogee Board of Health, April 18, Dr. O. C. Klass was elected secretary and Dr. Claude A. Thompson, chairman.

Smallpox.—The public schools of Holdenville have been closed on account of an epidemic of smallpox which has broken out in the city. The disease is of mild type and there have been thus far no serious cases.

Territorial Medical Association.—At the meeting of the Indian Territory Medical Association, held at South McAlester, March 20, it was voted that the association merge with the Oklahoma Medical Association and that a joint meeting be held at Oklahoma City, May 8, 9 and 10. This action was taken in confirmation of an agreement made ad referendum to that end by a committee appointed at the last regular meeting. It is provided, however, that the merger should be void in case the statehood bill should fail of passage. Dr. Floyd E. Waterfield, Holdenville, was elected secretary, vice Dr. Rufus J. Crabill, resigned.

District Association Meeting.—The Medical Association of the Northern District of Indian Territory met at Pryor Creek, May 1. The president, Dr. William T. Tilly, Pryor Creek, read an able paper on organization, urging all physicians in the district to avail themselves of the advantages to be derived from affiliation with the association. The following officers were elected: President, Dr. William T. Tilly, Pryor Creek; vice-president, Dr. Franklin M. Duckworth, Claremore; secretary and treasurer, Dr. Robert H. Harper, Afton; censors, Drs. Benjamin F. Fortner, Vinita; Charles M. Ross, Tahlequah and W. J. Whitaker, Pryor Creek; and delegates to the Oklahoma and Indian Territory Medical Association, Drs. Benjamin F. Fortner, Vinita, and Franklin M. Duckworth, Claremore. The next meeting will be held at Afton in August.

INDIANA.

Pays Fine.—Dr. Harry R. Spickermon, Muncie, pleaded guilty to a charge of assault and battery preferred against him by Harry Levy, May 9, and paid a fine of $11.

State Board of Health Laboratory.—Dr. T. Victor Keene, superintendent of the laboratory of the State Board of Health, Indianapolis, reports that during the month of April 171 tests were made for tubercle bacilli.

Fails to Secure Endowments.—The Indiana University has been unable to provide the library and laboratory equipment necessary to secure the endowments for pathologic research recently offered it at a joint value of $20,000.

Case Dropped.—The State Board of Medical Registration and Examination, which a short time ago revoked the license of Dr. Nelson B. Ross, Muncie, on the ground of unprofessional practice, was ordered by Judge Leller, on May 3, to revoke the order cancelling the license.

Personal.—Dr. Albert R. Burton, Princeton, underwent operation at St. Mary's Hospital, Evansville, May 4.——Dr. John Williams, Brazil, celebrated his ninety-fourth birthday anniversary, May 9.——Drs. Moses S. Canfield, Frankfort, and William A. Spurgeon, Muncie, have been appointed by the governor to succeed themselves as members of the State Board of Examination and Registration.

Summer Department of Purdue.—The work of the summer school of Purdue University, Medical Department, Indianapolis, will begin May 28 and continue for eight weeks, embracing both laboratory and clinical subjects. Credit of one semester is granted to students who take this course. The work will be as purely practical as possible. The course will be open to all students and graduates of medicine and no tuition fee will be charged.

Councilor District Meeting.—The Eighth Councilor District Medical Society, comprising Madison, Randolph, Blackford, Jay and Delaware counties, was organized at Muncie, May 5. The following officers were elected: Dr. G. W. H. Kemper, Muncie, president; Dr. Jonathan B. Garber, Dunkirk, vice-president; Dr. Maynard A. Austin, Anderson, secretary and treasurer; and Drs. Etta Charles, Summitville, Madison County; Henry C. Davisson, Hartford City, Blackford County; Reuben E. Brokaw, Portland, Jay County; Granville Reynard, Union City, Randolph County, and Winfield S. Brandon, Daleville, Delaware County, censors.

Graduation Exercises.—The annual commencement exercises of the Indiana Medical College, the School of Medicine of Purdue University, were held in Eliza Fowler Hall, Lafayette May 15, when a class of 124 received diplomas. The doctorate address was delivered by Prof. George E. Vincent of the University of Chicago, and Dr. H. McKain was valedictorian. The faculty, student body and friends of the medical department went to Lafayette in a special train chartered by the faculty of the college.——A reception was given May 8 at the sanitarium of Dr. William B. Fletcher, Indianapolis, in honor of the graduating class of Indiana Medical College.——The faculty of the college gave a banquet to the graduating class at the Claypool, May 9, at which Dr. Theodore Potter was toastmaster. Toasts were responded to by President Winthrop E. Stone of Purdue University, Dean Henry Jameson of the local department of the university; Mr. Stewart, president of the board of trustees; Dr. Albert E. Bulson, Fort Wayne, and Drs. Thomas B. Noble, Frank B. Wynn and John H. Oliver, Indianapolis.

LOUISIANA.

Home for Incurables Opened.—The administration office and children's annex of the Home for Incurables, New Orleans, erected at a cost of more than $10,000, were dedicated April 28.

Board Trusts Local Practitioners.—The Louisiana State Board of Health, at its session in New Orleans, April 13, adopted a resolution that "in the event of any report reaching the president of a case of suspicious fever, the committee shall appoint a committee of reputable physicians to investigate the case and accept their report as final."

Smallpox at Munroe.—As a result of the investigation of the smallpox situation in Munroe, Dr. Robert W. Faulke, a member of the board of health, reports that the minimum number of cases is 44, 40 of whom are negroes; that every known exposed person has been vaccinated and that all patients and suspects are being removed to the pest house.

Tulane Graduation.—The seventy-second annual commencement exercises of Tulane University of Louisiana, Medical Department, New Orleans, were held May 3, when a class of 102 received degrees in medicine. The annual report was given by the dean, Dr. Stanford E. Chaille, and the annual address was delivered by Surgeon Joseph H. White, United States Public Health and Marine-Hospital Service.

Personal.—Dr. Charles L. Ramage, Winsboro, has been elected president and executive officer of the Franklin Parish health board.——Dr. and Mrs. Arthur W. De Roaldes left for New York, April 24, on their way to Europe.——Dr. Robert L. Randolph, Alexandria, has been elected a member of the local board of health.——Dr. C. W. Loomis, Lake Charles, was severely burned while endeavoring to extinguish a fire in his office, May 8.

Hospital Alumni Association Meeting.—The Alumni Association of Charity Hospital, New Orleans, held its annual meeting and banquet May 7, at which the following officers were elected: Dr. Eugene H. Walet, New Orleans, president; Dr. Adrian A. Landry, Paincourtville, vice-president; Dr. Narcisse F. Thiberge, secretary, and Dr. E. Loeckert, treasurer. Dr. J. B. Guthrie acted as toastmaster at the banquet. Hon. H. Terriberry responded to the toast "To the Victims," and Dr. Warren S. Bickham, present as the guest of honor of the association, responded to the toast of "The Prodigal Son."

MARYLAND.

Secure Hospital Building.—The managers of the Union Hospital of Cecil County have purchased a residence in Elkton for the proposed institution.

Personal.—Dr. Edward R. Trippe of Easton has been appointed health officer of Talbot County.——Dr. Joseph R. Owens was elected mayor of Hyattsville.——Dr. Jesse W. Downey, New Market, was stricken with paralysis, April 26.

Faculty Will Not Start Journal.—The Medical and Chirurgical Faculty has practically decided not to publish a journal of its own, but to accept the offer made by the *Maryland Medical Journal* with a few slight modifications. The *Journal* has been the official organ of the faculty for the past year.

County Association Election.—The Baltimore County Medical Association has elected the following officers: President, Dr. James H. Jarrett, Towson; vice-president, Dr. William L. Smith, Sherwood; treasurer, Dr. Benjamin Whiteley, Catonsville; recording secretary, Dr. N. R. D. Cox, Arlington, and corresponding secretary, Dr. Richard C. Massenburg, Towson.

Health Board Appointments.—At the semi-annual meeting of the Montgomery County board of health Dr. William L. Lewis, Kensington, was reappointed health officer. The following were appointed vaccine physicians: Drs. H. G. Spurrier, Unity; Vernon H. Dyson, Laytonsville; Horace B. Haddox, Gaithersburg; Augustus Stabler, Brighton; James E. Deets, Clarksburg; Philemon S. Lansdale, Damascus; I. Newton Simpers, Germantown; James H. Stonestreet, Barnesville; Richard T. Gott, Poolesville; Upton D. Nourse, Dawsonville; W. Frawley Pratt, Potomac; C. H. Nourse, Barnestown; Claiborne H. Mannar, Rockville; John L. Lewis, Bethesda; John R. Batson, Spencerville; William T. Brown, Burnt Mills; William L. Lewis, Kensington; Roger Brooke, Sandy Spring; Charles Farquhar, Olney, and F. Green. The vaccine physicians are required to visit the public schools to see that all children are vaccinated. In order to insure complete records of vital statistics, each physician is paid 10 cents for every birth certificate or burial permit. The board of health consists of the county commissioners.

Baltimore.

Milk Exhibit Closed.—The milk exhibit closed May 14, after a week of lectures and demonstrations. It was attended by thousands, as many from out of the city as from within it.

Alumni Meeting.—At the annual meeting of the Alumni Association of the University of Maryland School of Medicine, to be held June 1, Dr. Randolph Winslow, Baltimore, will deliver the oration on "The University in 1871 and 1906."

Suicides.—There were three suicides last week and, according to the weekly reports, 17 suicides in the previous five weeks. It is interesting to note that foreigners predominate. Nearly 60 per cent. were attributable to love; only one of the 17 was colored.

Commencement.—The twenty-fifth anniversary and commencement of the Baltimore Medical College was held May 22. There was a lecture at noon in the assembly room by Prof. Robert W. Johnson on "The Conservative Treatment of Acute Appendicitis." A class of 17 was graduated.

Personal.—Dr. Daniel Z. Dunnott has been appointed surgeon-in-chief of the Western Maryland Railroad.——Dr. Robert S. Kirk has been re-elected superintendent and Dr. John Roth, assistant, at the Baltimore Eastern Dispensary.——Dr. J. W. Baird, assistant in psychology at the Johns Hopkins University, has been appointed to the chair of experimental psychology in the University of Illinois.

Typhoid.—The milk epidemic of typhoid fever, in the northern section of the city, has been causing the health authorities much concern. There have been about 100 cases. Trained nurses have been sent out and the combined efforts of city and state authorities are endeavoring to clear up and arrest the epidemic. Dr. Marshall L. Price of the State Board of Health has been sent out into the country to investigate conditions there. The authorities are disposed to lay the blame on the bad politics in the county. The report of the city health department for the week ended May 19 shows 47 cases of typhoid fever, with only one death.

MASSACHUSETTS.

Personal.—The board of health of Dedham has organized with Dr. Edward W. Finn as chairman.——The board of health of Chicopee has reorganized with Dr. Charles H. Prindle as chairman.——Dr. Perley P. Comey, Worcester, has been appointed lieutenant and assistant surgeon of the Second Infantry, M. V. M., vice Lieut. Thomas B. Shaw, resigned.

Jefferson Graduates Organized.—Graduates of Jefferson Medical College, residing in New England, held a meeting in Boston, May 10, and organized an association to be known as the New England Association of Jefferson Medical College Graduates. The officers of the association are: Dr. Edward L. Parks, Boston, president; Dr. J. Q. Adams McCollester, Waltham, vice-president, and Dr. E. Winfield Egan, Boston, secretary.

Society Meetings.—At the annual meeting of the Essex South District Medical Society, held in Salem, May 8, the following officers were elected: President, Dr. Harry W. Mitchell, Hathorne; vice-president, Dr. Percy C. Proctor, Gloucester; secretary, Dr. George K. Blair, Salem; treasurer, Dr. George Z. Goodell, Salem, and librarian, Dr. Alice M. Patterson, Peabody.——At the annual meeting of the Hampshire District Medical Society, May 11, the following officers were elected: President, Dr. Herbert B. Perry, Northampton; vice-president, Dr. Justin G. Hayes, Williamsburg; secretary, Dr. Arthur G. Minshall, Northampton; treasurer, Alfred H. Hoadley, Northampton, and librarian, Dr. Edward W. Brown, Northampton.——The annual meeting of the Worcester District Medical Society was held May 9, at which the following officers were elected: Dr. David Harrower, president; Dr. Ernest V. Scribner, vice-president; Dr. George E. Emery, secretary; Dr. George O. Ward, treasurer, all of Worcester, and Dr. Jacob R. Lincoln, Milbury, orator.——At the meeting of the Middlesex East District Medical Society, May 9, Dr. Harrison G. Blake, Woburn, was elected president.

"Patent-Medicine" Bill Passed.—The state legislature has passed a bill compelling its manufacturers to publish on the label of any proprietary or "patent" medicine or food preparation the amount of alcohol (if any) which it contains, as well as the quantities of opium or other narcotic. Section 2 states:

> Every package, bottle or other receptacle holding any proprietary or patent medicine or any proprietary or patent food preparation shall bear a label containing a statement of the quantity of any opium, morphine, heroin or chloral-hydrate contained therein, provided that the package contains more than two grains of opium, or more than one-fourth grain of morphine, or more than one-sixteenth grain of heroin, or more than eight grains of chloral-hydrate in one fluid ounce, or, if a solid preparation, in one avoir-

dupois ounce; and the provisions of section nineteen of chapter seventy-five of the Revised Laws shall apply to the manner and form in which such statements shall be marked or inscribed.

Section 3 states:

It shall be unlawful for any person to sell, or to expose or offer for sale, or to give or exchange, any patent or proprietary medicine or article containing cocaine or any of its salts, or alpha or beta eucaine or any synthetic substitute of the aforesaid.

These provisions do not apply to sales made at wholesale, to retail druggists or dental depots, or to physicians, dentists, or regularly incorporated hospitals. This act is to take effect Sept. 1, 1906.

MISSOURI.

Case Dismissed.—In the case of Dr. J. Clement, Kansas City, charged with practicing medicine without a license, the defendant was discharged on the recommendation of the assistant prosecuting attorney, May 2.

Would Enjoin State Board.—Dr. Caleb E. Mathis, Kansas City, appeared before the circuit court at Independence, April 30, and asked for a temporary order restraining the Missouri State Board of Health from revoking his license as a practicing physician.

Licenses Revoked.—The State Board of Health has revoked the licenses of Drs. Charles Palmer, Kansas City, and Mary E. Murphy, St. Louis, charged with criminal practice, and the license of Dr. Earl J. Dennis, St. Louis, charged with allowing another individual to impersonate him.

Personal.—Dr. H. L. Ebert has been reappointed clerk of the Kansas City board of health.——Dr. Albert Vogel has been appointed assistant dispensary physician of the St. Louis board of health.——Dr. and Mrs. John M. Brown, St. Joseph, have returned from Europe.——Dr. and Mrs. Jefferson D. Griffith, Kansas City, have returned after a three months' tour of Europe and Northern Africa.

Commencement Exercises.—The commencement exercises of the University Medical College, Kansas City, were held April 24. The baccalaureate address was delivered by Rev. C. C. Woods, St. Louis, and Dr. James E. Logan, president of the college, conferred degrees on a class of 49.——At the commencement exercises of the St. Louis College of Physicians and Surgeons, April 23, Dr. John C. Murphy delivered the faculty valedictory, and Dr. Waldo Briggs conferred degrees on a class of 56.

Health Board Appointment Held Up.—The committee on sanitation affairs of the St. Louis city council reported unfavorably on the name of Dr. H. McC. Johnson, recommended by Mayor Wells as a member of the local board of health. The committee explained that it was unacquainted with the physician, that he had been given plenty of time to call on the committee, but up to date he had not put in an appearance at any committee meeting. Final decision was deferred until next meeting, giving Dr. Johnson another opportunity to "come around and introduce himself to the committee." Dr. Johnson afterward received the appointment.

NEBRASKA.

Fined for Obstructing Justice.—Dr. James L. Gandy, Humboldt, was found guilty of obstructing justice and fined $500. He has filed notice of appeal.

Governor Requests Resignations.—Governor Mickey on May 8 called for the resignations of Dr. James M. Alden, superintendent of the State Hospital, Norfolk, and Dr. Frank Nicholson, his assistant, on account of friction which, it is claimed, has made it impossible for the institution to be conducted properly.

X-Ray Damage Suit.—In a damage suit at Center in which $6,000 damages were claimed for injuries alleged to have been received while being exposed to *x*-rays for the purpose of obtaining a skiagraph to locate a stone in the bladder, the jury brought in a verdict for the plaintiff, May 6, assessing the damage at $600 and costs.

Personal.—Dr. G. P. Stokes, an instructor in chemistry at Omaha Medical College, was seriously burned about the face and hands by an explosion of gasoline in the laboratory.——Dr. Simon C. Bedde, David City, has been appointed a member of the board of insanity for Butler County.——Dr. Robert C. MacDonald, Fremont, has been appointed local surgeon for the Great Northern System.——Dr. Voorhees Lucas has been made city physician of North Platte.——Dr. L. R. Craig, Mitchell, has been committed to the state asylum under the provisions of the new dipsomanine law.

Itinerant Practitioner Fugitive from Justice. "Dr." W. F. Munroe, an itinerant medicine vendor, calling himself a "Quaker doctor", was arrested in Humboldt, March 31, and trial was set for April 2. A change of venue was taken and the complaint was quashed on an alleged defect. New complaints were made before the county court and a new warrant issued. Thereupon "Dr." Munroe fled precipitately, but was apprehended in a neighboring town and held until service was obtained. He outwitted the officer in whose charge he was placed and escaped, crossing the river to Missouri. As the offense with which he was charged was not extraditable, he escaped by flight a possible fine of $350 and costs.

Hospital Notes.—The Swedish Alliance Home of Mercy and Bethany Hospital Association are raising $25,000 for a new hospital for Omaha, of which Dr. J. O. Nystrom is to be chief surgeon.——The South Omaha Hospital Association, on April 30, formulated plans for the raising of $40,000 for the construction of a new and modern hospital to accommodate at least 40 patients.——The contract for building the Wise Memorial Hospital, Omaha, has been awarded, the contract price being $67,500. The building will be a two-story and basement structure 150x75 feet.——The cornerstone of the Methodist Episcopal Hospital, Omaha, was laid May 24. Bishop Hamlin of San Francisco made an address and the governor of the state presided.

NEW YORK.

No Night Work for Children.—Governor Higgins has signed an amendment to the labor law providing that minors under 16 years shall not be employed in factories or mercantile establishments after 7 o'clock p. m.

Attempt at Arson.—An attempt was made to fire the laboratory of Dr. Edward F. Brush, Mount Vernon, May 13. When the fire was discovered the whole lower floor of the building was found to be saturated with kerosene.

New York City.

Chloroform and Crime.—The Medicolegal Society at its May meeting discussed the possibility of persons facilitating crime by the use of chloroform, and the various phases of the case against Albert T. Patrick were discussed.

Bay Pollution Bill Signed.—Mayor McClellan has signed a bill providing for a commission to consider means for protecting the waters of New York Bay from pollution. The commission will act in conjunction with a similar body from New Jersey.

Personal.—Dr. and Mrs. W. Whitehead Gilfillan and Dr. and Mrs. John G. Perry sailed for Europe on the *Königin Luise*, May 19.—Dr. Emil Heuel gave a dinner on May 16 at the New York Athletic Club in honor of Dr. E. Delgado, minister of foreign affairs of Salvador.

Ambulance Accident.—An ambulance belonging to the Williamsburg Hospital was struck by a street car at Driggs Avenue and South Third Street. The driver received probably fatal injuries and Drs. Rarick and Dangler were incapacitated for service for a considerable time.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended May 12, 1,068 cases of measles, with 32 deaths; 387 cases of diphtheria, with 34 deaths; 340 cases of tuberculosis, with 153 deaths; 56 cases of whooping cough, with 4 deaths; 32 cases of cerebrospinal meningitis, with 32 deaths; 27 cases of typhoid fever, with 9 deaths, and 90 cases of varicella, altogether 2,228 cases, with 294 deaths.

OHIO.

Dr. Haugh to Be Electrocuted.—Dr. Oliver Crook Haugh, convicted of the murder of his parents and brother, has been sentenced to be electrocuted August 29.

Fined for Illegal Practice.—"Dr." D. D. Brice, self-styled "Hindoo witch doctor," was fined $50 and costs in Columbus, May 2, for illegal practice of medicine.

Memorial Meeting.—The Cincinnati Academy of Medicine devoted its regular session of May 14 to memorials of the late Dr. Edward A. Crane, all of the business being relegated to future meetings.

Hospital Staff Election.—At the meeting of the official staff of Aultman Hospital, Canton, the following officers were elected: Dr. J. Frank Kahler, president; Dr. John P. Dewitt, vice-president; Dr. Frank W. Gavin, secretary, and Dr. Alonzo B. Walker, treasurer.

Guilty of Criminal Malpractice.—Dr. David P. Maxwell Cleveland, has been found guilty of performing a criminal operation, which caused the death of Celia Ritzer, Akron, and sentenced to imprisonment for three years in the penitentiary. Execution of the sentence has been suspended for 30 days in order that an appeal may be made to the circuit court.

Dermatological Society.—Dr. Meyer L. Heidingsfeld, Cincinnati, has been elected as the first president of the Ohio Dermatological Society. It was through the efforts of Dr. Heidingsfeld that the society was organized. Dr. E. Otis Smith, also of Cincinnati, was elected treasurer. The society decided to affiliate with the Ohio State Medical Association.

Personal.—Dr. Curtis Marquart, Osborne, is suffering from septicemia, due to a slight abrasion of the skin.——Dr. and Mrs. Charles G. Foertmeyer, Cincinnati, left for Europe May 7. ——Dr. William H. Humphreys, Yellow Springs, is seriously ill with pneumonia.——Dr. Estell H. Rorick, formerly superintendent of the Athens State Hospital and later superintendent of the Ohio Institution for Feeble-Minded, Columbus, has resigned.——Dr. Otto Huffman has been appointed pathologist of the Miami Valley Hospital, Dayton.——Dr. Nellis C. Satterlee, West Williamsfield, who recently underwent a grave surgical operation at Cleveland, is making a satisfactory recovery.——Dr. Fred A. Cobb has been appointed physician of the Toledo Workhouse, vice Dr. William V. Anderson.——Dr. John B. Kotheimer, Youngstown, has been seriously ill with heart disease.—Dr. Edward A. Montenyohl, Akron, has been elected first vice-president of the Ohio Dermatological Association.——Dr. Millard F. Hussey, Sidney, has been appointed a member of the board of trustees of the Lima State Hospital.

Commencement Exercises.—The fifty-ninth annual commencement exercises of Starling Medical College, Columbus, were held May 3. Attorney-General Wade H. Ellis made the address of the evening, and Dr. O. W. Huntington, president of the board of trustees of the college, presented the diplomas to a class of 30.——Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University, held its annual commencement exercises May 2, when addresses to the graduating class were given by Dr. Roland E. Skeel, dean of the college, Rev. Worth M. Tippy and Rev. Herbert Welsh, president of the university. A class of 24 was graduated.—— The fourteenth annual commencement exercises of the Ohio Medical University, Columbus, were held May 1. The principal address was delivered by Rev. J. Knox Montgomery, D.D., president of Muskingum College. Dr. William S. Van Fossen delivered the faculty address, and Prof. W. R. Lazenby, secretary of the board of trustees, conferred degrees on a class of 42. Dr. James U. Barnhill, chancellor of the university, presided.——The annual commencement of the Toledo Medical College was held May 13. President Charles W. Dabney, of the University of Cincinnati, delivered the principal address, on "Municipal Universities," and a class of 9 received diplomas.

PENNSYLVANIA.

Fever-Breeding Parasites Must be Destroyed.—It is the purpose of Health Commissioner Dr. Dixon to destroy the breeding places of mosquitoes in this commonwealth. The task will involve the examination of all places holding or capable of holding water in which the species can breed. Dr. Dixon has employed an expert entomologist to take up the work and map out all the malarial districts in the state. The report of the entomologist will give all conditions supplying the environment necessary to support the lives of the variety of mosquito which carry the poison from one person to another. That this work shall prove most economic, it is proposed that the country surrounding the larger centers of population be investigated and the most dangerous pools and streams be mapped out, starting with the built-up municipalities in the southern part of the state, where malaria is most prevalent. For the purpose of mapping the breeding places it is proposed that the United States geological survey maps be used.

Alienists' Meeting.—The meeting of the Association of Trustees and Physicians of State and Incorporated Hospitals for the Insane of Pennsylvania was held in the Pennsylvania Hospital for the Insane, May 17. Alienists from all parts of the state were present, and both the "county care" and "state care" systems were advocated by the speakers. Dr. John B. Chapin, superintendent of the Pennsylvania Hospital for the Insane, and Thomas C. Zimmerman, trustee of the Wernersville Hospital for the Insane, supported the state institution idea, while Cadwallader Biddle of the board of public charities favored "county care." Dr. Chapin read a paper on "The Care of the Indigent Insane in Pennsylvania." He said without being moved by our sympathies or emotions, it were well if some general agreement could be reached concerning the indigent insane. He would urge that the care of the insane be distinct and separate from that of the county poor who are not insane. He said that it is right to ask that the insane shall be regarded as subject to a condition of disease for which they should be placed under the care of physicians and not so-called wardens or keepers, who are often selected and changed solely according to the dictates of public opinion and not for any special fitness.

The School Vaccination Law.—The State Department of Health is much gratified over the opinion filed by Chief Justice Mitchell in disposing of the famous Waynesboro vaccination case. The people of Waynesboro openly defied the state authorities and, to a certain degree, prevented the enforcement of the vaccination law. The action was followed by litigation which was finally carried up to the supreme court. This tribunal not only sustained the right of the state health board to exercise police powers, but the opinion of Justice Mitchell takes a much wider sweep concerning the value of the statute, which requires that school children must be vaccinated before they shall be admitted to the public schools. The supreme court ruled that the act of 1895 requiring the exclusion from the public schools of children who have not been vaccinated, is a valid exercise of the police power of the state. Chief Justice Mitchell observed that the vast preponderance of opinion among intelligent and educated people is that vaccination is a highly useful ameliorative, if not always a preventive of one of the greatest diseases that has in times past afflicted humanity, and that the regulation of it by statute is not only justifiable, but a wise and beneficent exertion of the police power over the public health. It was emphasized by the Waynesboro contestants that there had been no smallpox in the community for 40 years and that, consequently, the people should not be required to provide by vaccination against possible occurrence of an epidemic. Concerning this Justice Mitchell stated that immunity for 40 years in the past affords no guaranty of immunity for even 40 days in the future, if a chance visitor from an infected locality or a borough resident returning from a visit to such a locality, should bring with him the germs of infection.

Philadelphia.

Bequests.—By the will of the late Laura V. Morrell, the Children's Hospital and the Methodist Hospital each receive $250.

Duehrssen Here.—Prof. Dr. Dührssen, the eminent surgeon, Berlin, Germany, visited this city May 19 and was entertained by Dr. Charles P. Noble.

Hospital Receives New Ambulance.—The Frankford Hospital has received and has put in commission the new ambulance donated by Mrs. Robert H. Foerderer.

Officers Elected.—At the organization meeting of the Northwest Branch of the Philadelphia County Medical Society, May 8, the following officers were elected: Chairman, Dr. Morris J. Karpeles, and clerk, Dr. Howard F. Geisler.

Personal.—Dr. and Mrs. George Fales Baker have returned home from Europe.——Drs. Hiram R. Loux and Robert O. Kevin sailed for Europe, May 19.——Dr. John H. Musser has been selected to deliver the oration on medicine before the Wisconsin State Medical Society, which meets in Milwaukee, June 27.

Examination Notices.—Civil service examinations by the civil service commission men will be conducted on the following dates for the positions named: Superintendent of Philadelphia Hospital, $3,000 a year; chief resident physician of Philadelphia Hospital, $4,000 a year; examination, May 28. Assistant chief resident physician, Municipal Hospital, $800 a year; outdoor physicians, allopathic, for district work, $360 a year; assistant chief resident physician, Philadelphia Hospital, $900 a year; assistant physicians, insane department, Philadelphia Hospital, $1,000 and $800 a year; examination, May 29. Instructor in massage, Philadelphia Hospital, $500 a year; examination, June 1. Milk inspectors, $1,020 a year; examination, June 4.

Health Report.—The total number of deaths reported for the week reached 567. This is an increase of 75 over the number reported last week, and an increase of 111 over the number reported in the corresponding week of last year. Tuberculosis of the lungs alone caused 76 deaths, the largest number in any week in five years. The death rate from typhoid fever was also large, the deaths numbering 31. The principal causes of death were: Measles, 4; scarlet fever, 4; pertussis, 12; diphtheria, 13; meningitis, 3; cancer, 23; apoplexy, 25; heart disease, 55; acute respiratory disease, 73; enteritis, 25; nephritis, 54; premature birth, 14; suicide, 3; accidents, 18, and marasmus, 7. There were 428 cases of contagious disease reported, with 48 deaths, as compared with 414 cases and 36 deaths in the previous week.

SOUTH CAROLINA.

Change of Location.—The office of publication of the *Journal of the South Carolina Medical Association* has been changed from Charleston to Greenville. Dr. J. Wilkinson Jervey is now editor of the *Journal*.

Specialist Acquitted.—In the case against "Dr." I. E. Crimm, Spartanburg, who was charged by the representative of the Spartanburg County Medical Association with violating the state statutes by practicing medicine without having been previously licensed, the magistrate on May 11 decided that the prosecution had failed to make out its case and discharged the defendant.

VIRGINIA.

Meningitis.—It is reported that Franklin, Va., is suffering from an epidemic of meningitis.

Memorial Tablet Unveiled.—A memorial tablet to the late Dr. W. A. Lyne, Jr., was unveiled at the Medical College of Virginia, May 15. An address was made by Dr. G. H. Bowman, representing the adjunct faculty of the college, of which Dr. Lyne was a member.

Semicentennial of Hospital.—St. Vincent's Hospital, Norfolk, celebrated its semicentennial, May 15. Among the distinguished guests were Cardinal Gibbons, Dr. Virgil P. Gibney, New York City; ex-Governor Montague of Virginia, and Dr. J. Allison Hodges, Richmond.

Commencements.—The University College of Medicine, Richmond, conferred degrees on a graduating class of 18, May 17. Dr. Stuart McGuire, president, gave the faculty address and Hon. St. George Tucker was the orator of the evening.——The commencement exercises of the Medical College of Virginia, Richmond, were held May 16; a class of 44 received diplomas.

Personal.—Dr. Otho C. Wright, Jarratt, has been appointed director of the Eastern State Hospital, Williamsburg.——Dr. Henry L. Cabell, Cedarville, is critically ill at a hospital in Winchester.——Dr. Walter A. Plecker, Hampton, has been reappointed health officer of Elizabeth City and County, and Drs. Harry D. Howe, Hampton, and George W. Vanderslice, Phoebus, have been made members of the board.——Dr. James H. Garlick, Petersburg, has been elected a member of the medical staff of the Western State Hospital, Staunton.

WISCONSIN.

Found Insane.—Dr. William H. Rowe, Waukesha, was adjudged insane in the county court, April 26, and committed to the Northern Hospital at Oshkosh.

License Refused. The State Board of Medical Examiners has refused to grant license to practice medicine to Dr. Edward Newton Flint, because the applicant admitted in his application that he advertised.

Autopsy Worth More Than Ten Dollars.—Judge Fruit has handed down a decision setting aside the action of the Monroe County board in cutting down the bills of Drs. J. Simonson and Charles E. Quigg for performing an autopsy from $50 to $10 each.

The Afflicted.—Dr. Morton K. Green, physician at the Mendota State Hospital, is suffering from appendicitis.——Dr. John R. Minahan, Green Bay, was operated on for appendicitis, March 27.——Dr. Matthew S. Hosmer, Ashland, is critically ill with septicemia.

Report Accidents.—The physicians of Milwaukee are complying with the law passed last year, requiring a report to the health department of every accident which results in incapacitating the injured from pursuing his vocation for two weeks or longer. An average of 175 cases a month has been reported thus far this year.

Seize "Patent Medicine." Under instructions from the United States revenue department, two United States marshals visited a store in Odanah, on the Red River Indian Reservation, and confiscated hundreds of bottles of patent tonics and preparations containing alcohol. The seizure was made under the law which prohibits the sale of liquor on Indian reservations.

Commencement.—The thirteenth annual commencement exercises of the Wisconsin College of Physicians and Surgeons, Milwaukee, were held May 16. Rev. James C. Hodgins delivered the baccalaureate address, and Dr. A. Hamilton Levings conferred diplomas on a class of 15. At the annual banquet, which was held at the Republican House, Dr. Gustave A. Kletzsch presided as toastmaster.

Joint Meeting.—At a joint meeting of the Northwestern Wisconsin Medical Association and the Portage County Medical Society, April 17, the following officers were elected: Dr. Karl W. Doege, Marshfield, president; Dr. Daniel R. Freeman, Colby, vice-president; Dr. Carl von Neuport, Jr., Stevens Point, secretary and treasurer, and Drs. Levi H. Pelton, Waupaca, George M. Steele, Oshkosh, and Douglas L. Sauerhering, Wausau, censors.

Get License to Practice.—Dr. R. A. Burg, who was refused a diploma and license to practice by the State Board of Medical Examiners on the ground that he was deficient in preliminary education and asked for a writ of mandamus, directing the Milwaukee Medical College and State Board to issue a diploma and license, has had the case decided in his favor by the supreme court and a diploma and license to practice have been granted. The same decision affects six other graduates of the college.

Personal.—Dr. Chester M. Echols, Appleton, has moved to Milwaukee.——Dr. and Mrs. Alexander C. Fraser, Manitowoc, celebrated the twenty-fifth anniversary of their wedding, May 4.——Dr. J. Nicephore Aubin, mayor of Peshtigo, has resigned. ——Dr. and Mrs. William H. Judd, Janesville, have returned after a trip to Cuba.——Dr. Gerhard A. Bading has been appointed health officer of Milwaukee.——Dr. John F. Farr has been elected health officer of Eau Claire.——Dr. Lawrence H. Prince, for many years physician in charge of the Palmyra Springs Sanitarium, has gone to Madison, where he will engage exclusively in surgical work. Dr. Searle succeeds him at the sanitarium.

Tuberculosis Exhibit.—Extraordinary popular interest has been aroused in Milwaukee by the tuberculosis exhibit, which was open to the public from May 3 to 19 inclusive, under the auspices of the National Association for the Study and Prevention of Tuberculosis and the tuberculosis commission of the Milwaukee County Medical Society. The collection included the extensive traveling exhibit of the former society and the pathologic collection of the state veterinary, Milwaukee health department, Milwaukee County Hospital and Milwaukee Medical Society. Models and plans for the proposed pavilion for the Milwaukee County Hospital and County Insane Hospital, and plans for the proposed sanitarium for tuberculosis, to be erected at Wales, Waukesha County, were also on exhibition. Popular lectures were given every afternoon by local physicians, and altogether 65,000 people visited the exhibition.

CANADA.

Personal.—Dr. Don. Armour, Toronto University, 1894, and for some time senior demonstrator of anatomy at Rush, has been appointed senior assistant surgeon in the National Hospital, London, Eng.——Dr. A. H. Tuerner of Milton, Ont., has been appointed medical superintendent of the Vancouver General Hospital.

Hospital News.—Grace Rescue Hospital, recently erected by the Salvation Army in Winnipeg, was formally opened May 15. ——Increased accommodation has recently been provided at the Toronto Free Consumption Hospital, which treats advanced cases of the disease. Plans are executed for two other cottages soon to be gotten under way.——The quarterly meeting of the governors of the Montreal General Hospital was held April 15. During the first three months of the present year the hospital treated 751 patients. Fifty-two deaths occurred. The outdoor work showed an increase of 672 consultations over the corresponding quarter of last year.——The Toronto Emergency Hospital, which was established eight years ago, has been closed.——Lord Strathcona has donated $25,000 to the Alexandra Hospital for Contagious Diseases, Montreal and $200 to a new hospital at Virden, Man. ——The Montreal Dispensary treated 19,195 patients during the past year. Of these cases 9,077 were general diseases; 2,366 diseases of the eye and ear; 1,333 diseases of women; 671 diseases of the nose and throat; 2,771 diseases of the skin; 2,827 diseases of children, and 210 dentistry cases.——The Alexandra Hospital, Montreal, will be ready for occupation in ten days. The medical superintendent, Dr. J. C. Fyseche, has just returned from Boston. Appointments to the staff have been made as follows: The three representatives from the Montreal General Hospital are Drs. Blackader, Latleur and H. D. Hamilton; from the Royal Victoria Hospital, Drs. C. F. Martin, W. F. Hamilton and Beckett; from the Western Hospital, Drs. McConnell and Grant Stewart.

SAN FRANCISCO.

Devise Means for Relief.

Nearly 500 members of the medical profession attended the meeting held May 10 in the auditorium of Cooper Medical College, San Francisco, to devise means for assisting licensed practitioners who lost their homes, offices, books, records and instruments in the earthquake and fire. A resolution was passed asking the San Francisco County Medical Society to reduce its dues to a nominal sum for the next year and to allow all licensed physicians an opportunity of becoming members. A representative from the Santa Clara County Medical Society thanked the assembly for its offer of aid, and said that he was delegated to offer what services he could on behalf of the organization.

Relief Fund.

The California medical relief fund in St. Louis amounts to $908.——Members of the Pasadena Branch of the Los Angeles County Medical Society have thus far contributed $145 toward the relief of their San Francisco brethren.——Smith County (Texas) Medical Society has collected $8 for the San Francisco physicians.——Columbia County (Pa.) Medical Society, at a recent meeting, decided that as a society it would contribute to the relief of San Francisco physicians.——The Southwestern Kentucky Medical Society, at its meeting, May 8, contributed $100 for the San Francisco sufferers.——The Oklahoma and Indian Territory Medical Association, at its meeting May 9, contributed $100 for the San Francisco physicians.——Lehigh County (Pa.) Medical Society has donated $25 to the San Francisco fund.——The Grand Forks (N. D.) District Medical Association has voted $100 for the relief of the practitioners of San Francisco.——At the meeting of the Ohio Medical Association, May 9, aid was voted to the San Francisco sufferers.——The Medical Club of Brooklyn has voted $100 to be sent to the relief of the practitioners of San Francisco, and individual members of the club have contributed an additional $400.——The McLean County (Ill.) Medical Society on April 25 sent a contribution of $90 to Dr. Devine, representative of the American Red Cross, requesting it to be turned over to the proper officers of the Medical Society of San Francisco.

Hospital News.

St. Mary's Hospital, San Francisco, is to be rebuilt, but on a new site. The patients in this hospital were saved by being transferred to a river steamer, and then provided with accommodations in tents on vacant pieces of land owned by the hospital.——At a meeting held May 9, the Agnews Hospital board of trustees resolved to ask the governor for special aid through legislative enactment for sufficient money to put the hospital in condition necessary to meet the present exigencies.

CALIFORNIA RELIEF FUND.

The committee, the complete list of which we printed last week, representing the medical profession of San Francisco, the county and state societies, Thomas W. Huntington, chairman, and Emmet Rixford, treasurer, will not only attend to the receipt and proper distribution of funds, but will gladly receive books and instruments as well. Considerably more than half the physicians of San Francisco lost their medical libraries and all of their instruments and office equipment. The necessity of providing essential instruments as soon as possible will be apparent, and the secretary of the state society, too, has asked all who may be able to contribute from their stock of instruments, to send what they can spare to the relief committee. Shipments should be made to Dr. Emmet Rixford, Lane Hospital, corner of Webster and Clay Streets, San Francisco. The more generally used reference books will also be very welcome contributions. As soon as possible the library of the county society is to be re-established and the donations of journals and medical books of all sorts will be gladly received.

Pennsylvania.

The following amounts have been contributed by the physicians of Pennsylvania:

Philadelphia County Medical Society	$ 200.00
Contributions by individual members in addition to the above	1,136.00
Adams, Charles T.	$ 2.00
Allen, Francis O.	15.00
Allis, Oscar H.	$ 5.00
Anders, James M.	20.00
Anonymous	$ 1.00
Anonymous	1.00
Babcock, W. Wayne	3.00
Barnes, Charles S.	1.00
Bland, B. B.	5.00
Bliss Arthur A.	25.00
Bold, Valentine	5.00
Bournonville, A. C.	25.00
Bradley, William N.	5.00
Brady, Franklin	25.00
Brubaker, Robert A.	5.00
Buckby, Nelson	5.00
Buchanan, S. A.	3.00
Cash	2.00
Cameron, J. Lawson	25.00
Cameron, Lizzie Van Dusen	50.00
Chapin, John B.	5.00
Cleeman, Richard A.	10.00
Cleveland, T. M.	5.00
Cryer, M. H.	5.00
Currie, T. R.	5.00
Denver, John B.	50.00
Dereum, F. X.	20.00
DeYoung, A. H.	5.00
Dick, John W.	10.00
Downs, Thomas A.	5.00
Eaton, Albert M.	10.00
Embrey, Frank	5.00
Eshner, A. A.	5.00
Farley, Joseph	5.00
Farr, C. B.	2.00
Fenton, Thomas H.	20.00
Fox, Charles W.	25.00
Fox, Herbert	10.00
Freeman, Walter J.	25.00
Friebis, George	5.00
Gibbs, Joseph H.	10.00
Given, Ellis E. W.	5.00
Godfrey, H. G.	5.00
Haig, Charles R., Jr.	5.00
Hamilton, William T.	2.00
Hare, H. A.	20.00
Randenbush, J. S.	10.00
Herchelroth, J. C.	10.00
Hirsh, A. B.	10.00
Hollingsworth, I. W.	5.00
Holmes, E. B.	5.00
Johnson, W. N.	5.00
Karpeles, Dr.	5.00
Keeler, J. Clarence	5.00
Kelly, A. J.	5.00
Kercher, D. E.	5.00
Krug, J. A.	2.00
Knowles, G. A.	5.00
Klepp, E. L.	10.00
Longaker, Daniel	$ 5.00
Lutz, H. L.	2.00
McCracken, G. Y.	5.00
Makuen, G. Hudson	5.00
Martin, Collier F.	10.00
Mills, Charles K.	25.00
Mills, H. B.	5.00
Moore, E. J.	5.00
Moorehead, W. W.	5.00
Morrison, William H.	5.00
Moss, William	5.00
Muller, Andrew B.	10.00
Newmayer, S. W.	2.00
Pennock, Edward	5.00
Penrose, Charles B.	100.00
Picard, Henry L.	2.00
Ravenel, M. P.	5.00
Rehfuss, E. G.	10.00
Risley, Samuel D.	25.00
Roberts, John B.	20.00
Schamberg, Jay F.	10.00
Schneideman, Theodore B.	5.00
Scott, J. Allison	5.00
Scott, S. H.	2.00
Scull, William B.	10.00
Seltzer, Charles M.	5.00
Service, Charles A.	10.00
Shea, W. K.	5.00
Sinclair, John F.	5.00
Seiss, Ralph W.	20.00
Slocum, H. A.	5.00
Solis-Cohen, J.	25.00
Solis-Cohen, M.	5.00
Solis-Cohen, S.	10.00
Somers, Lewis S.	5.00
Spiller, William G.	10.00
Stalberg, Samuel	2.00
Stokes, Martha E. (through Dr. J. H. Musser)	25.00
Strobel, John	5.00
Taylor, Charles F.	10.00
Thomas, W. Hersey	5.00
Turnbull, Charles S.	5.00
Turner, J. B.	10.00
Tyson, James	5.00
Wadsworth, W. S.	5.00
Walsh, Joseph	3.00
Wehner, W.	5.00
Welch, William M.	5.00
Wells, P. Farley	5.00
Wentz, B. F.	2.00
Wilson, J. C.	20.00
Willson, W. R.	5.00
Wood, George B.	10.00
Wood, George B.	2.00
Zimmerman, W. M.	25.00

Center County Medical Society, $35.00:

Allison, J. R. G.	2.00
Brunchi, H. S.	2.00
Christ, T. S.	1.00
Dale, J. Y.	10.00
Frank, George F.	2.00
Harris, Geo. F.	5.00
Hayes & Dale	10.00
Huff, S. M.	2.00
Robinson, John I.	1.00

Columbia County Medical Society, $38.00:

Altmiller, C. F.	5.00
Bowman, J. H.	1.00
Brown, J. J.	2.00
Bruner, J. W.	5.00
Davis, E. L.	1.00
Davis, R. O.	1.00
Follmer, J. B.	1.00
Gardner, B. F.	5.00
Hensyl, W. C.	1.00
John, J. S.	1.00
Kline, L. B.	1.00
McCrea, A. B.	1.00
Miller, R. E.	1.00
Montgomery, J. B.	2.00
Reagon, G. L.	2.00
Pfahlin, J. F.	1.00
Redeker, F. W.	2.00
Rhoades, J.	1.00
Sharpless, B. F.	1.00
Shuman, A.	1.00
Stick, S. T.	1.00
Vastine, J. M.	1.00

Fayette County Medical Society, $30.50:

Batton, J. A.	2.00
Edie, Elliott	1.00
Evans, G. O.	1.50
Gordon, J. W.	2.00
Gribble, R. T.	5.00
Larkin, P. A.	2.00
McClenatan, J. C.	10.00
Smith, E. H.	5.00
Sturgeon, J. D.	2.00

Clinton County Medical Society	55.00
Dauphin County Medical Society	50.00
Ellenberger, J. W., Harrisburg	10.00
Franklin County Medical Society	10.00
Lancaster City and County Medical Society	100.00
Lehigh County Medical Society	25.00
McKean County Medical Society	25.00
Mifflin County Medical Society	10.00
Northern Medical Association	45.00
Obstetrical Society, Philadelphia	100.00
Susquehanna County Medical Society	12.00
Thompson, Benjamin, Landenberg	5.00
Vinton, C. H., Wernersville, Pa.	5.00
Warren County Medical Society	25.00

The following additional contributions have been received up to 9 o'clock, Wednesday morning, May 23:

INDIVIDUAL CONTRIBUTIONS.

Baker, V. A., Adrian, Mich.	$ 1.00
Brundage, M., Shelby, Idaho	3.00
Chance, H. C., Cumberland Gap, Tenn.	2.00
Elmhorn, Max, New York City	50.00
Fonde, G. H., Mobile, Ala.	5.00
Fowler, W. W., Ballinger, Texas	1.00

Goddard and Graham, Boyce, Texas	$ 2.00
Graigheads, William, Boulder, Colo.	1.00
Hardy, J. J., Sutter, Ind. Ter.	2.50
Higgins, J. E., North Loup, Neb.	1.00
Leo-Wolf, Carl G., Niagara Falls, N. Y.	5.00
Lewis, James N., Ashaway, R. I.	5.00
Peck, Charles G., Covington, Ky.	5.00
Physician, Saranac Lake, N. Y.	15.00
Physicians of Memphis, Tenn.	123.60
Pitta, J. C., New Bedford, Mass.	5.00
Rosenkraus, J. H., Hoboken, N. J.	5.00
Schill, F., Jr., Johnstown, Pa.	2.50
Sutton, M. R., Clayton, Mich.	1.00
Town, L. S., Geneva, Mich.	1.00
Tucker, W. Q., Crow Agency, Mont.	1.00

SOCIETY CONTRIBUTIONS.

Adams County (Miss.) Medical Society	25.10
Allen County (Kan.) Medical Society	8.00
Carroll County (Ga.) Medical Society	5.00
Chemung County (N. Y.) Medical Society	50.00
Ellis County (Texas) Medical Society	10.00
Essex South District, Lynn, Mass.	5.00
Franklin District (Mass.) Medical Society	50.00
Glassboro (N. J.) Physicians' Association	5.00
Grand Forks District (N. Dak.)	100.00
Huntingdon (Pa.) Medical Society	10.00
Huntington County (Ind.) Medical Society	10.00
Oklahoma State Medical Association	100.00
Pike County (Ohio) Medical Society	25.00
Richmond (Va.) Academy of Medicine and Surgery	100.00
Western District (Ind. Ter.) Medical Society	25.00

Anderson County (Texas) Medical Society, $33.00:

Converce, E. V.	$1.00	Maan, F. B.	$1.00
Dunn, R. M.	1.00	Mackey, W. B.	1.00
Dupuy, A. G.	1.00	McLeod, R. H.	1.00
Evans, J. H.	1.00	Megaughy, J. C.	1.00
Hatchcock, A. L.	2.00	Parks, J. M.	1.00
Howard, G. R.	1.00	Parsons, E. B.	1.00
Jamison, W. G.	1.00	Paxton, J. H.	1.00
Lace, L. A.	1.00	Payner, I. P.	1.00
Link, E. W.	10.00	Petty, J. H.	1.00
Link, H. R.	5.00		

Morgan County (Ill.) Medical Society, $33.00:

Adams, A. L.	2.00	Hairgrove, J. W.	5.00
Baker, E. F.	5.00	Milligan, Josephine	5.00
Black, Carl E.	5.00	Norbury, Frank P.	5.00
Campbell, H. C.	1.00	Norris, F. A.	1.00
Cole, Charles	1.00	Reid, D. W.	2.00
Duncan, W. P.	1.00		

Platte County (Mo.) Medical Society, $7.00:

Chastain, C. H.	1.00	Naylor, A.	1.00
Coffey, G. C.	1.00	Redman, S.	2.00
Hale, J. M.	2.00		

Santa Cruz County (Ariz.) Medical Society, $25.00:

Chenoweth, W. F.	5.00	Noon, A. H.	5.00
Gastetter, A. L.	5.00	Purdy, H. W.	5.00
Nicholson, John L.	5.00		

Wabash County (Ill.) Medical Society, $13.00:

Bucholtz, —	1.00	Maxwell, J. R.	1.00
French, A. D.	1.00	McIntosh, S. T.	1.00
Inskeep, J. E.	1.00	Reed, Dr.	1.00
Kingsbury, G. C.	1.00	Schreck, J.	1.00
Lescher, L. J.	1.00	Schreck, S. W.	1.00
Manley, P. G.	1.00	Utter, Charles	1.00
Manley, R. S.	1.00		

Chicago Medical Society (additional), $47.00:

Cary, Frank	25.00	Hughes, J. O.	10.00
Chvatal, J. F.	2.00	McMartin, B. R.	10.00

Total	$ 923.70
Previously acknowledged	6,691.20
Pennsylvania fund	1,916.50
Grand total	9,531.40

GENERAL.

National Confederation of State Medical Examining Boards.—This association will hold its annual convention in Boston, June 4. The address of welcome will be delivered by Dr. Walter P. Bowers, Clinton, on behalf of the Massachusetts Board of Registration in Medicine. Members and ex-members of state medical examining boards, and physicians and educators who are interested in the cause of higher education, are invited to attend.

Railway Surgeons' Meeting. The surgeons of the St. Joseph & Grand Island Railroad held their annual meeting in St. Joseph, Mo., May 3. Dr. George C. McKnight, Hiawatha, Kan., was elected president; Dr. Charles H. Suddarth, Smithville, Mo., vice-president, and Dr. Luther V. Todd, St. Joseph, secretary and treasurer. The next meeting will be held at Hiawatha, Kan., in November.

American Therapeutic Society.—At the seventh annual meeting of this society, held in New York City, the following officers were elected: President, Robert Reyburn, Washington, D. C.; vice-presidents, Joseph E. Janvrin, New York, Frederick H. Gerrish, Portland, Maine, Howard van Rensselaer, Albany, N. Y.; secretary, Noble P. Barnes, Washington, D. C.; treasurer, John S. McLain, Washington, D. C. The next meeting of this society will be held in Washington, May 4-7, 1907.

American Climatological Society.—At the twenty-third annual meeting of this Association, held at Atlantic City, May 12-14, the following officers were elected: President, Thomas Darlington, New York; vice-presidents, Frank Fremont Smith, Washington, D. C., and C. L. Minor, Asheville, N. C.; secretary and treasurer, Guy Hinsdale, Hot Springs, Va. Dr. E. L. Trudeau, Saranac Lake, and Dr. Leonard Weber, New York, were elected honorary members. The next meeting will be held in Washington, D. C., in May, 1907.

American Academy of Medicine.—The thirty-first annual meeting of the American Academy of Medicine will be held at the Hotel Brunswick, Boston, June 2 and 4, immediately preceding the session of the American Medical Association. The president, Dr. Donly C. Hawley, Burlington, Vt., will deliver an address on "Heredity and Environment as Causes of Delinquency and Crime." At the Monday session a symposium will be held on the subject, "How May the Medical and Teaching Professions Co-operate to Improve the Moral, Mental and Physical Conditions of the Young?"

Pathologists and Bacteriologists Meet.—The American Association of Pathologists and Bacteriologists met in Baltimore, May 18 and 19. There were about 100 in attendance. The meeting was held at the Johns Hopkins Medical School. The next meeting will be held at Washington. The following officers were elected: President, Dr. William H. Welch, Baltimore; vice-president, Dr. Alfred S. Warthin, Ann Arbor, Mich.; secretary, Dr. Harold C. Ernst, Boston; treasurer, Dr. H. U. Williams, and council, Drs. Richard M. Pearce, Albany, N. Y.; James Ewing, New York City; Frank B. Mallory, Boston; Ludvig Hektoen, Chicago, and William T. Howard, Jr., Cleveland.

Association of Medical Officers of the Army and Navy of the Confederacy.—The ninth annual meeting of this organization was held in New Orleans, April 25-26, the president, Dr. Charles H. Todd, Owensboro, Ky., in the chair. Dr. Ernest S. Lewis, New Orleans, delivered the address of welcome, in which he alluded in eloquent terms to the work of the Confederate surgeons in saving lives on the field of battle and in preserving them for service in the ranks. Dr. Charles W. P. Brock, Richmond, Va., responded on behalf of the guests. The following officers were chosen to serve during the ensuing year: President, Dr. Ernest L. Lewis, New Orleans; vice-presidents, Drs. Robert Y. Rudicil, Tryon Factory, Ga.; William F. Beard, Shelbyville, Ky.; Dr. Thomas E. Pruett, Tennessee, and Dr. James D. Croom, Maxton, N. C.; secretary and treasurer, Dr. Deering J. Roberts, Nashville, Tenn. (re-elected).

Plague-Infected Rats in Manila.—Dr. Heiser, chief quarantine officer, reports that for the first time in over a year plague-infected rats have been found in Manila. The rodents so far found to be infected were obtained from the district of Binondo in the Chinese quarter. The bureau of health is having the infected district thoroughly cleansed and disinfected. Rat catchers have been employed for the purpose of ridding that section of its rats so far as possible, and also for the purpose of ascertaining the extent of the disease among them. No cases of human plague have occurred in that particular district for nearly two years, and that locality has never been classed among those sections of the city most likely to be infected. If the views with regard to rat plague expressed by the leading Japanese medical authorities are correct, Dr. Heiser states that there should be an outbreak of human plague in the district of Binondo in from six weeks to two months.

FOREIGN.

Directorship of Senn Laboratory in Siam.—Dr. Paul G. Woolley, formerly of the Government Laboratories, Manila, P. I., has assumed the directorship of the Siamese Government Senn Laboratory, which is located at Phrapatom.

The Virchow Statue.—The design for the memorial to Rudolf Virchow at Berlin which won the first prize represents a titan struggling with a sphinx. This portrays the struggle between Virchow, the giant of science, and the riddle of the origin of disease. The bronze group stands on a marble pedestal which bears Virchow's portrait in a bronze relief.

International Conference of Red Cross Societies.—The *British Medical Journal* announces that arrangements have been completed for the third international conference of the societies of the Red Cross at London, June 10, 1907. These conferences are held every five years. The first was held at Vienna in 1897, when 184 delegates were present, and the second at St. Petersburg in 1902, with 132 delegates.

Hospital Ships.—It is reported that an English syndicate is being formed in Austria for the purpose of building a fleet of hospital ships to cruise in the Adriatic Sea, as that climate is supposed to be unusually beneficial to invalids. Each ship will have accommodations for 180 patients. The voyages will not follow any prearranged routes, but will be directed only with regard to the most favorable climatic conditions.

Tilanus Medal Awarded to Bolks.—The Amsterdam correspondent of the *Wiener klin. Rundschau* for April 29 states that the gold Tilanus medal was given this year to Professor Bolks for his researches in anatomy. He is one of the younger set, and has been professor of anatomy at Amsterdam for a few years. His most important work has been the supplying of a morphologic basis for Sherrington's theory of physiologic segments. The medal in question was founded by the local medical society in memory of C. B. Tilanus, the eminent surgeon. It is awarded every fifth year for special achievements in surgery or the allied sciences.

Insurance Against Professional Infection with Syphilis.—The Breslau Dermatological Society has taken up this question and is seeking information as to the way in which insurance societies are treating their medical policy-holders who contract syphilis in the practice of their profession. It seems that at present the insurance societies manage to escape paying the indemnity on some technical grounds in many instances, and concerted action is necessary to enable physicians to obtain their rights and more favorable conditions. Those with any experience or knowledge in the matter are requested to confer with the secretary, Dr. M. Chotzen, Breslau XVIII, Landsbergerstrasse 1, Germany.

Medical Men as Electors for the Russian Douma.—A St. Petersburg exchange states that 32 per cent. of the electors chosen to select the members of the Douma belong to the ranks of university medical teachers and 6.2 per cent. to physicians in general. It states further that the national medical society, the Pirogow, has collected data which show that 288 medical men or women have been involved in the more recent repressional acts of the government. This includes 13 physicians killed or wounded, 155 arrested and banished, and 24 dismissed from official service. The veterinarians have also contributed 20 arrested or dismissed and 16 "feldschers" have also been arrested. Five additional physicians are mentioned as still more recently banished from their homes.

International Congress for Medical Electrology and Radiology.—The third international congress of medical electrology and radiology was to have been held at Amsterdam in 1905, but was postponed on account of the Roentgen jubilee congress at Berlin the same year. It has now been decided to hold the international gathering at Milan, Sept. 5 to 9, 1906. Among the subjects on which addresses have been promised are "Laws of Electrical Stimulation of Nerves," "Excitability of Various Muscles and Nerves," "Electricity in Treatment of Cutaneous Affections," "Treatment of Surgical Tuberculosis with High-Frequency Currents," "The Fundamental Principles of Modern Electrotherapy," "Measurement of Faradic Currents," "Stereoscopic Radiography," "Treatment of Carcinoma," "Radium as a Therapeutic Agent" and "Present Status of Phototherapy." An exhibition of electrical appliances, etc., will supplement the congress. The fee for the congress is $5.00 for regular members and $2.50 for associates. Dr. Luraschi of Milan, via S. Andrea 11, is the secretary, and Bozzolo of Turin has been appointed president.

Sixth International Congress for Criminal Anthropology.—The name of Cesare Lombroso is indissolubly connected with the science of criminal anthropology, and it was fitting that this sixth congress should be held in his home city and on the fiftieth anniversary of his entry into his professional career. The congress opened April 28 at Turin, where Lombroso has been professor of legal medicine and psychiatry since the early sixties. He was presented with albums containing autograph greetings from the profession at home and abroad, and the city of Verona gave a gold tablet. Lombroso presided, speaking in French, and Van Hamel and Magnaud were appointed honorary presidents, with Max Nordau, Tamburini, Sommer of Giessen, Sergi, Ottolenghi and others. The second day of the congress was devoted entirely to inspection of the prisons and insane asylums under Lombroso's guidance. His main address was on the relations between sexual psycopathies and criminality. A *Festschrift* has been published by Boccha of Turin, containing articles by 29 of the leading men in the science, discussing the ideas and works of Lombroso and their practical application.

Professional Secrecy in Case of a Crime.—A physician in Holland was recently fined by the authorities because he had failed to notify them in regard to a supposed crime. The circumstances were that he was called to attend to a man, a stranger to him, who had died suddenly. There was a small bullet wound in the skull and an odor of hydrocyanic acid in the room. He made out the death certificate, stating "Cause of death unknown." He was arrested for false testimony, the authorities affirming that it was his duty to have stated the suspicions circumstances attending the death. An Amsterdam letter in the *Wiener klin. Rundschau* for April 29 states that the physician allowed the time limit for appeal to a higher court to lapse, but later presented a plea and argument to the minister of justice, saying that professional secrecy is an institution in the interests of the public and not in the interests of physicians themselves. Every one at any time and without apprehension should be able to appeal for medical help, even when a crime has been committed or attempted. This would be impossible if the decree of the first court should stand, compelling physicians to serve as officers of justice.

Medical Fees in Case of Railway Accidents.—Two years ago a large number of persons were injured in an accident on one of the government-owned railroads of Belgium. Physicians were summoned from the vicinity to treat the wounded, and in many cases they had to continue their care for days or weeks. The government is, of course, pecuniarily responsible for their remuneration, and the charge presented for their services was according to the standard rate for middle-class patients. The government has refused to pay them at this rate, claiming that as the majority of the injured belonged to the working classes, remuneration should be according to the wage-earner's scale. The *Gazette Médicale Belge* comments that in future physicians summoned to the scene of an accident will be liable to be tempted to attend first to the better dressed wounded—if such a graduated scale of remuneration is sanctioned—and leave the wage-earners to the last. Physicians will not do this, the editorial adds; the claims of the most seriously wounded will always take precedence, but the lawsuit brought by the officials of the railroad companies to adjudicate the claims of the physicians does them little honor. The case has not yet been decided.

Twenty-third German Congress for Internal Medicine.—Nearly 600 physicians gathered at Munich, April 23, for this annual meeting of the leading men in internal medicine and their followers. Notwithstanding the clashing of dates with the international congress at Lisbon, a number of prominent foreigners were present, including Knud Faber of Copenhagen, Osler from Oxford, and Talma and Heilbronner of Utrecht. From the reports in our foreign exchanges we should judge that the most interesting and important feature of the congress was the evidence presented in respect to the curability by operative measures of exophthalmic goiter. Kocher of Berne has performed 3,000 operations on the thyroid gland, including 216 cases in which he operated on account of exophthalmic goiter. Of this last group 72 per cent. of the patients have been entirely cured. In the early stages, he asserted, rest, a milk and vegetable diet, the milk of thyroidectomized goats and administration of phosphates are liable to induce material improvement, but radical treatment is by ligation of the vessels and, possibly, resection. In affections due to inadequate functioning of the thyroid, the only radical treatment is by implantation of a sound thyroid gland. He presented the subject in a masterly manner, preaching the curability of exophthalmic goiter by operation and the necessity for early interference. He was invited to present the same address in London this week. The addresses and discussion of the thyroid gland and its problems was a notable symposium by 22 of the leading internists of Germany and Switzerland. Hönicke reporting that he had succeeded in inducing experimental exophthalmic goiter in dogs by feeding them with thyroid gland extracts. Most of the other papers read were on the problems of metabolism, physiologic chemistry, physiology of the heart, anatomy of the auriculo-ventricular bundle, and similar topics, only a few being devoted to treatment. The almost entire absence of communications in regard to immunity, bacteriology and pathologic anatomy is a commentary on the trend of the present moment. The *Muenchener med. Wochft.* invited the members of the congress and ladies to a gala presentation at the Opera-house of Mozart's "Cosi fan tutte", and distributed its annual burlesque number at the banquet at the close of the congress. The correspondent of the *British Medical Journal*, commenting on this congress, remarks: "The transactions of these congresses for the past 22 years reflect as perhaps no other series the remarkable evolution of clinical research. Looking over the volumes one is

impressed by the sense of responsibility shown by the leaders of the profession in Germany—men who have made their mark, and yet, year by year, faithful to their trust, they spend the three or four days in intellectual commerce with their compeers and in social fellowship with the younger workers and with the more important of the general practitioners of the country. It is impossible to overestimate the advantages of such an annual gathering. Alike to young and old, it is an inspiration; to its stimulus may be attributed not a little of the intensity and thoroughness which to-day characterize German medicine."

LONDON LETTER.

Action Against a Physician.

An action against a physician has been brought under peculiar circumstances, which illustrate the uncertainties of the law, against an Irish physician. The object was to recover $1,250 for injuries said to have been sustained by a youth in consequence of negligence. The case had been tried previously at the County Antrim assizes. On the first occasion the jury disagreed. On the second they found a verdict for the defendant. Against this decision the plaintiff appealed and a new trial was granted on the ground that there had been misdirection on the part of the judge. The plaintiff suffered from mumps which was complicated with orchitis. On April 4, 1904 (a Monday), the defendant was asked to see him. He recommended the use of a splint or failing that a cushion. He also prescribed an application consisting of equal parts of belladonna and soap liniments. The instructions were "to be applied as directed." He ordered the friends to keep the lotion sprinkled on lint and to lay it on the part, and promised to see the boy again on Thursday. The cushion was made, the liniment was applied, and on the following morning the flesh was blistered and inflamed. Notwithstanding, the liniment was still applied. On April 6 the boy was so ill that the physician was sent for, but as he was away from home another had to be called in. The latter found the boy suffering from belladonna poisoning. The defendant denied that he ordered the treatment to be continued until Thursday and said that he told the patients at once to seek advice in the locality, as he lived at a distance, if the case did not progress favorably. Medical evidence was given that the directions of the defendant were what was usual in the profession; but two of the witnesses admitted in cross-examination that it would be prudent to caution people to use care in the application of belladonna liniment. The jury brought in a verdict for the plaintiff and awarded him $325 damages. The plaintiff gave notice of appeal on the ground of misdirection.

Baron Takaki at St. Thomas' Hospital.

Baron Takaki, formerly Director General of the Medical Department of the Imperial Japanese Navy, has delivered a series of three lectures on "The Preservation of Health Among the Personnel of the Japanese Navy and Army." Mr. Wainwright, the treasurer of the hospital, who presided, said they were all proud of Baron Takaki, because he came as a student to St. Thomas' Hospital in 1874 and greatly distinguished himself there, winning all the prizes he possibly could, including the Cheselden medal for surgery and the treasurer's gold medal. Baron Takaki's lectures covered similar ground to those which he recently delivered in America. He was accorded a most enthusiastic reception by a large audience, consisting of the staff of physicians and students of the hospital. He deprecated the fact that so many Japanese students went to Germany to complete their education and expressed a preference for the English schools, and promised that he would use his influence in favor of the latter. Incidentlly, he mentioned that he was made director general of the medical department of the navy at the age of 37, while in this country he believed that men were not promoted to responsible positions until they were bald or gray, a statement which was received with much laughter.

The Open-Air League.

Another association, "The Open-Air League," has been added to those which are engaged in the crusade against consumption. It has received the support of several eminent physicians and persons of high social position. Its object is to enlist a vast army, who by house-to-house visitation and by the advocacy of the open window, will reach the poor in a manner never before practiced in England. It is the intention of the league to establish on inexpensive lines sanatoria for the early treatment of consumptive poor, and it is hoped that working men and women will join the league as associate members at a subscription of 60 cents per annum, in return for which members of their families will receive concessions in the cost of sanatorium treatment. The league proposes to educate the public regarding the advantages of the open window in the prevention and cure not only of consumption, but of many other diseases, for which purpose lectures, pamphlets and skilled house-to-house visitation will be employed. Provision will be made for the after-care of cured patients by the establishment of industrial farm-sanatorium colonies. A register will be kept of patients who have successfully undergone the open-air treatment and who are in search of suitable outdoor occupation and also a register of persons willing to engage workers of this class. Open-air methods will also be advocated for schools and public buildings and pupils in training colleges for teachers will be instructed in the advantages of the open window in the school room.

Polluted Water of the East End of London.

FROM AN OCCASIONAL CORRESPONDENT.

American cities have long held an unenviable reputation with regard to the quality of their water supply. Of course, in almost every instance, so far as quality has been concerned, there has been no cause for complaint. Some of the large centers of population in the United States have been actually stigmatized and have become almost a by-word on account of the bad quality of their drinking water. Typhoid fever has been rife and has been traced directly, in the majority of instances, to a polluted water supply. Fortunately, of late a great change has come over the situation in this respect. Public sentiment has been profoundly stirred and municipalities everywhere have been exerting themselves in the effort to procure as pure a water supply as possible. The results of this enlightened policy have already been plainly apparent. In certain cities and localities in which formerly typhoid fever was somewhat of a scourge the disease has wholly disappeared or has only manifested itself in the form of a few sporadic cases, and it is more than likely ere many years have elapsed that, instead of being behindhand in questions relating to water supply, the cities of America will lead the world. Their advantages, as a rule, are obvious, and when all opportunities are seized their water supplies should be second to no cities of the world. For a considerable period Great Britain has been in the van in regard to all sanitary matters. She was first in the field and her municipal authorities were pioneers in this branch of preventive medicine. In fact, public health has been the strongest feature of British municipal government. Of recent years, however, signs have been evident that the cities and towns of the United Kingdom have been losing, to some extent, their exalted position as models of sanitation among the countries of the earth. The German municipalities, in particular, have taken a "leaf from the book" of British sanitarians and now excel their masters.

Especially were British cities renowned for pure water supplies. Frequently the quantity was insufficient, at any rate insufficient as measured by generous American standards, but the quality was considered above reproach. London has often had cause to complain of a scant supply of water, but until recently no serious reflections have been cast on its purity: that is to say, it was believed to contain few, if any, disease-bearing germs. Within the past few months there has been a rude awakening from this contented state of mind. Indeed, water experts have for some time recognized the fact that water consumers in certain districts of London are in a situation of the gravest danger, and with a view of obviating this danger the London water board had brought in a bill to be presented to parliament for the purification of the water supply of the east end of London. For some unknown cause this bill has been suddenly dropped, and in consequence a feeling almost of consternation has been produced among water experts of the British metropolis.

Sir Alexander Binnie, who was formerly chief engineer to the London County Council, stated at a public dinner a short time ago that a time would come, if the present state of things continued, "when there will arise among the teeming millions of London an epidemic which will startle the world." The same authority, in the course of an interview, said: "The condition of things in the east end of London is in the highest degree perilous, and one morning the inhabitants of that section may wake up to find themselves plunged in as serious an epidemic as that which visited Hamburg a few years ago owing to the consumption of the polluted waters of the Scheldt. This part of London, comprising about one-third of the entire population of the metropolis, draws its drinking water from the mains of the old East London water company; the water is drawn from the River Lea."

The River Lea is terribly polluted, about 2,000,000 gallons

of crude sewage per diem being discharged into the river at no great distance whence the water is extracted, the supplies taken amounting to 32,000,000 gallons a day.

There is no doubt that the water supply of the east end of London is at present a menace to the whole community. The remedy suggested is that a supplemental supply should be obtained from the Welsh lakes, a distance of more than 150 miles. The supply of London is notoriously inadequate, and, despite the fact that all water before being used is passed through sand filters, it would seem to have been proved to be dangerous to health as well. It goes without saying that no expenditure should stand in the way of providing London with a pure water supply. In the past America has learned most of her lessons in sanitation and in public health from Great Britain; in the future it is more than probable that the positions will be reversed.

Pharmacology

Subsidized Medical Journals.

"CANNED EDITORIALS."

Three or four weeks ago the Antikamnia Chemical Company sent a letter to some of the medical journals in which the American Medical Association, THE JOURNAL of the American Medical Association, *Collier's Weekly* and the *Ladies' Home Journal* were discussed in very harsh and uncomplimentary terms, as might be expected, considering the source of the letter.

Now there was nothing to indicate that the letter was sent to any other journal than the one receiving it, and consequently some of our editorial friends were led astray. One of these was the editor of the *Southern Practitioner*. In the May number that journal has one editorial; but it is a long one, much longer than the editorials usually found in that journal. It bears the caption, "As to Proprietary Medicines," and is introduced with this sentence:

"The bitter and selfish fight made by THE JOURNAL of the American Medical Association, some of its satellites, and a few lay papers, on pharmaceutical preparations, has degenerated to a point where misrepresentation and positive mendacity have become their chief stock in trade."

As these were the identical words that formed the first sentence of the Antikamnia letter, we compared the two, and lo, the editorial was the letter *in toto*, practically. To be sure, here and there a word or phrase was modified and some comments added at the end, but otherwise the letter and the editorial are the same. For instance, the letter said:

"Knowing that we had little to fear from anything truthfully said of Antikamnia or any of the coal-tar preparations"; but the editorial had it:

"Knowing and believing that right in the end would prevail." This is better, and makes it easy to drop a give-away word.

Farther down the editorial it reads: "Yet *Collier's*, assisted by THE JOURNAL of the American Medical Association", whereas the letter had it: "Yet *Collier's*, assisted by the American Medical Association." Evidently the editor of the *Southern Practitioner* wanted to hit THE JOURNAL a rap, rather than the American Medical Association, which was not kind on his part. "Millions on millions of pounds of the coal-tar preparations" is the way the letter put it, but the editorial was not so reckless in statement, as it said "numbers of pounds."

The concluding paragraph of the letter was not incorporated in the editorial. It is as follows:

"We write you at length to make plain to you just what is being done to injure coal-tar preparations and to show the depths to which seemingly reputable business and professional men will sometimes descend to accomplish a purpose beneficial to themselves.

"If you can see your way clear to assist in counteracting the injustice being done you will greatly oblige."

It will be noticed that the closing sentence is not a command, but a request "to assist" in "counteracting the injustice being done."

The editor adds some original remarks of his own, which he introduces with:

"We have used freely antikamnia in our remarks," whereas the word "antikamnia" appeared only once in the editorial. The writer forgot that, in transposing the letter into the editorial, "antikamnia" had fallen by the wayside once or twice. The last part of the editorial—the really truly original part of it—is devoted to praising Fellows' syrup of hypophosphite, Robinson's hypophosphites, tongaline, bromidia, iodia, papine, echthol, Gray's glycerin tonic, Hayden's viburnum compound, Wayne's elixir, antiphlogistine, listerine, glyco-heroin, glycothymoline, cystogen, etc., and, of course, abusing the editor of THE JOURNAL of the American Medical Association, which nowadays is a very common pastime with some medical editors.

Evidently it is intended that the Antikamnia letter shall be well circulated among the profession of the country. The *Southern Practitioner* for May was no sooner off the press than reprints of its "editorial" were scattered broadcast. The reprint is entitled, "As to Proprietary Medicines, by Deering J. Roberts, M.D., Reprint of leading editorial in the *Southern Practitioner*, Vol. XXXIII, No. 5, May, 1906." "Leading editorial" is good. Detail men of certain nostrum houses are distributing this reprint to physicians, in connection with their samples.

"To what depths will we mortals fall to win our point!"

THE AMERICAN MEDICAL COMPEND ALSO.

But while the *Southern Practitioner* is the worst sinner up to present writing, others to be heard from—in that it published the complete letter minus the closing paragraphs, the *American Medical Compend* of Toledo, Ohio, is not far behind. This journal obeys the injunction "to assist" by transferring the greater portion of the antikamnia letter, word for word, without credit or quotation marks, into its editorial pages as an original editorial. But it does introduce the editorial with three or four actually original sentences:

"Apparently a selfish fight is being made by some," says the editor, "against the use of coal-tar preparations, and they carry it so far as to condemn what we know from personal experience" (the editor is given as W. W. Grube, A.M., M.D., professor of physiology and clinical medicine, Toledo Medical College; it is to be hoped he is not the one who wrote these introductory sentences, or that he is not endorsing antikamnia), "to be good and valuable remedies. There must be no misrepresentation as the profession will not tolerate it." The last sentence should be read twice, keeping in mind that all that follows in the long editorial is—the antikamnia letter. There is no hint that it is not an original editorial of the editor of the *American Medical Compend*.

THIS TIME IT IS AN ANONYMOUS LETTER.

The *Atlanta Journal-Record of Medicine* takes it up differently. The antikamnia letter in this instance is put into the editorial department, double leaded, but under the caption "A Letter." It is, of course, not signed; the readers are kept in blissful ignorance of the author; they might naturally conclude that some disgruntled subscriber had gone back on his fellow-practitioners and had turned to the defense of the "patent-medicine" men. One short paragraph in the body of the letter is omitted, and the concluding paragraph in which the journal is asked "to assist" is kept from the reader.

By the way, this number of the *Atlanta Journal-Record of Medicine* devotes sixteen editorial pages to the defense of nostrums. Besides the antikamnia letter it quotes nearly all of the pamphlet sent to newspapers entitled "Legislative Schemes of the American Medical Association"; also another article

circulated by the Proprietary Association of America, "The Mendacious Campaign Against Domestic and Proprietary Remedies," which is an attack on *Collier's* "Great American Fraud" articles.

IF NEWSPAPERS, WHY NOT MEDICAL JOURNALS?

The "patent-medicine" men's association has a very effective press committee, which prepares and furnishes to such newspapers as are under the control of that association, material to be used to influence public opinion in favor of "patent medicines." As this material is usually attractively presented and readable, it is a great temptation to editors to print it as received rather than to transpose the arguments into their own words. This is the reason that the same editorials defending "patent-medicine" appear in newspapers all over the country. This press committee, therefore, is a great labor-saving device for the weak newspapers that are willing to be used by their supporters.

If newspapers can do this—can use as original the material furnished them—why can not medical journals? They can. They do. But as there is no real central press committee to act for the "ethical" nostrum manufacturer, some of them are doing it for themselves, as the Antikamnia Company, with its letter to the medical journals. As a member of the Proprietary Association of America that company learned how to do it.

And the medical journals are even more willing to aid the "ethical" nostrum men than are the newspapers to aid the "patent-medicine" men. As the former have no press committee, certain medical journals are working up their own material, and then sending it around for others to copy. For instance, we have before us "advance sheets of editorial pages of *Medical Sentinel*, Portland, Ore., for May, 1906, Henry Waldo Coe, M.D., Editor." It contains six editorials for the faithful to copy: "The American Medical Association Gang," "A Medical Bureaucracy," "Directors Who Do Not Direct," "The Self-Effacement of Local Medical Journals," "Is the A. M. A. Ring 'Unbustable'," and "The House of Delegates of the A. M. A."

The faithful will copy.

Physicians and Proprietary Remedies.

It occurs to me it might be worth while to allow a layman, "the wisest Frenchman that ever lived," to express himself in the discussion now going on in your columns and those of other journals regarding "patent" and proprietary medicine, the credulity of many physicians and the gullibility of the public, etc. Montaigne so clearly apprehended the truth concerning so many of these matters we are now discussing that it seems somewhat discouraging that the intelligence and wisdom of the profession and public should have increased so little apparently in the last 325 years.

To illustrate, the excellent paper by Dr. Henry P. Loomis, published in your issue of December 9, entitled "Physicians and Proprietary Medicines," really points to no fallacy, sophistry or abuse to which Montaigne was not alive. The pity of it is that Dr. Loomis' words should be needed to-day; that they are needed we must sadly confess.

Who has ever—physician or layman—shown the unwisdom and folly of the shotgun prescription more clearly than Montaigne does in these words?

"Even the very promises of physic are incredible in themselves; for having to provide against divers and contrary accidents that often afflict us at one and the same time and that have almost a necessary relation, as the heat of the liver, and the coldness of the stomach, and the other will cool the liver; one has its commission to go directly to the kidneys, nay even to the bladder, without scattering its operations by the way, and is to retain its power and virtue through all these turns and meanders, even to the place to the service of which it is designed, by its own occult property; this will dry the brain; that will moisten the lungs. Of all this bundle of things having mixed up a potion, is it not a kind of madness to imagine or to hope that these differing virtues should separate themselves from one another in this mixture and confusion to perform so many various errands? I should very much fear that they would either lose or change their tickets, and disturb one another's quarters. And who can imagine but that in this liquid confusion, these faculties must corrupt, confound and spoil one another? And is not the danger still more, when the making up of this medicine is entrusted to the skill and fidelity of still another, to whose mercy we again abandon our lives?"

And who has ever portrayed the mental state of the sufferer from a chronic or incurable disease and at the same time shown how and why they become such easy victims to quack doctors or the claims of the patent-medicine manufacturers quite so well as does Montaigne in the following paragraph:

"'Tis the fear of death and pain, impatience of disease, and a violent and indiscreet desire of a present cure, that so blind us; 'tis pure cowardice that makes our belief so pliable and easy to be imposed on, and yet most men do not so much believe as they acquiesce and permit; for I hear them find fault and complain as well as we; but they resolve at last, 'What should I do then?' As if impatience were of itself a better remedy than patience. Is there any one of those who have suffered themselves to be persuaded into this miserable subjection, who does not equally surrender himself to all sorts of impostures? who does not give up himself to the mercy of whoever has the impudence to promise him a cure? The Babylonians carried their sick into the public square; the physician was the people; everyone who passed by being in humanity and civility obliged to inquire of their condition, gave some advice according to his own experience. We do little better; there is not so simple a woman whose chattering and drenches we do not make use of; and according to my humor, if I were to take physic, I would sooner choose to take theirs than any other, because at least, if they do no good, they will do no harm. What Homer and Plato said of the Egyptians, that they were all physicians, may be said of all nations; there is hardly a man among any of them who does not boast of some rare recipe, and who will not venture it on his neighbor, if he will let him. I was the other day in company where some of my fraternity told us of a new sort of pills made up of a hundred odd ingredients; it made us very merry, and was a singular consolation, for what rock could withstand so great a battery? And yet I hear from those who have made trial of it, that the least atom of gravel will not stir for it."

It is to be remembered that Montaigne himself sought in vain for relief from a stone in the bladder.

THEODORE DILLER.

A Death from Trional.

Dr. J. Reynolds Brown, Tacoma, Wash., sends us a clipping from the *Daily News* of that city, containing an account of the death of a young man from trional.

The clipping states:

The irresponsible prescribing of medicines by druggists and their clerks was indirectly responsible for the death of Charles F. Athol, according to Coroner Stewart and County Physician W. B. McCreery. The physicians gave this opinion after performing an autopsy on the body of the young man, and Drs. E. M. Brown and C. F. Kinnear, who assisted, concurred.

Athol, who was but 21 years old, was the son of Mr. and Mrs. Frank Athol, of 1331 South D street. Last week the young man was troubled with sleeplessness and in a drug store he asked for some sleeping-powders. The man in charge gave him a remedy known as "trional" and he took about fifteen grains. Athol was an advanced consumptive and the medicine had the effect of raising a slight fever. This alarmed his parents, who went to another drug store, told the clerk the symptoms and got some more "trional," which they administered according to the clerk's directions. Their son became rapidly worse, and, though a physician was called, he died shortly afterward.

The *Daily News*, in an editorial in the same issue, calls attention to what it designates as the "drug store habit." The editorial states that this is a habit to be deplored and has resulted in many evils as it leads to the misuse and excessive use of many dangerous drugs.

The editorial concludes:

It is easy for the man with what seems to be a slight ailment in his family to ask the druggist for a potion, and so cheap compared with the cost of visiting a physician and then the druggist, that we run the wildest of risks. Oftentimes for "two bits," or even less, a man gets from the apothecary what he has been taught by experience would cost him several times that sum if he first saw the physician and then the apothecary, for the price seems to grow in all directions with that bit of prescription paper.

But it is dangerous and probably unlawful. It is the intention of the medical law of the state to confine the practice of medicine to

raduate physicians, which is eminently correct, and the warning of he coroner, with the death of young Athol before us, is given with he emphasis merited by the seriousness of the custom.

[Trional is a proprietary name for what is now official in he U. S. P. as Sulphonethylmethanum.—ED.]

Lay Resolutions Endorsing the Nostrum Campaign.

JACKSON, MICH., May 3, 1906.

To the Editor:—IN THE JOURNAL, April 21, Dr. Blair, of Lebanon, Ohio, submits a copy of a memorial to the general assembly of the Cumberland Presbyterian Church adopted at he Miami presbytery on April 4, 1906, urging action to eliminate objectionable medical advertising from their denominational papers.

For some unaccountable reason the religious press is very low to institute reform in this direction, and to one who is observing the character of the advertising admitted to the columns of the religious papers of all denominations, these Presbyterian resolutions are remarkably vigorous and show a grasp of the situation which is somewhat unexpected. It is truly refreshing to read them. The Miami presbytery is to be congratulated.

The point of priority, however, must be conceded to the Baptists of Michigan. At the seventieth annual meeting of he Baptist convention of the state of Michigan, held at Jackson, Oct. 16-20, 1905, the following resolutions were passed and placed on record:

We are in the midst of startling and lamentable revelations of ethical corruption, revelations which show not alone the moral delinquency of a few men in high places, but which seem to be expressive of dishonesty as present in every rank of our American life.

We would register our conviction: That this is to be corrected only by a clear reaffirmation of the truth that the ultimate standard of human conduct is not personal desire or profit, or even the permissions of human laws, but the eternally righteous laws of the personal God and our Lord Jesus Christ; that every person who bears the name of Jesus Christ is under most solemn obligation to make his conduct in social and business relations correspond to his profession; that the church of Jesus Christ has the privilege and the duty of being faithful to her high mission of bringing the personal God and His righteous requirements close to the lives of men.

As a specific cause of complicity, conscious or unconscious, in business of questionable honor and honesty, we would express our regret that there are found in the pages of our denominational press advertisements of such things as "patent medicines" and get-rich-quick schemes, which border on, if they do not reach, the obscene, and are delusive and misleading to many.

We would further express the hope that our noble denominational papers would lead in the fight against corruption and graft by excluding such advertisements from their pages.

T. S. LANGFORD, M.D.

Insurance Examination Fees

The Recent Reduction in Fees.

ROCHESTER, N. Y., May 17, 1906.

It appears very proper at this time to take up the discussion of medical insurance examinations in view of the recent cut in the examination fee by the Mutual Life and the Equitable Life Insurance companies from $5 to $3, and the contemplation of the same cut by other companies.

Old-line life insurance companies, except the New York Life and a few others, until recently have been paying $5 for examinations, and have appeared to regard it as a just compensation and to appreciate the fact that it would be unjust to expect a competent physician to make a thorough examination of applicants for less than $5, inasmuch as the examination is usually made at the home of the applicant. For various reasons it is often necessary to make two trips to the applicant's home to complete the examination, and two or more urinalyses are often necessary and required, and also the usual necessary writings of explanations and letters to the home office.

The great majority of companies have realized that for all this a fee of $5 is only a proper compensation, and now, when we consider the advances in almost every branch of labor, and with living expenses very high, compared with five or ten years ago, and constantly increasing, it would be only natural to expect that if there were a change in the physician's fee for examining, it would be an increase.

Who are responsible for this unnecessary and unmerited injustice can readily be appreciated by examining Section 97, laws enacted by the New York General Assembly Session, 1906, and recommended by the Armstrong committee. Section 97, in part, is as follows:

97. *Limitation of Expenses.*—No domestic life insurance corporation shall in any year after the year nineteen hundred and six expend or become liable for or permit any person, firm or corporation to expend on its behalf or under any agreement with it (1) for commissions or first year's premiums, (2) for compensation, not paid by commission, for services in obtaining new insurance exclusive of salaries paid in good faith for agency supervision either at the home office or at branch offices, (3) for medical examinations and inspections of proposed risks, and (4) for advances to agents, an amount exceeding in the aggregate the total loadings on the premiums for the first year of insurance received in said calendar year (calculated on the basis of the American experience table of mortality with interest at the rate of three and one-half percentum per annum) and the present values of the assumed mortality gains for the first five years of insurance on the policies on which the first premium, or instalment thereof, has been received during such calendar year, as ascertained by the select and ultimate method of valuation as provided in Section 84 of this chapter.

This means that the agent, the medical examiner and inspection of risk must be paid out of this limited allowance; for instance, an agent wrote an application at age 30, twenty-year endowment, according to the insurance laws recently passed, there would be $18 to be divided between agent and medical examiner, after deducting the fee for inspecting the risk and the proportionate loss on account of rejections, which would leave about $16 to be divided between the agent and the examining physician. If we deducted $5 for the examiner the agent would have $11 for writing the case.

Now the companies say that it would be quite necessary, because of this section 97, to cut the medical examiner's fee that they may be able to obtain new business. If the Armstrong committee, in drafting the insurance laws, had not mentioned medical examinations the companies could, and in all probabilities would, continue to pay their medical examiners the regular fee of $5.

The law, in its restrictions, throws out a protecting arm to the agents and allows them to receive extra compensation from the home office, when it says, in section 97: "Exclusive of salaries paid in good faith for agency supervision, either at the home office or at the branch office", under which the agent can be given $1,000 or more a year extra, but no shelter under the law is given the examining physician; there is no loophole for him; he must take his little 40 per cent. reduction and smile, if he can.

Eleven years ago the New York Life, as Dr. McCormack puts, it, the original and arch sinner against the best interests alike of their policy holders and the profession in this regard, had cut its fees and probably a majority of leading physicians in all sections of the country failed to resent the recognized indignity. Now, what shall the profession do when the New York state legislature makes it very convenient, if not necessary, for the other companies to make this unmerited and discourteous cut? Shall we let the blow pass unheeded, or stand together and demand that we be not unjustly legislated against? JAS. H. FINNESSY.

Societies Take Action.

BUNCOMBE COUNTY (N. C.) MEDICAL SOCIETY.

At a meeting of this society, held May 7, the following committee report was adopted:

Your committee report:

1. That there has been lately a concerted attempt of most of the insurance companies to reduce the standard fee for medical examinations for policies of $3,000 and under to $3.

2. That the success of this movement, which is unfair to the profession in that it would make them bear a part of the burden brought on the companies by the dishonesty of their managers and directors, and with which the doctors had nothing to do and for which they can not be held responsible, is dependent on the willingness of doctors to agree to the new rate, as is shown by the letters the companies are sending to their examiners and their anxiety not to have the county societies pass resolutions opposed to the reduction. If the profession practically as a whole refuses to do the work for such a fee the companies are powerless, as they can not afford to put their examining work in the hands of men who, for various reasons, are not in societies and only a small percentage of whom are of high standing.

3. It seems, then, to the committee that if the members of the society, which includes a very large majority of the medical men of the county, determined as one man to refuse consent and stick to their agreement faithfully and honestly, we are bound to win in what is a perfectly fair and just contest for our rights.

4. Therefore, we would recommend that the Buncombe County Medical Society and all its members binds itself and themselves by a written agreement to make no insurance examinations for less than the usual fee of $5.00, save that when a company is willing to omit the family history and urinalysis, thus very materially lessening the work of such an examination, the members of this society will agree to make $3 the regular charge.

5. That the secretary be directed to obtain within two weeks the signatures of each and every member to this resolution and to send to each one a copy of this report showing that the interest of each will be best served by a united stand of our profession against this movement.

6. Farther, that all physicians in good standing in the county, even when not members of this society, be urged to join with us in this movement.

7. That the secretary be directed to send a copy of these resolutions to the secretary of each county society in this state, and to the state society, with the request that they be read at the next meeting, and that similar resolutions be passed by them; for unless the profession as a whole realizes that only in union is strength and stand together, it is easy to foresee the coming of the time when the companies, seeing their power in our disunion, will further reduce the fee, till as in Germany and France at present, a physician will be obliged to take fees of 50 cents and less for skilled work, which is none too largely paid at present rates.

8. That to further the fight by the profession against this movement, the secretary be directed to send a copy of these resolutions to THE JOURNAL of the American Medical Association, with the request that they be published in its columns.

CHARLES L. MINOR,
M. H. FLETCHER,
C. V. REYNOLDS,
Committee.

OKLAHOMA MEDICAL ASSOCIATION.

At the annual session of this association, held at Oklahoma City, May 7-9, 1906, the following resolution was passed:

WHEREAS, We, the members of the Oklahoma State Medical Association, in convention assembled, ever ready to promote the general welfare of the people, corporations and bodies we serve, and mindful of the duties imposed and services required of us by these people believe that it is not for the best interests of all concerned that our examination fees be reduced, but that it rather tends to lower the dignity and cause us to become more lax in our examinations and thereby render poorer service to our constituents, all of which is subversive of any good, and believing, as we do, that all good people, corporations and bodies demand the best service that we can render and should be willing to pay a just compensation for such service, and further believe that it is the practice of poor economy by any corporation, to lower examination fees and still demand the same service, and that this association should use its influence with all the people, corporations and bodies demanding our services, and endeavor to impress on them the necessity of paying what the services are really worth. Therefore be it,

Resolved, That the Oklahoma State Medical Association recommends that each constituent organization of this body take the proper steps to establish a minimum fee of $5.00 for each and every examination made; that this society condemns contract practice, and hereafter our members be forbidden to accept the same unless paid for at the regularly established rate.

JOHN RANSOM HAMILL, Guthrie, Chairman.
FLOYD E. WARTERFIELD, Holdenville.
W. E. DICKEN, Oklahoma City.

COLUMBIA (S. C.) MEDICAL SOCIETY.

At a recent meeting this society formally adopted the resolutions regarding insurance fees, passed by the South Carolina Medical Association, published in THE JOURNAL May 5, 1906, page 1386.

SACRAMENTO SOCIETY OF MEDICAL IMPROVEMENT.

SACRAMENTO, CAL., April 25, 1906.

At a regular meeting, held April 24, 1906, the following preamble and resolutions were unanimously adopted:

WHEREAS, Several of our members have been notified that the Mutual Life Insurance Company of New York has reduced the fee for the examinatoion of applicants from five ($5) to three ($3) dollars, and,

WHEREAS, These members have referred this action to our society, which, for many years, has had in force a fee bill rate for such examinations for old line companies of five ($5) dollars, and,

WHEREAS, The last-named figure for a full and complete examination, with analysis of urine, filling blanks and necessary correspondence, is but a fair compensation for the time occupied by professional men on whose honesty and capability the success of life insurance companies must mainly rest; it is therefore,

Resolved, That the members of the Sacramento Society for Medical Improvement agree to adhere to their fee bill rate and earnestly protest against the reduction made by the present officers of the Mutual Life Insurance Company of New York, as unjust, unfair, and unworthy, and they recommend all medical men in affiliation with the State Medical Society, and the American Medical Association to refuse to examine at the lowered rate for a corporation the officers of which have taken this course under the pretense of a necessary reduction of expenses, while at the same time they are allowing the president fifty thousand dollars a year for his services.

Resolved, That the dignity, honor, influence and success of the medical profession largely depend on the recognition of a proper compensation by those able to pay for services rendered and that no organization can rightfully require its medical examiners to work for a less amount than that charged private parties."

It was further moved and carried by unanimous vote of the members present:

That members of the Sacramento Society for Medical Improvement who examine in life insurance for a fee less than that of the fee bill, whether paid in individual fees or in salary, be dropped from the roll of the society.

That it is the sense of this society that the rights and privileges of consultation with members of this society be denied those whose names have been dropped from the roll for examining for less than the prescribed fee.

That any special arrangement for increase of fee to $5.00 per examination made between medical examiner and local agent shall not be accepted by this society, and the special arrangemeot must be made between the medical director of the company and the examiner.

E. M. WILDER, M.D., Secretary.

Medical Legislation

Department of Public Health.

At a recent meeting of the Norfolk District Medical Society the enclosed resolutions were unanimously adopted:

Resolved, That the Norfolk District Medical Society of the State of Massachusetts endorses the action taken by the American Medical Association in favor of the establishment of a Department of Public Health with representation in the Cabinet of the President of the United States.

Resolved, That a certified copy of the above resolutions be forwarded by the Secretary to the Chairman of the Committee on Legislation of the American Medical Association.

JAMES C. D. PIGEON, Secretary.

Correspondence

The Philadelphia School for Nurses.

ORANGE, N. J., May 17, 1906.

To the Editor:—In a recent *Bulletin of the Philadelphia School for Nurses* there are given several hundred names of physicians who endorse this school. A paragraph printed at the head of these names reads as follows: "In every instance one or more letters have been received giving specific permission to use the writer's name as reference in connection with this movement."

Under Orange, N. J., the names of eleven physicians are given, my own among that number. As I have never endorsed this school I was interested to know how many of the men named had actually done so. I find two of the men named removed from Orange more than two years ago, and I understand one of them is now dead. Another is a graduate of 48 years' standing and has not engaged in practice for more than 35 years. Of the remaining eight all deny absolutely that they have endorsed the Philadelphia School for Nurses.

It does not seem that such a piece of barefaced assurance should go unchallenged, and I have no doubt that many of the names given are used without authority. LINN EMERSON.

Association News

Hotel Committees in Boston.

Dr. D. D. Scannell, secretary, writes: "The headquarters of the committee on hotels and transportation will be located in a special booth at Mechanics Building. There will be here a sufficient list of suitable accommodations for those who have deferred making arrangements until the last moment. There will be a sufficient clerical force to minimize delay so far as possible. There will also be a reasonable number of messenger boys whose duty it will be to help our visitors in locating their rooms. In addition to all this, there will be at each of the four railroad stations representatives from a subcommittee who will help in the distribution of information, and for those who desire it, help to secure accommodations by telephoning to the Mechanics Building headquarters. While it is desirable, of course, that all who can should go to the Mechanics Building office, still we can help also from these railroad stations: For those coming into Boston on the Boston and Albany railroad, or the Providence division of the New York, New Haven and Hartford, and whose hotel reservations are in the Brunswick, Buckminster, Copley Square, Lenox, Nottingham, Oxford, Somerset, Abbottsford, Vendome, Victoria or Westminster, we

would recommend getting off at the Huntington Avenue or Back Bay stations, respectively. Most of the lodging-houses will be easily reached from these two depots. To those coming in on the same divisions, but being quartered at the Adams House, American House, Bellevue, Cecil, Essex, Lexington, Parker's, Young's, Touraine, Quincy, Crawford House and the Revere House, it would be best to come into the South Terminal. At each point any additional information can be secured. The majority of the lodging-houses are within from ten to fifteen minutes' walk from Mechanics Building. For any overflow that may occur beyond our reasonable expectation, we will have ample accommodations twenty to thirty minutes' from Boston.

Entertainment for Women Physicians.

The medical women of Boston and vicinity extend a cordial invitation to all women physicians attending the session of the American Medical Association to a garden party on the grounds of the New England Hospital for Women and Children, Dimock Street, Roxbury, on Wednesday, June 6, from 4 to 6. A notice as to special conveyance will be posted in the women's rest room.

A Trip to the Thousand Islands.

A small party is being formed to go to Boston by way of Toronto, taking the boat there for the St. Lawrence River trip through the Thousand Islands and the rapids to Montreal, thence to Boston. The party starts Friday, June 1, at 3 p. m., and reaches Boston, Monday, June 4, at 7:30 a. m. Those wishing reservations made for this trip are referred to Dr. Frank E. Brawley, 72 Madison Street, Chicago.

Visit to New Haven.

NEW HAVEN, May 9, 1906.

To the Editor:—At a meeting of the New Haven Medical Association, held May 2, it was resolved that the rooms of the New Haven Medical Association, 962 Chapel Street, be thrown open to members of the American Medical Association who desire to visit New Haven after the Boston session of the Association. W. E. HARTSHORN, Secretary.

Correction in Rates.

By a typographical error, May 12, page 1464, we announced a rate of $20 from Chicago to Baltimore via the Baltimore & Ohio Railway to Baltimore, thence to Boston via the Merchants and Miners' Steamers. This price is $29.

Marriages

SAMUEL NICHOLAS, M.D., to Miss Esther Trallis, in New York City, April 24.

WALDO BRIGGS, M.D., to Miss Anna Blow Shipley, both of St. Louis, Mo., May 14.

JOSEPH J. BANSBACH, M.D., to Miss Bessie Neese, both of St. Joseph, Mo., May 5.

CHARLES REA, M.D., York, Pa., to Miss Bessie W. Bailey of Bloomsburg, Pa., May 9.

L. DOYTE HOLLIDAY, M.D., to Miss Mabel Lucas, both of Fairmount, Ind., May 10.

JOSEPH SAGER, M.D., to Mrs. Gabie Williams, both of Celina, Ohio, in Cincinnati, May 12.

JAMES L. PARKES, M.D., Madden, Miss., to Miss Alice Sanders, at Harperville, Miss., May 13.

EDGAR WINFIELD GARDNER, M.D., Literberry, Ill., to Miss Mary Machin of Keokuk, Iowa, May 9.

LOUIS NEILL TATE, M.D., Carthage, Ill., to Miss Gertrude Almeda Andrews of St. Elmo, Ill., May 16.

JOHN ROBERT LIONBERGER, M.D., Boonville, Mo., to Miss Rebekah Kinnard of Franklin, Tenn., May 16.

LIEUT. JAY RALPH SHOOK, M.D., assistant surgeon, United States Army, to Miss Helen Slade of Des Moines, Iowa, May 23.

ROBERT J. MCNEILL, M.D., Germantown, Philadelphia, to Miss Jane E. Mason of Philadelphia, May 15.

HENRY WIREMAN COOK, M.D., Minneapolis, Minn., to Miss Ellen McCall Davenport of Richmond, Va., May 15.

FRANCIS ASHLEY FAUGHT, M.D., Philadelphia, to Miss Anna Mabel Brown of North Asbury Park, N. J., May 18.

LIEUTENANT COMMANDER LEWIS MORRIS, M.D., surgeon, United States Navy, to Miss Mary Gibbs Murphy, in New York City, May 12.

Deaths

Thomas Sargent Latimer, M.D. University of Maryland, School of Medicine, Baltimore, 1861; a member of the American Medical Association; president of the Medical and Chirurgical Faculty of Maryland in 1884 and 1885; professor of principles and practice of medicine in the College of Physicians and Surgeons, Baltimore; assistant surgeon and later surgeon in the Confederate service, and filling important position in the army of Northern Virginia; for two years resident physician to the University Hospital, Baltimore; one of the founders of the College of Physicians and Surgeons; president of the lunacy commission of Maryland; editor of two medical journals, died at his home in Baltimore, May 16, from nephritis, after an illness of six months, aged 67.

William H. Focht, M.D. College of Physicians and Surgeons, Baltimore, 1883; a member of the American Medical Association, the Ohio State Medical Society, and once president of the Seneca County Medical Society; a member of the Northwestern Ohio Medical Association and American Academy of Medicine; one of the board of regents of Heidelberg University, and at one time president of the alumni association of that institution; some-time a member of the board of education and of the city council of Tiffin, Ohio, died at his home, May 12, from suppurative meningitis, following an abscess of the ear, after an illness of several months, aged 48.

William M. E. Mellen, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1876; delegate of the Tenth International Medical Congress, Berlin, 1890; president of the Hampton District Medical Society, 1905; mayor of Chicopee in 1904; town physician in 1883 and 1884; for several years a member of the board of health, and its chairman in 1899; in 1891 a member of the board of aldermen, and the following year chairman of that board; a delegate to the national democratic convention in Chicago, 1892, died at his home in Chicopee, from cerebral hemorrhage, May 14, after a short illness, aged 57.

Theodore B. Lashells, M.D. National Medical College, Medical Department of Columbian University, Washington, D. C., 1863; of Meadville, Pa.; surgeon of the Twelfth Pennsylvania Cavalry and One Hundred and Seventy-fourth Pennsylvania Infantry during the Civil War; for many years a member of the State Board of Medical Examiners and the State Board of Charities; chief surgeon of the Bessemer Railroad, and for 35 years local surgeon of the Erie Railroad, died in the Spencer Hospital, Meadville, May 9, three months after an accidental fall in which he sustained a fracture of the hip, aged 67.

Lyman Skeen, Jr., M.D. University of Virginia, Medical Department, Charlottesville, 1895; a member of the American Medical Association, who, after graduation became first assistant in the biologic department of the university and for several years served as instructor in that institution, died at his home in Ogden, Utah, May 14, from tubercular meningitis, after an illness of more than a year, aged 34.

John M. D. France, M.D. University of Georgetown (D. C.) Medical Department, 1865; a pioneer practitioner of St. Joseph, Mo.; organizer of the old St. Joseph Medical College, afterward consolidated with Ensworth Medical College; some-time city and county physician of St. Joseph, who had been suffering from anemia for a year, died suddenly at his home, May 9, from cardiac dilatation, aged 64.

George Leolkes, M.D. Hahnemann Medical College, Philadelphia, 1868; of Belleville, Ill.; a member of the St. Clair County Medical Society, and for several terms a member of the Belleville board of education and library board, died from heart disease at Mullanphy Hospital, St. Louis, May 15, aged 60.

D. Franklin Powell, M.D. Louisville Medical College, 1873, of St. Paul, Minn.; for seven years mayor of La Crosse, Wis.; noted as an Indian fighter and plainsman; a veteran of the Spanish-American War, died suddenly from heart disease, May 8, while on a train eastbound from Los Angeles.

Carl V. Vischer, M.D. Hahnemann Medical College, Philadelphia, 1887, of Philadelphia; one of the organizers of St. Luke's Hospital, Philadelphia, and consulting surgeon at McKinley Memorial Hospital, Trenton, N. J., died in Bellefonte, Pa., May 13, from diabetes, after an illness of six months, aged 37.

Newell L. Johnson, M.D. Department of Medicine of the University of Pennsylvania, 1891, of Williamsport, Pa., a member of the American Medical Association, died in the hospital of the University of Pennsylvania, Philadelphia, from cancer of the colon, May 16, aged 44.

James Wardlaw Pelham, M.D. Jefferson Medical College, Philadelphia, 1888; house surgeon of Blockley Hospital for three years; of Asheville, N. C., died in the Biltmore Hospital, Biltmore, N. C., May 11, from nephritis, after an illness of several years, aged 45.

Thomas W. Evans, M.D. Detroit Medical College, 1871; hospital steward in the Civil War; for 45 years a prominent practitioner of Ross County, Ohio, died at his home in Richmonddale, May 11, from disease of the stomach, after a long illness, aged 66.

Valentine Vermilye, M.D. College of Physicians and Surgeons in the City of New York, 1844, one of the oldest citizens of Sandwich, Ill., died at the home of his daughter in that place, May 7, after a prolonged period of invalidism.

Edwin Forrest Rush, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1878, a great-great grandson of Benjamin Rush, died at his home in Chicago, April 21, after a prolonged illness, from chronic nephritis, aged 54.

John B. Evans, M.D. University of Louisville, Medical Department, 1860, a surgeon in the Confederate service during the Civil War, died at his home in Riley, Ky., from heart disease, after a prolonged illness, May 7, aged 69.

Leroy D. McWayne, M.D. Medical Department of the University of Tennessee, Nashville, 1880, a veteran of the Civil War, died at his home in Hoosick Falls, N. Y., May 10, from chronic nephritis, after a long illness, aged 69.

B. E. Bushaw, M.D. (County License, Indiana, 1897), a member of the American Medical Association, and a prominent practitioner of Marengo, Ind., died suddenly from heart disease, at his home in that place, May 1, aged 65.

William Ferguson Cartmill, M.D., a practitioner in Missouri from 1847 to 1849, and in California for several years, died at his home in Tulare, Cal., March 26, from heart disease, after an illness of 15 days, aged 84.

William Alexander McDonald, M.D. Harvard University Medical School, Boston, 1871, of Lynn, Mass., a member of the Massachusetts Medical Society, died in Lynn, May 11, from cerebral hemorrhage, aged 62.

William J. Collins, M.D. Illinois Medical College, Chicago, 1904; of Geneva, Ind.; a member of the Adams County Medical Society, was struck by a train at Geneva and instantly killed Dec. 3, 1905, aged 39.

George Ralph Breckon, M.D., Toronto University Medical Faculty; a member of the American Medical Association and of the Michigan State Medical Society, died recently at his home in Caledonia, Mich.

Eliza L. Pierce Fountain, M.D. New York Medical College and Hospital for Women, New York City, 1867, died at her home in New York City, May 11, after an illness of five months, aged 69.

Marshall D. Murray, M.D. Medical Department of the University of the South, Sewanee, Tenn., 1895, of Pinewood, S. C., died in St. John's Hospital, Baltimore, May 9, after a long illness, aged 38.

Andrew M. Crawford, M.D. Rush Medical College, Chicago, 1877, a retired practitioner of Denver, died from the effects of an overdose of acetanilid, in his apartments in Denver, May 2.

O. N. Heise, M.D. Medical College of Ohio, Cincinnati, 1886, of Cincinnati, a member of the American Medical Association, died at the home of his sister in Indianapolis, May 15.

James E. Gibson, M.D. St. Louis Medical College, 1860, died at his home in Bissell, St. Louis County, Mo., May 12, from appendicitis, after an illness of one week, aged 70.

Thomas P. Hudson, M.D. Eclectic Medical Institute, Cincinnati, 1859, formerly of Streator, Ill., died in Maize, Kan., May 3, after an illness of five years, aged about 60.

Walter A. Garton, M.D. Temple College, Department of Medicine, Philadelphia, 1899, died in that city from a self-inflicted gunshot wound, May 8, aged 29.

James M. Young, M.D. University of Louisville, Medical Department, 1860, a veteran of the Civil War, died recently at his home in Bloomfield, Ky., aged 68.

Solomon C. Warren, M.D. Hahnemann Medical College, Philadelphia, 1855, died at his home in Syracuse, N. Y., May 7, from cerebral hemorrhage, aged 73.

John W. Tuck, M.D. Louisville Medical College, a Confederate veteran, died at his home in Virgiliana, Va., May 7, after a long illness, from heart disease.

John S. Failing, M.D. University of Buffalo, Medical Department, 1868, formerly of Grand Rapids, Mich., died recently at his home in Los Angeles, Cal.

James E. Kelly, M.D. Albany (N. Y.) Medical College, 1901, died at his home in Saratoga Springs, May 14, after an illness of five months, aged 42.

Milburn McCarty, M.D. Medical Department of the University of Cincinnati, 1866, died at his home in Granger, Texas, May 7, aged 78.

Frances Linton Sharpless, M.D. Woman's Medical College of Philadelphia, died at her home in West Chester, Pa., May 15, aged 50.

B. L. Davis, M.D. New York Homeopathic Medical College and Hospital, 1864, died at his home in Bellevue, Pa., May 15, aged 66.

Judah Isaacs, M.D. Eclectic College of Pennsylvania, Philadelphia, 1861, died at his home in Philadelphia, May 19, aged 72.

John W. Suggs, Jr., M.D. Southern Medical College, Atlanta, Ga., died at his home in Prattsburg, Ga., May 9.

Book Notice

INFECTION, IMMUNITY AND SERUM THERAPY. In Relation to the Infectious Diseases which Attack Man; with Considerations of the Allied Subjects of Agglutination, Precipitation, Hemolysis, etc. By H. T. Ricketts, M.D., Instructor in Pathology, University of Chicago. Cloth. Pp. 600. Illustrated. Price, $2.50. Chicago: American Medical Association Press, 1906.

This book is a reprint of a series of the much appreciated articles on immunity which appeared anonymously in THE JOURNAL during 1905, with a number of additions and such revisions as were made necessary. The type is large and the reading made easy by convenient side headings. The book is divided into two parts, the first dealing with the fundamental principles of infection and immunity, natural and acquired, and the second with the main facts of infection and healing in the various infectious diseases. The author is to be congratulated on the thoroughness, the simplicity, and the clearness with which he presents the intricate and difficult subject largely the outgrowth of the active investigations of the past few years in this field. He has avoided, and we think wisely in a work of this character, any evidence of partisanship as regards the different theories, especially the phagocytic and the humoral, which have dominated these investigations, and particularly because, as knowledge increases, it is becoming more and more evident—and this Dr. Ricketts shows very clearly—that no single theory is applicable to all infectious diseases, but that the mechanisms emphasized by the different theories all play a significant part though not to the same degree in every infectious process. In Dr. Ricketts' book there is made available to the general medical reader desirable and important reliable information concerning immunity and infection now contained in special technical journals not usually in the hands of physicians and students, and the book, therefore, has a distinct field. Only comparatively little of this recent knowledge has found its way into text-books in common use, and then usually in such condensed form as to be difficult to understand. Physicians frequently complain of the fact that they are unable to read intelligently discussions on the subject of immunity and serum therapy because of the many new terms used and the new methods of experimentation. Many of these terms, made necessary by the growth of our knowledge of the subjects in question, have not yet crept into our dictionaries and consequently the reader often is quite helpless in dealing with articles in current literature. The index to this book is unusually complete and will be of great aid to the wide-awake and plastic physician and student who desires to keep in touch with so important a subject.

Miscellany

MY ANSWER TO "MEDICAL FORGERIES."

G. L. Hagen Burger.
BOSTON.

To the Editor:—Unfortunately for Dr. Van Meter,[1] he based his prognosis *a priori* on false premises, as will appear when the curtain falls. Ever since civilized man has been able to peruse the pages of history he finds duality in all things. And so here there are two sides to this question.

My aim in life has been to know, to see, to search, to labor. My life's aim has been, and I hope will be, one of service. Replying to the attack as to my titles, it is, therefore, hard for me to see that I had no right to accept them for the work and research I had rendered. Moreover, my name, which is made the subject of comment, was given me without choice. I have had no other, within my period of memory.

THIS WONDERFUL MEDICAL SAVANT'S HISTORY.

My history differs from that alleged. Some day I will furnish data for Dr. Van Meter to rewrite my real record. Had it been inquired into impartially it would appear that I was born in Hetten Leidelheim, Rhein.-Pfalz, Bayern, Dec. 4, 1864. After the usual training I studied natural sciences in Germany and Holland in the early '80s, and did not graduate, as alleged, from a veterinary college in Brooklyn. I never studied law. During 1890-91-92 I studied toxicology, forensic, preventive and comparative medicine, with other subjects, at the American Veterinary College, State University, New York City. There I took the first prize in comparative anatomy when I received my degree for the mounting and dissecting of a human fetus. In 1894 I passed the municipal service examination for the Bureau of Chemistry, City of New York, with the highest rank (9373 1/30) among sixty applicants, and was appointed to the service, as is evidenced by a copy of paper which I have filed with the editor.

In 1897 I went to Montana and presented my application for examination to the secretary, Dr. Chappell, together with the degree I had received from Kiel, Germany, a year before. I passed the examination and was admitted to practice. The percentages attained are filed with this article and were made by affidavit of Secretary W. C. Riddell. They are as follows: Anatomy, 88; physiology, 80; materia medica, 80; therapeutics, 89; histology, 84; diseases of women and children, 67; chemistry, 72; eye and ear, 79; medical jurisprudence and toxicology, 90; surgery, 81; diseases of the nervous system, 78; obstetrics, 86; preventive medicine, 68.

I agree with Dr. Van Meter that the crucial test of a practitioner's qualifications can not be determined by a diploma. The responsibilities are twofold—on the applicant and the examiner. The man who judges the candidate must be of a superior mind. His sense of justice must be unquestionable. Some such men are on the Colorado State Board. I refer to President Dr. W. T. Miles, Dr. C. K. Fleming, Dr. David Strickler and Dr. G. McHugh. Their kindness to me has fallen on fertile soil, and I shall never give them cause for regret.

"CAREER IN MONTANA AS A SELF-STYLED SPECIALIST IN ABDOMINAL SURGERY."

Had I had my choice in the matter, perhaps fate would have thrown me among other men than gynecologists, but I took what was offered me and have done the best I could ever since.

"HIS FIRST CELIOTOMY ON MRS. A. J. SCHUHMACHER." . .

I wish to state that I had several celiotomies the same month in the same hospital, not mentioning others in which I witnessed and assisted some eminent men, not only in this country, but abroad. With the assistance of Drs. Bernheim and Schultz, the latter city physician of Butte for many years, I operated on Mrs. Schuhmacher for an ovarian tumor, which was removed. The patient recovered from the operation, but was taken with pneumonia three weeks later and died the same night. A copy of the full report of this case, as per record of Sisters' Hospital, Butte, with assistants and consultants, is on file with the editor. At some later date I hope to have published the full report of this case.

Dr. Van Meter refers to her husband's bringing my earthly career to an end and states that "with aching bones and bandaged wounds I left the state between suns." Would that show that he would indorse an assault on an operator who loses a case? This, regardless of conscientious care in the preparation and after-treatment of his case. His attack implicates the other gentlemen who assisted in the operation and after-treatment. What is his purpose? To help our profession? As a matter of fact I was in practice in Montana for three years after that operation and the assault made on me by Schuhmacher. For verification I refer to the courts, Sisters' Hospitals, Butte and Helena, Mont., and to the state and city license collector of the city.

In the spring of 1899, six months after the death of Mrs. Schuhmacher, and while our bills were in the hands of attorneys for collection, Schuhmacher, while intoxicated, assaulted me, when my back was turned, with an iron billy, in my own office, for which offense he was later held under $2,000 bail for assault in the first degree. Out of consideration for his family I refused to prosecute him, for which I was censured by the other physicians, whom he had also threatened. He declared then that he would spend $50,000 to make me all the trouble he could. The methods he used for this purpose will appear later.

Dr. Van Meter goes on to say that a few months after the operation I made my début in Colorado. When an individual is as careless in such serious statements and juggles with time as he does, would it not seem that there is an ulterior motive other than to bring to justice a man who, according to Dr. Van Meter, is neither morally nor educationally fit to practice his profession?

Supposing now, as I have a right to suppose, his peers judge Dr. Van Meter's morale, I fear in advance and sympathize with my accuser that the pendulum swings in a direction other than in his favor.

As to my hobby, I refer to the manuscript read before the Æsculapian Society, Canada, as published by the *Queen's University Journal*, February, 1903. If a pseudo-scientific crank, I am willing to be convinced, but much prefer the opinion of others in my profession if given a chance to be heard.

BOARD'S FIRST KNOWLEDGE OF MY PRACTICING IN COLORADO.

As to the board's first knowledge of my practicing medicine, in which my assailant shows a unilateral palsy in not stating the true facts of the case, he says that I was arrested for reporting a case of smallpox as typhoid. First, I was not arrested, but summoned; second, I reported nothing, as I had nothing to report; third, I was not practicing medicine, but only asked to see a case in consultation with the family physician, which, I thought, I had a perfect right to do as a licensed practitioner from a neighboring state. I was discharged in court, the judge saying that he did not see why I was before him. Here is *nuda veritas*. For verification I refer to the health department, municipal court of Denver, and file a copy of the entire report with the editor.

The first information as to my practicing medicine without a license was not, as Dr. Van Meter alleges, by notification of the board, but through a newspaper article, contemporaneous with the smallpox case. I then called on Dr. Van Meter on Jan. 4, 1902, and informed him that I was not practicing, but only in consultation on the smallpox case. He said it was best to pay him the fee of $5 and leave my credentials with him. The following day I handed my check, my Montana license and my New York Postgraduate Medical School and Hospital certificate to Mrs. Van Meter, in the absence of the doctor, together with a note, in effect that I presented myself with credentials for examination.

PRESENTATION OF CREDENTIALS TO DR. VAN METER.

The following day Dr. Van Meter asked if I had an M.D. degree. I told him that I made my Doctor of Medicine in Kiel, but did not have the degree with me, as it was in Montana, but that I could have it in a few days. He handed me a receipt for the check, which he said was equal to a temporary license. He held in his hand a paper and asked me to sign it, which I did. I was also informed that when the board met I would be told whether I could practice without an examination.

1. THE JOURNAL A. M. A., Feb. 3, 1906, p. 324.

Five or six days later my things arrived from Montana. I presented my degree, which Dr. Van Meter examined, returning it with the query as to how long I had studied at Kiel. I replied that I had never studied at Kiel, that I presented my application and consequent dissertation there while studying in Berlin, where I collected my material for my thesis. He said that the law required that one must have studied three or four years in one school, from which an M.D. degree is received; otherwise the candidate must take an examination. I assured him of my willingness to take the examination, although I had come to Denver merely to present my work to the profession to get their opinion as to its feasibility. He asked me how long I had practiced in Montana, to which I replied, "From the fall of 1897 to several weeks ago."

Several days later a letter from a friend to a well-known physician in Montana, against whom I testified as an expert witness several times with the city coroner, when he was tried for murder as the result of illegal practice, was shown me by Dr. Van Meter. This letter declared, among other things, that the signatures on my degree were non-genuine and that there was no record at Kiel of such a degree. The secretary said there was something wrong with it and asked if he could see my degree again: *Mens sibi conscia recti*, I gave it to him again and consented to his retaining it.

I positively deny in this connection that I was ever asked or ever made to any one connected with this board any sworn statement while applying for registration, but had I been asked I would have readily consented at that time.

At this time Schuhmacher, whom it will be remembered was last mentioned in Montana with the threat on his lips to spend $50,000 in making trouble for me, visited Dr. Van Meter. Living across the street from the latter's office, I saw him emerge frequently from the doctor's office. Why he was there I hope to publish some time hence.

LETTERS FROM MONTANA.

Following these interviews, emanating from the secretary of the board in Colorado, articles of my shady career in Montana were published in the Denver papers, which brought forth inquiries as to my professional character and standing. From former professional associates and members of the Associated Charities Association of Helena, of which I was an executive member during the last two years of my residence in that city, the following replies were received, of which a few excerpts are stated. Copies of the letters are on file with the editor:

HELENA, MONT., Jan. 29, 1902.

Replying to your letter of recent date, I would say that I have been county attorney for the past three years, and, as such, have had to do with criminal charges preferred against anyone residing here. I do not know of any charge ever having been preferred against Dr. Ilugen Burger. So far as I am informed, he is straightforward, honorable, upright man in all his dealings. While a practicing physician in this city, I had occasion several times to use him as a witness in criminal proceedings in our courts here, and found him able, capable, bright, intelligent, and a most excellent witness. I am inclined to think there is a personal grievance which prompts the letter you write.

O. W. MCCONNELL,
County Attorney, Lewis and Clark Co.

Another letter stated that:

He was always regarded highly here, and is so still. We never heard the slightest word against his character or professional standing, and can only think that some personal animosity must be back of these accusations.

Another reply stated:

He has commanded our highest esteem always, and has enjoyed, as far as I know, a good reputation.

DEMAND FOR EXAMINATION.

The publication of these newspaper reports prompted me to consult an attorney, the Hon. J. Warner Mills, who accompanied me to the secretary's office, demanding an examination before the full board. I was abruptly informed by Dr. Van Meter that he was the whole board. He later tried to get the board together, but failed to get a quorum. When I renewed my demands for an examination Van Meter rose from his seat, with an epithet, and rushed for me. My lawyer insisted on an examination before that board, which was refused. The assault attempted was prevented by Mr. Mills stepping between us and ordering him to desist. I informed Dr. Van Meter that I had not come to fight, but to meet the board, as was my privilege.

THE TRIAL.

Several days after this scene a warrant was issued for my arrest on the charge of practicing medicine without a license, for perjury and forgery. I was held under $500 bail, which was promptly furnished without any deception on my part, as alleged. On April 8 I received a letter from the secretary (copy of which is on file with the editor), to the effect that my license was refused, owing to conclusive evidence that the Kiel document I presented was a forgery. I repeatedly requested prosecution, since he had conclusive evidence, and waited from April to July, unable to get a trial. On June 9, on motion of my attorneys to quash the proceedings, Judge Palmer, in granting the motion, as per record of June 9, 1902, No. 15,448, said: "This man made no affidavit under oath, and consequently there can be no perjury. That charge is dismissed. The other charges I will take under consideration."

Later the complaint against me for practicing medicine and forgery was *nol. prossed*, as Dr. Van Meter himself stated, in letters and affidavit, 1903-04, to the Senate of Queen's University, of which copies are in my possession. Compare his accusations with his own affidavits and later publications in this journal. I charge that on his own affidavits or in his articles he has deliberately falsified the facts.

EXAMINATION GRANTED.

After much delay I called on the president, Dr. Miles, in July, and presented myself again for examination. I took the examination at his office, lasting one week, in which I failed. His certificate gives the following rating: Surgery, 46; chemistry, 70; diseases of women, 90; anatomy, 11.5; physiology, 70; practice of medicine, 50; pathology, 87.5. Kindly note difference in rating.

After reading my three papers in which I failed to President Miles, he said that he was in favor of my reading my entire papers before the full board. Some members refused to attend the meeting. Dr. Miles then suggested that I read my papers to them at their offices. Some gave me an audience and others refused. I reported the matter to Dr. Miles, July 23, and on August 9 he said (and I quote Dr. Miles' words *verbatim*): "Doctor, you ought to have your license. I am in favor of it and that your papers shall be read before the whole board." Two letters received from members of the board were shown Dr. Miles, who said: "Now, doctor, I believe there are some members of the board prejudiced against you because of the scrap you had with Van Meter."

Finally, after several months, by consent of the board, I had typewritten copies made by their stenographer, every page compared and sworn to and open for the inspection of any member of the profession, as it appears by affidavit, a copy of which is filed with the editor. I mandamused the board to grant me a license. Some of the members suggested that I go somewhere else to practice. I replied: "I have done nothing wrong here. Why should I go away? Your secretary must prosecute me first and make good his threats."

OPINIONS OF OTHER PHYSICIANS.

I submitted my papers to men of high professional standing in Denver and other cities. Some of their replies I append in brief. These copies of letters are on file with the editor. From Dr. George C. Stemen, for fifteen years professor of surgery in the Fort Wayne College of Medicine, now a member of said board in Denver, I received the following:

I unhesitatingly say that the papers submitted to me are among the best I have ever examined, and show beyond question of doubt that the applicant is qualified in every department of medical science, and above the average among medical men.

From Dr. Bates, professor of anatomy, Women's Medical College, Northwestern University, Chicago, from 1883 to 1889, the following was received:

They give ample evidence of his medical knowledge and of his unusual thoroughness and scientific character, and that he is an earnest and constant student, an ethical physician, and possessed of the highest ideals of the duties and privileges of our profession."

Dr. Hart's letter states:

Reading your examination papers, I was a member of that board many years, and never saw papers showing the competency yours did.

The above attestations as to my medical attainments are of themselves answers to Dr. Van Meter's accusations that I lack

revious education and am of the country bumpkin type of udent. Many of this class helped to make history what is.

MY STAY IN NEW YORK.

I have said that the charges preferred by Dr. Van Meter hrough the county attorney at Denver were *nol. prossed.* efore this was granted, after requesting trial many times p to November 1, and failing, at the suggestion of my bonds- an and attorney I determined to get evidence to support the ioral side of my case, in this country first, and, failing, to go > Germany. Accordingly I left Denver Nov. 1, 1902, for ew York, where I presented my case to Dr. J. R.. repre- ntative of the German consul-general in New York City. pecial investigation revealed the fact that there was no ecord of the degree granted me at Kiel and that the signa- ures were denied.

This made me more desirous than ever to go to Kiel and to scertain the identity of the persons responsible for my calam- y. I was taken ill at that time and confined to bed for five eeks. After recovery I had another consultation with the onsul's representative, who again advised me I could do othing effective in Germany, since I was reduced physically nd financially to a minimum. At the same time I received dvice from my bondsman stating that the case would be discon- inued and advising me to go to no further expense. My pro- essional friends in New York concurred in the following ad- ice given me by Dr. Niles in Denver, in July, 1902: "Doctor, ow listen to me; go to any good school which will admit you in he final year, get your degree, come back and nothing further vill be done in the matter."

I acted on the advice given and went to Queen's University nd notified my attorney and bondsman to that effect, offering o come back any time if wanted. I was notified that it was ot necessary, unless I wished to proceed with the mandamus rit.

THE ALLEGED FRAUD PRACTICED ON QUEEN'S UNIVERSITY.

As to my alleged fraud practiced on Queen's University in ny entrance and final examination, there is nothing so sublime s a fact. The records of the university will not show that I resented any degree of any German or other university, as roved in the Senate hearing on Dec. 20, 1905, on which hear- ng I insisted, after a lengthy correspondence, as per letter nd request of June 5, 1905, to the dean of the medical fac- lty. I also offer affidavit of Arthur McCabe, M.D., as fol- ows:

GLOUCESTER, March 3, 1906.

This is to certify that I was with Dr. G. L. Hagen Burger in Kingston when he presented his credentials to the secretary of the Faculty of Queen's University; that he did not present any German degree, that he did not state that he was a graduate of any col- ege or an M.D., but simply a licentiate from the state of Montana; hat I was present when he was told that he could register with the credentials which he presented to the secretary of the faculty. Sworn and subscribed.

As to my final standing in examinations, I quote my per- centages from the blackboard of the university and *British Daily Whig*, April 8, 1903:

Written and oral examination in mental diseases, 95 per cent.; enior practice of medicine, thirty-ninth place; clinical medicine. ixth place; senior obstetrics and gynecology, seventh place; linical pathology, thirty-third place; surgery and surgical anatomy, nknown to me.

As to my fellowship degree of the Royal College of Physi- ians and Surgeons, this was granted me on April 4, 1903, by he censors, Prof. Fowler, dean of Queen's University, and Prof. M. Sullivan, member of parliament and professor of sur- gery, and Prof. E. Ryan, professor of anatomy, on the presen- ation of a thesis on original feeding experiments on chickens y feeding with meat, and the production of gouty arthritis vith pathologic specimens and microscopic findings, as well as n oral examination, lasting four hours, covering scientific ubjects in medicine.

As to my desire for unearned professional titles, I file copy vith the editor of Professor Sullivan's convocation address, April 8, 1903, in which he referred to two gentlemen who were warded this year the fellowship degree by the faculty of Royal College of Physicians and Surgeons, and who were well vorthy of the honor for the scientific research work they had endered, etc.

ALLEGED IMPOSITION PRACTICED ON MASSACHUSETTS STATE BOARD OF MEDICAL EXAMINERS.

As to the imposition practiced on the State Board of Medical Examiners and Censors of the Massachusetts Medical Society, I offer the following, through the kindness of Drs. Harvey and Crandon, secretaries:

Surgery, 77.5; physiology and hygiene, 64; pathology, 81; obstetrics and gynecology, 77; diagnosis and practice of medicine, 84; anatomy, 66; general average, 74.9 (Dr. Harvey).

Dr. Hagen Burger passed with a percentage of 72; 60 per cent. is necessary to pass (Dr. Crandon).

In April, 1903, I was engaged by the College of Physicians and Surgeons of Boston to instruct third and fourth year students in clinical diagnosis and lecture on gynecology, which I did during that semester. In April, 1904, I was appointed, on the recommendation of two of Boston's eminent professors of surgery in one of its universities, as gynecologist to the Mt. Sinai Hospital (as per letter on file with the editor). In this capacity I have served ever since, as shown in the following extract from a letter received from the president of the board of trustees of that hospital:

Jan. 25, 1906.

. . . We have been more than pleased with the manner in which you conduct your clinics, the great interest you have shown in the development of this institution and the care you have taken in treating the patients in your department. All are greatly appreciated by us (Leon Pickert, president).

In the fall of 1904 I applied to the Boston City Hospital for clinical work and was appointed as volunteer assistant. A copy of this letter is also on file with the editor.

MY OLD-TIME EFFRONTERY.

I came to Boston to practice my profession after being licensed, and in an humble and ethical way attended to my clinical work and teaching, and with the moral assistance of my brother physicians, to many of whom I am greatly indebted, I gained a foothold in the Athens of America, notwithstanding the obstacles Van Meter has placed in my way, as evidenced by letters sent to the Massachusetts State Board of Medical Examiners, the Massachusetts Medical Society and Queen's University, copies of which are in my possession. All this time I have worked with a view to enabling me to go to Germany when the proper time comes and to learn how much I have imposed or how much I have been imposed on, also the methods by which others seemingly made me an imposition. Until then, and until the Senate of Queen's University has spoken, it would be premature for me to say anything further about the degree.

MY ASSISTANTSHIP IN CLINICS.

I said that I was in Chauta's, Kehrer's and Leopold's clinics. In regard to other clinics I said, "late at," meaning that I had done clinical work under the direction of the men in charge, as volunteer and hospitant, usually called "hospitieren." I mentioned that I was last in Boston at Cabot's and Hewes' clinic and laboratory, and said nothing about having been an assistant there. Statements otherwise are either a mistake or a misprint by some one. Through the courtesy of Dr. Cabot I utilized my mornings in his clinic waiting for Dr. Hewes to return from his vacation, to take his laboratory course.

MY OVERFLOWING WITH PERSONAL PROCLAMATIONS OF SKILL.

I know nothing of these. I am a good listener to a physician who talks shop, and I will express an opinion when asked, when I have one; if not, I say I do not know and try to learn. Anyone who has ever been associated with me on a case in the past will testify that I leave no stone unturned to help my patient with all available and scientific means known to me, regardless of whether I receive a guerdon or not. When in doubt I seek counsel of older and wiser heads. Often I have been in doubt and never have I been afflicted with the egoism of the "know-it-all" doctor.

MY "UNFAILING NERVE."

This is the courage resulting from the consciousness of having done and of doing no wrong.

DR. VAN METER'S STUDY OF CHARACTER.

Since character makes its own destiny, I fear naught, not even malice. Never does a man portray his own character better than in the manner in which he portrays another's.

MY TOTAL DISREGARD OF THE CONSEQUENCES OF MY WRONGDOINGS.

Let me say this: I feel that I know right from wrong and am aware of the consequences of wrong. Furthermore, I know of no instance in Europe or this country where I have willfully deceived or defrauded anyone. I am willing to feel that "heavy hand of the law" for any crime I have committed, as I have never shirked my duty knowingly anywhere, and fully believe in the maxim, *Salus populi, suprema lex.* I know right from wrong to such a degree that even now I am endeavoring to teach Van Meter a better and a nobler aim in life than the persecution of one whose every energy is bent on the education and uplifting of suffering humanity, and one who is ever arrayed on that side of the profession and society that works toward that achievement.

MY SANITY.

I know full well, as a physician, the responsibility and trust vested in me, but am further willing for the benefit of mankind to have a committee of psychiatrists appointed, excluding Dr. Van Meter, of course, to pass judgment on me, and, if declared *non compos mentis*, or a criminal, as my assailant designates me, to abide by their council and decision. Moreover, I would ask their help, if possible, to overcome the depraved, moral and criminal instincts this close observer of human nature has detected in my character, "inspite of his self-esteem as a reader of human nature." *O vanitas, vanitatum!*

His sophistry and paralogism evidently know no bounds. I am ever ready and willing to improve myself, and no man recognizes more than I the dictum that "individual improvement is the only keynote to progress universal."

I know that I have many faults and often err. Who has not? But such deep chrome yellow epithets as "bunco steerer," "scamp," "scoundrel," "impious wretch," "arch medical impostor," and "criminal of the worst type," I resent. They are false and malicious. I further deny that I offered knowingly any false or forged evidence before any state board, in the West, in Massachusetts, or to any university in Canada.

I challenge Dr. Van Meter to come to Massachusetts and to Canada, and to prove his accusations. I am as willing to be prosecuted here as I was in Denver, where I waited and pleaded eight months for a trial.

CONCLUSION.

In conclusion I would suggest to this now self-styled famous author of "Medical Forgeries," that the asylum of oblivion is full of moral assassins.

"Authors and readers now find, as once Achilles found,
The whole is doubtful, where are so many parts unsound."

Dr. Van Meter's Reply.

A copy of the above was sent to Dr. Van Meter, who writes:

"The foregoing answer to 'Medical Forgeries' is such a garbled misstatement of facts and assertions of that which is untrue that it does not demand from me anything further than a general denial.

"The reproduction of the forged Kiel diploma; the admission on the part of Hagen Burger that 'special investigation revealed the fact that there was no record of the degree granted me at Kiel and that the signatures were denied;' and the following letter from the dean of Queen's University are all-sufficient to convince any doubting Thomas as to the true character of the man."

MEDICAL FACULTY, QUEEN'S UNIVERSITY,
KINGSTON, ONT., Dec. 23, 1904.

D. S. D. Van Meter, Denver, Colo.:

Dear Sir:—In reply to your letter of the 19th, I beg to say that Hagen Burger is without doubt the same man who recently received our degree of M.D.

He came to us in the fall of 1902, and presented a German degree, certificates of license to practice in the states of Colorado and of Maine and a certificate of having been an inspector for the board of health in New York for four years. On the strength of these he was admitted to fourth-year standing. At the spring examinations in 1903 he failed to qualify. In September, 1904, he appeared for supplementary examinations and passed.

At a meeting of the faculty held to-day the matter was referred to me to consult with the solicitors of the university as to revoking his degree. When in Boston the early part of this week I saw his sign in a window on Massachusetts Avenue, near the corner of Huntingdon Avenue. One of my former students told me this was the man who was registered with us two years ago.

I am obliged to you for your information, and your courtesy in writing so fully. I also return his letter. About the date of your affidavit he came here. Did he leave to avoid the criminal action against him? Was the trial completed or does it still stand?

J. C. CONNELL, Dean.

A STUDY IN PERSONAL HYGIENE.

Thomas Scott Lowden has made a study[1] of the care taken by Americans in regard to their health based on the responses to a questionnaire on "Keeping Well" sent out by President Hall of Clark University.

The questions were asked in some detail relating to: 1. The disease feared. 2. Affectation or feigning of illness, and what aroused the desire for health. 3. Habits regarding food. 4. Use of medicines. 5. Toilet appliances. 6. Sleep. 7. Exercise. 8. Dress. 9. Work and study. 10. Precautions against inherited disease. 11. Epidemics. 12. Experience with quacks and "patent medicines." 13. Results of experience of sickness on personal regimen. 14. Views regarding exposure, etc. 15. Sexual hygiene. 16. Mental states and environment. 17. Sketch of an ideal life to maintain oneself at the top of his condition and live as long as possible.

The questions were addressed to intelligent people who were interested in health, morals and education. Personal hygienic experience was sought, not theories. Four hundred and fifty manuscripts were returned by students, teachers, professors, physicians, ministers, and the public generally. The papers exhibited a sane view of the subject with little tendency to awaken morbid interest. Seventy per cent. of those answering the question fear disease, 38 per cent. of these from heredity 13 per cent. from personal experience, and the rest from observation or report. The author quotes several answers showing "what a nightmare weight hereditary fear, whether well founded or imagined, is likely to become." The precautions taken against heredity show some understanding of hygiene and some are doubtless doing all for themselves that can be done. The answers in regard to the affectation of invalidism are peculiarly significant. One hundred and twelve answer affirmatively and about an equal number negatively. The papers indicate that it is the feminine sex that is given to feigning illness for the sake of sympathy, to attract attention, etc. Boys sometimes do so to avoid work.

Of 255, 44 per cent. eat some particular food for the sake of health, and 62 per cent. are obliged to abstain from some kinds of food. Three meals is the rule, and the spirit of the papers is strong against the "no breakfast" idea. Bolting food is objected to. Vegetables and fruit are the leading foods, but nearly all want meat once a day, the average twice so that no tendency to vegetarianism is shown. Water is the preferred drink. Coffee is abstained from by some for fear of headache and taken by others to prevent it. Many can not get a reaction after the cold bath, but those who do, find it highly beneficial. All testify to the benefits of rubbing the body after the bath. Massage is not much practiced. Reports regarding cosmetics are meager. Many are trying to improve the skin and complexion through general hygiene. The evidence shows a lack of care of the bust, hands, feet and teeth. The usual time of sleeping is from 10 p. m. to 6 a. m. Three times as many report nine hours' sleep as seven; most sleep on a medium hard mattress, with light covering, in a thoroughly ventilated room; most completely change the clothes worn during the day. The very few who resort to drugs to induce sleep have found the after-effects evil. The greater number speak against eating before going to bed, but some find it a help. Various methods of inducing sleep are described.

Walking is the most general form of exercise, but other special forms are favored by a few. There is strong opposition to "apparatus exercise"; neither gymnasium nor bedroom apparatus is in high favor, nor the more violent forms of exercise. Most of the women wear corsets.

The author believes that more intelligent people resort t

1 A dissertation submitted to the faculty of Clark University, Worcester, Mass., in partial fulfilment of the requirements for the degree of Doctor of Philosophy and accepted on the recommendation of G. Stanley Hall. Pedagogical Seminary, March, 1906, vol. xiii

uackery than the returns indicate. All who report having ad such experience deplore it. The papers from Poland show nuch faith in quackery. The quack in Poland is usually some ld woman herb doctor and the faith element undoubtedly nters into the real or supposed cure. The answers of the nen in regard to sexual matters show the evils of ignorance n regard to physiologic sexual function. The escape of semen s regarded as abnormal and leads many to resort to quacks r advertised nostrums.

The second chapter deals with the question of medicine and uackery and makes interesting and profitable reading. The ollowing questionnaire was submitted to druggists:

1. *Have "patent medicines" any merit?* The majority of druggists agreed that they have no merit, unless, from the lcohol which they contain. The danger from alcohol in medines, supposed to contain none, and especially the danger from he substitution of wood alcohol, is emphasized. The price it which the "patent medicines", comparatively harmless, are old makes them fraudulent. "All evidence from druggists, chemists, physicians and medical journals amasses itself to prove that 'patent medicines' are costly and dangerous to body, mind, life and morals, and that their producers are deceivers and robbers."

2. *What sells "patent medicines"?* There was but one answer given by all druggists visited. "'Patent medicines' are sold wholly through the susceptibility of the people to advertisements."

3. *Who buy "patent medicines"?* The sales, by no means, are confined to the poor and ignorant. The rich and intelligent buy much. One druggist says, "The ministers of the city are among my best 'patent-medicine' customers." Six druggists report that at least 75 per cent. of all "patent medicine" is taken by women. "Patent medicine" is given to the children and consumed largely by the young, but the real "patent-medicine" period sets in about 28 or 30 and lasts until 55, use being most marked between 40 and 50. The medicine sold depends partly on fashion, but mostly on efficient advertising.

4. *Do physicians make use of "patent medicines"?* One-third of the druggists visited state that the physicians that deal with them make more or less use of "patent medicines". All, however, emphasized the fact that the majority rely almost wholly on the pharmaceutic compounds. Six druggists said physicians buy "patents" of them, change the label, or put the medicine into their own bottles under their labels. "It may be said that the physician generally frowns heavily on 'patents', compounds little himself or has his druggnst to do it, but resorts to the compounds sent out by the pharmaceutical houses." One druggist says: "The physician frequently does not know what he is giving. It is not infrequently hit or miss with him as in diagnosing diseases. Physicians are as gullible as the laity. A live up-to-date agent of a compounding house can sell them most anything, as our full shelves of this sort of stuff show."

5. *What is your estimate of the work of the average physician?* According to the druggists "the average physician is incompetent, knows neither disease nor medicine; neither the science nor the art of his so-called profession; has little interest in his work other than a commercial one; will stoop to any practice for money, and the drug business is being constantly lowered by his demands."

It is impossible to believe that the use of "patent medicines" by physicians is sufficiently common to justify the above statements or that many intelligent druggists entertain the sentiments toward the medical profession attributed to them by the author. In his investigations he must unfortunately have come in communication with pharmacists actuated by jealousy or who had been criticised for counter prescribing. It is believed that the medical profession is weak on the side of mental therapeutics. The physician is often unable to apply the stimulus of a strong personality.

6. *What do you know of the advertising doctor and the quack?* "All evidence goes to show that the advertising doctor is flourishing and is steadily on the increase. Physicians state that comparatively few men having private diseases have gone to them. More resort to the druggist, but the majority seek assistance of the traveling doctor and 'advertiser,' who are successful in playing on the whole gamut of fears and succeed in robbing thousands who have no sex ailments. The newspapers are accomplices in this nefarious work. Recently one of the leading dailies had six full columns on one page, besides scattered notices, devoted to doctors advertising 'lost-manhood cures.'"

7. *What is your opinion of the drug business as it is conducted today?* Of the thirty-five druggists interviewed, not one is satisfied with the business. The older druggists say the business is no longer so clean nor professional as it used to be.

The third chapter deals with the relations of emotion and health, recognizing the injurious effects of worry, anger and depressing emotions. The influence of pessimism is contrasted with the life-joy "that knows no bounds, welling out of the animal surplus, the source of all real health. The remote end of personal hygiene is racial welfare."

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

COLLECTION AGENCY.

WICHITA, KANS., May 15, 1906.

To the Editor:—I understand that there is a collection agency somewhere that makes a business of finding and collecting from railroad men, no matter where they are, so long as they are in the United States and in the employ of a railroad company. Can you give me the address of this concern. C. E. CASWELL, M.D.

THE PHYSICIAN AND THE AUTOMOBILE.

HAVERSTRAW, N. Y., May 6, 1906.

DR. N. B. BAYLEY, Haverstraw, N. Y., writes: "I live in a moderately hilly country, with fair roads, but a ten-horse power machine does not fill the bill satisfactorily, I know that is the trouble with many other men. It is better to wait until one can buy a satisfactory car; it will save work and worry. My conclusions, based on experience and observation, are that to find satisfactory results the following factors must appertain: Either there must be mechanical ability to meet all ordinary difficulties that arise, or financial ability to employ competent assistance always at hand to keep the car in order and to drive. Also, the motor car must have reserve power sufficient to meet the exigencies constantly arising in a physician's practice. To traverse hills or bad, muddy roads with ease requires more power than the majority of runabouts possess, without straining the engines to their full limit, entailing, as a consequence, frequent overhauling. In a locality with hard roads a car with less power may give good service, but oftener a physician's car needs as much power as an ordinary tonneau car, which, with intelligent care and its reserve power will be an agent of pleasure and profit.

WATER PURIFICATION.

KAUFMAN, TEXAS, May 11, 1906.

To the Editor:—Please inform me through THE JOURNAL whether or not water settled with alum (℥iv to 800 gal.) and used for household purposes, has any injurious effects. C. M. GRIGSBY.

ANSWER.—The use of alum and similar coagulants should be adjusted to the alkalinity of the water to be tested. In some waters where the natural alkalinity is deficient, provision should be made for increasing it to the extent necessary for the use of the amount of coagulant required for complete purification. When this is done there is no reason to suppose that the use of these substances in proper proportions is injurious to health. We may add that sulphate of alumina is much more commonly used than alum as a coagulating material. Copperas (ferro-sulphate) together with lime has also been successfully used.

State Boards of Registration

COMING EXAMINATIONS.

NEBRASKA State Board of Health, State House, Lincoln, May 29-30. Secretary, George H. Brash, Beatrice.

MINNESOTA State Board of Medical Examiners, Old State Capitol Building, St. Paul, June 5-7. Secretary, O. E. Linjer, Minneapolis.

WYOMING Board of Medical Examiners, State Capitol, Cheyenne, June 6. Secretary, S. B. Miller, Laramie.

MICHIGAN State Board of Registration in Medicine, Ann Arbor, June 12. Secretary, B. D. Harison, Sault Ste Marie.

TEXAS State Board of Medical Examiners, Dallas, June 12. Secretary, T. T. Jackson, San Antonio.

OHIO State Board of Medical Registration and Examination, Cincinnati, Cleveland and Columbus, June 12-14. Secretary, George H. Matson, Columbus.

BOARD representing the Medical Society of Delaware and Board representing the Homeopathic Medical Society of Delaware State and Peninsula, former held at Dover, and latter at Washington, June 19. Secretary, P. W. Tomlinson, Wilmington.

NEW JERSEY State Board of Medical Examiners, Trenton, June 19-20. Secretary, E. L. B. Godfrey, Camden.

NEW YORK Boards of Medical Examiners, Albany, June 19-22. Secretary, Charles F. Wheelock, Albany.

PENNSYLVANIA State Board of Medical Examiners, Annex Hotel, Pittsburg, and North Building, Philadelphia, June 19-22. Secretary, Joseph E. Willetts, Pittsburg.

VIRGINIA State Board of Medical Examiners, Richmond, June 19-22. Secretary, R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, Baltimore, June 20-23. Secretary, J. McP. Scott, Hagerstown.

SOUTH CAROLINA State Board of Medical Examiners, Columbia, June 26. Secretary, W. M. Lester, Columbia.

District of Columbia April Report.—Dr. W. C. Woodward, secretary of the Board of Medical Supervisors of the District of Columbia, reports the written examination held at Washington, April 12-16, 1906. The number of subjects examined in was 17; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 18, of whom 12 passed and 6 failed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
Baltimore Med. Coll.	(1905)	79.5
Boston University	(1899)	89.6
Georgetown University	(1905)	75.2
George Washington University	(1905) 79.6	79.9, 88
Hahnemann Med. Coll., Philadelphia	(1900)	88.8
Howard University	(1904)	78.9
Jefferson Med. Coll.	(1902)	82.2
University of Illinois	(1902)	82.8
University of Pennsylvania	(1898)	86.5
Woman's Med. Coll., Philadelphia	(1904)	75.2

	FAILED.	
Georgetown University	(1905)	73.8
George Washington University	(1905) 49.9, 68,	73
Howard University	(1905)	71.3
Missouri Med. Coll.	(1896)	58.2

Florida April Report. Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of Florida, reports the examination held at Gainesville, April 16-17, 1906. Forty-nine applicants were registered, 6 withdrew and 5 failed. Two were granted certificates under the old law, having practiced in the state prior to the passage of the act creating examining boards, and 36 passed the examination. Under the law no member of the board can issue a second temporary license. An average of 75 per cent. is required to pass. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
Jefferson Med. Coll.	(1886) 79; (1887)	81
College of P. and S., Baltimore	(1890) 80; (1905)	88.
Atlanta Med. Coll.	(1895)	76.2
Meharry Med. Coll.	(1902) 88; (1906)	81
Bellevue Med. Coll.	(1898)	88.5
Fort Worth University	(1905)	92.5
University of Maryland	(1897) 87.2; (1904)	90.5
Birmingham Med. Coll.	(1904)	84, 90
Vanderbilt University	(1898)	89
Maryland Med. Coll.	(1904) 83; (1906)	81
University of Georgia	(1906)	81, 89
Atlanta Coll. of P. and S.	(1906)	79, 86
St. Louis Coll. of P. and S.	(1905)	77
Atlanta College of Medicine	(1906)	89
Queen's University, Ontario	(1903)	84
Howard University	(1902)	82.1
University of the South	(1901)	75
Medico-Chirurgical College, Phila.	(1904) 92.4; (1905)	87.4
Medical College of Virginia	(1905)	80
Medical College of Alabama	(1902)	89
Manitoba Med. Coll.	(1905)	91
University of Nashville	(1897)	90.4
University of Virginia	(1905)	89
University of Arkansas	(1905)	85.2
University of Palermo, Italy	(1903)	82.7
Barnes Med. Coll.	(1905)	75
Milwaukee Med. Coll.	(1903)	81

	FAILED	
Meharry Med. Coll.	(1905) 54.7, 58.1; (1906)	47.2
University of Palermo, Italy	(1898)	70.8
Barnes Med. Coll.	(1898)	65

Minnesota April Report.—Dr. W. S. Fullerton of the Minnesota State Board of Medical Examiners reports the written examination held at St. Paul, April 3-5, 1906. The number of subjects examined in was 16; total number of questions asked, 93, percentage required to pass, 75. The total number of candidates examined was 19, of whom 14 passed and failed. The following colleges were represented:

College.	PASSED. Year Grad.	Per Cent.
Northwestern University	(1901) 87.7; (1905)	82
Laval University, Quebec	(1905)	77
University of Christiania, Norway	(1895)	83
Imperial Alexander University, Helsingfors, Finland	(1886)	84
College of P. and S., Chicago	(1904)	80
Hamline University	(1900) 75; (1905)	78
Rush Med. Coll.	(1897) 79.2; (1905)	83
University of Minnesota	(1905)	78
Baltimore Med. Coll.	(1902)	79
Omaha Med. Coll.	(1902)	80
University of Michigan	(1890)	83

	FAILED.	
Queen's University, Ontario	(1905)	72
Hamline University	(1905)	71
University of Minnesota	(1905) 57.8,	72
Milwaukee Med. Coll.	(1904)	71

At the last meeting of the board five reciprocal licenses we granted.

At this examination the following questions were asked:

MEDICINE.

1. What are the early symptoms and physical signs of tube culosis of the lungs? 2. What findings by palpation, auscultati and percussion of the cardiac region would warrant the diagnos of mitral stenosis? 3. What diseases cause enlargement of th liver? 4. Describe purpura hemorrhagica. 5. Give the patholog symptoms and prognosis of infantile paralysis (poliomyelitis a terior acuta). 6. Prescribe a no-milk diet for a child of s months suffering from acute gastrointestinal disorder. 7. Give th chief points of distinction between the epileptic and the hysteric convulsion. 8. Describe and treat a case of scabies. 9. Differe tiate in parallel columns between the chancre and the chancroi 10. Trichina spiralis: its source in man and its life history.

PATHOLOGY AND BACTERIOLOGY.

1. Describe pathologic changes of intestines in case of typho fever. 2. Give pathology of acute lobar pneumonia. 3. Descril pathology of atrophic cirrhosis of liver: What causes the abdomin dropsy in such cases? 4. Describe pathology of atheroma of a lar artery. 5. Give pathologic changes of spinal cord in locomot ataxia. 6. Mention bacteria that are known as the common caus of inflammation and suppuration. 7. On what scientific facts is th serum therapy based? Illustrate case. 8. Describe method microscopic examination for tubercle bacilli. 9. Name portals infection and dissemination of typhoid bacillus. 10. What do yo understand by mixed infection? Illustrate case.

ANATOMY AND HISTOLOGY.

1. Describe the heart briefly and give its nutritive blood supp and its nerve supply. 2. Describe the palmar fascia fully. 3. Nam the leucocytes and describe each one. 4. Diagram a typical mucot membrane and name the structures composing it. 5. Name th branches of the abdominal aorta. 6. Name the varieties of epith lium and diagram each one. 7. Give origin, course and terminatio of long saphenous vein. 8. Describe the rectum and give the bloc and nerve supply. 9. Describe a Peyers' patch and where foun 10. Describe a lobule of the liver, dingram preferred.

PHYSIOLOGY.

1. Locate and describe and give function of glomerulus of kl ney. 2. Locate and describe and give function of spleen. 3. San of pancreas. 4. Describe the general circulation. 5. How is th normal temperature of the body maintained? 6. Describe and e plain the normal heart sounds. 7. Describe the lymphatic syste 8. What are the chief differences of function between the two ner ous systems, cerebrospinal and sympathetic? 9. Describe the po tal circulation. 10. What are proteids and what are the variou steps in their preparation, and, finally, how do they reach the ge eral circulation?

OBSTETRICS.

1. Give recognized causes and preventive treatment of puerper eclampsia. 2. Describe the normal lochia. Give significance of l suppression. Fetid odor. 3. Give your method of delivering th after-coming head in cases of breech presentation. 4. How woul you diagnose death of the fetus in utero at the fourth month pregnancy? 5. Alarming hemorrhage begins immediately after d livery of placenta; uterus fails to contract. Give your active trea ment.

DISEASES OF WOMEN.

1. What are the principal causes of displacement of the uterus 2. Give three common causes of sterility in the female and trea ment for same. 3. Describe fully the ovaries and Fallopian tub and state what are their natural supports. 4. Give symptoms prolapse of the ovary and treatment for same. 5. Give early sym toms of cancer of the uterine cervix. Differentiate from cyst degeneration; simple ulceration.

CHEMISTRY, TOXICOLOGY AND URINALYSIS.

1. Define atomic weight, molecular weight, specific gravity, chem ical reaction, chemical formula. 2. Give the boiling and freezin point of water in the centigrade, Fahrenheit and Reaumur the mometric scales. 3. What is actinism? 4. What is an alloy? Give symptoms and treatment of acute cocain poisoning. 6. Giv symptoms and treatment of plumbism. 7. Give one reliable test fo albumin in urine. 8. Give one reliable test for sugar in urin 9. Give a chemical test for pus in urine. 10. Describe Ehrlich diazo reaction test for urine and the clinical significance of th diazo reaction when present.

MEDICAL JURISPRUDENCE.

1. Give two positive signs of death. 2. What are the duties the coroner's jury? 3. What is the difference between an ordinar

witness and an expert witness? 4. What constitutes a dying declaration? 5. Is a licensed physician exempt from jury duty in the courts of justice in this state?

PREVENTIVE MEDICINE.

1. Give some practical suggestions that would lessen the spread of tuberculosis. 2. What diseases are commonly transmitted through drinking water? 3. What prophylactic measures would you recommend for the prevention of typhoid fever? 4. Give a practical method of obtaining pure drinking water for the home. 5. Give a simple, practical method of ventilating buildings in this climate in the winter season.

HOMEOPATHIC MATERIA MEDICA.

1. Differentiate aconite, arsenic, hel. and gels. in fevers. 2. What three remedies are often indicated in typhoid fever? Give prominent symptoms of each, indicating their use. 3. Give symptoms indicating the use of bry, phos., ferr. phos., veratrum in pneumonia. 4. Name three remedies usually indicated in case of cholera morbus. 5. Give three leading symptoms for lyc. lach. podo. china. 6. Differentiate between sniph. mezereum, graphites and rhus. in skin troubles. 8. What is meant by dilution, potency, polychrest?

SURGERY.

1. What is dacryocystitis? Causes, symptoms, treatment. 2. What are the most usual causes of iritis? Give differential diagnosis and treatment. 3. What is trichiasis, a chalazion; granular ophthalmia, nystagmus? 4. What conditions cause deafness in children? 5. Give etiology, symptoms and treatment of mastoiditis. 6. What is a Potts' fracture? Give treatment. 7. Diagnose fracture of hip. Give treatment. 8. Given a crushing injury of a limb, what symptoms would cause you to advise amputation? Give technic of operation at junction of lower and middle third of leg, naming the tissues ent through. 9. Give the usual dislocation of the elbow. Give diagnosis and treatment of the condition. 10. How do you differentiate concussion from compression of the brain? 11. Give treatment for strangulated hernia. Describe operation for inguinal hernia. 12. Give differential diagnosis between appendicitis, salpingitis, stone in ureter, colic. 13. What conditions would cause you to choose chloroform or ether in a case? Give precautions to be observed in administering each.

MATERIA MEDICA AND THERAPEUTICS.

1. Name two extensively used alkaloidal derivitives of morphia (not salts of morphia), stating what salt of each is commonly used, purposes and dosage. 2. A child 18 months old has been allowed the ordinary table diet of the family; you are called suddenly to see it in convulsions; describe fully how you would treat it. 3. Write a prescription for calomel combined with ipecac and bicarbonate of soda, to be given in divided doses hourly for twelve hours to a child 2 years old. 4. What physiologic action of veratrum renders it particularly safe in the matter of dosage? 5. When is digitalis indicated in organic heart disease and when contraindicated? 6. Name the most generally useful emetic and give the reason for your opinion. 7. Outline briefly and clearly the proper management of a case of acute nephritis. 8. During the course of the above case, (*a*) what threatened emergency would warrant full doses of elaterium or croton oil, and (*b*) what symptoms would signal the approach of such an emergency? 9. State the dose of each of the following that you would give, together with frequency of repetition, under the conditions named: (*a*) Arsenous acid, as an alterative; (*b*) antimonii et potas. tart., as an expectorant; (*c*) tr. veratri, U. S. P., 1900, in the first stage of sthenic croupous pneumonia; (*d*) tr. strophanthi, U. S. P., 1900, in aortic regurgitation with venous stasis; (*e*) sulfonal, as a hypnotic. 10. Criticise the following prescription:

R. Solut. strychniæ sulphat. (gr. i to 3i).....3i
Spts. ammoniæ aromat. q. s. ad.....3ii
Misce et sig. Half a dram in water before each meal.

Rhode Island April Report.—In the report of the examination held at Providence, April 5, 1906, published in THE JOURNAL, May 12, 1906, page 1468, one candidate, a graduate of Tuft's College Medical School, 1905, was reported as having failed. We are now informed that this candidate's papers have been reconsidered and that he has passed.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending May 19, 1906:

Perley, H. O., deputy surgeon general, Glennan, James D., surgeon, Straub, Paul F., surgeon, appointed members of a board of medical officers to meet at West Point, N. Y., about June 1, 1906, for the physical examination of the cadets of each class at the U. S. Military Academy, and such candidates for admission as may be ordered to appear before it.

Stephenson, Wm., surgeon, Russell, F. F., asst.-surgeon, Rutherford, H. H., asst.-surgeon, appointed members of examining board to meet at Presidio of San Francisco, Cal., for examination of such candidates for appointment in the Medical Corps of the Army as may be invited to appear before it.

Banister, J. M., deputy surgeon general, relieved from treatment at General Hospital, Washington Barracks, D. C., and will return to his proper station.

Shook, Jay R., asst.-surgeon, granted leave of absence for one month and fifteen days.

Wilson, Wm. H., asst.-surgeon, ordered to report in person, May 22, 1906, to Major William H. Arthur, surgeon, president, examining board, Army Medical Museum Building, Washington, D. C., for examination for promotion.

Little, Wm. L., asst.-surgeon, reported for temporary duty at Fort Sill, O. T. Left Fort Sam Houston, Texas, May 9, 1906.

Roberts, William, asst.-surgeon, granted 10 days' leave.

Kirby-Smith, R. M., asst.-surgeon, relieved from duty in the Philippines Division, to take effect Aug. 1, 1906, and will proceed by the first available transport sailing after that date to San Francisco, Cal., and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Wertenbaker, Clark L., contract surgeon, returned to Madison Barracks, N. Y., from leave of absence.

Watkins, Victor E., contract surgeon, ordered to Fort Mansfield, R. I., for temporary duty.

Reagles, James, contract surgeon, returned from Fort Snelling, Minn., to duty at Fort Keogh, Mont.

Kelly, John D., contract surgeon, returned from temporary duty at San Francisco, Cal., to duty at Presidio of Monterey, Cal.

Springwater, Samuel A., contract surgeon, granted leave of absence for two months.

Slater, Ernest F., contract surgeon, left Fort Hancock, N. J., for temporary duty at Fort Hamilton, N. Y.

Wing, Franklin F., dental surgeon, relieved from duty at Fort Riley, Kans., and ordered to duty at Fort D. A. Russell, Wyo.

McCallum, Francis M., contract surgeon, returned to Fort D. A. Russell, Wyo., from leave of absence.

Richardson, George H., contract surgeon, assigned to duty at the Presidio of San Francisco, Cal.

Hogan, David D., contract surgeon, left San Francisco, Cal., on leave of absence for one month.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending May 19, 1906:

Cordeiro, F. J. B., surgeon, having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service, May 9, 1906, under the provisions of section 1453, Revised Statutes.

Curl, H. C., surgeon, commissioned surgeon, with rank of lieutenant commander, from Dec. 16, 1905.

Pugh, W. S., Jr., asst.-surgeon, ordered to the *Lancaster*.

Miller, James, Jr., asst.-surgeon, died at Midway Islands, May 13, 1906.

Haynes, J. R., asst.-surgeon, ordered to the Naval Hospital, Washington, D. C.

Brown, H. L., asst.-surgeon, detached from the *Texas* and ordered home to wait orders.

Manchester, J. D., asst.-surgeon, ordered to duty at the Naval Recruiting Station, Cincinnati.

Campbell, R. A., acting asst.-surgeon, detached from the Naval Recruiting Station, Cincinnati, and ordered to the Midway Islands.

Reeves, I. S. K., asst.-surgeon, ordered to the Naval Hospital, Boston.

Allen, A. H., asst.-surgeon, appointed asst.-surgeon, with rank of lieutenant (junior grade), from May 2, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 16, 1906:

Kerr, J. W., asst.-surgeon-general, detailed to represent the Service at the meeting of the National Association for the Study and Prevention of Tuberculosis, in Washington, D. C., May 16-18, 1906.

Smith, A. C., surgeon, granted leave of absence for seven days, from May 14, 1906.

Rosenau, M. J., P. A. surgeon, granted leave of absence for two days, from May 11, 1906, under Paragraph 189 of the Regulations.

Oakley, J. H., P. A. surgeon, relieved from special temporary duty at San Francisco, Cal., and directed to rejoin his station at Port Townsend, Wash.

Grubbs, S. B., P. A. surgeon, temporarily relieved at Chicago, Ill., and directed to proceed to Cleveland, Ohio, May 31, for temporary duty.

Billings, W. C., P. A. surgeon, granted leave of absence for five days, from April 23, 1906.

Billings, W. C., P. A. surgeon, granted leave of absence for one day, May 6, 1906.

Stansfield, H. A., P. A. surgeon, relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to Baltimore, Md., reporting to the medical officer in command for duty and assignment to quarters.

Earle, R. N., P. A., surgeon, leave of absence granted for four months, from Feb. 4, 1906, amended so as to be for three months and three days only.

Ebert, H. G., asst.-surgeon, relieved from special temporary duty in San Francisco, and directed to rejoin his station at Seattle, Wash.

Salmon, T. W., asst.-surgeon, granted leave of absence for seven days, from May 10, 1906, under Paragraph 191 of the Regulations.

Guthrie, M. C., asst.-surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Havana, Cuba, reporting to P. A. Surgeon R. H. von Ezdorf for duty.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for twenty-six days, from May 14, 1906.

Ottaway, J. E., acting asst.-surgeon, directed to proceed from Charlotte to Rochester, N. Y., for special temporary duty, on completion of which to return to Charlotte.

Schug, F. J., acting asst.-surgeon, leave of absence granted for fifteen days, from May 3, 1906, amended to be effective from June 8, 1906.

BOARDS CONVENED.

A board of medical officers was convened to meet at the Bureau in Washington, D. C., May 22, 1906, for the purpose of making physical examinations of applicants for the position of cadet in the Revenue Cutter Service. Detail for the Board: Asst.-Surgeon-General W. J. Pettus, chairman; Asst.-Surgeon-General J. M. Eager, recorder.

A board of medical officers was convened to meet at Mobile, Ala., May 17, 1906, for the purpose of conducting a physical examination of an officer of the Revenue Cutter Service. Detail for the Board: P. A. Surgeon Edward Francis, chairman; Acting Asst.-Surgeon A. S. Taylor, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 18, 1906:

SMALLPOX—UNITED STATES.

Florida: General, April 28-May 5, 10 cases.
Illinois: Chicago, May 5-12, 1 case.
Indiana: Terre Haute, May 5-12, 1 case.
Kentucky: Covington, May 5-12, 1 case.
Maryland: Baltimore, May 5-12, 1 case; Crisfield, May 7, 1 case.
Minnesota: General, April 29-May 7, 18 cases.
New Hampshire: Portsmouth, May 10, 1 case.
New York: Buffalo, May 5-12, 1 case; Haverstraw, May 9, 1 case; New York, May 5-12, 3 cases, 2 deaths; Roswell, April 1-30, 2 cases.
Ohio: Toledo, April 28-May 5, 1 case.
Rhode Island: Pawtucket, March 23, 4 cases.
Tennessee: Knoxville, May 5-12, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila, March 17-31, 2 cases, 1 death.

SMALLPOX—FOREIGN.

Africa: Cape Town, March 24-April 17, 14 cases; Frectown, April 18, present.
China: Hongkong, March 24-31, 12 cases, 11 deaths; Shanghai, April 7-14, 1 death.
Ecuador: Guayaquil, April 12-24, 5 deaths.
Gibraltar: April 22-29, 4 cases, 1 death.
Great Britain: Bristol, April 21-28, 4 cases. Glasgow, April 27-May 4, 1 case.
India: Bombay, April 10-17, 14 deaths; Calcutta, March 31-April 7, 137 deaths; Karachi, April 8-15, 21 cases, 17 deaths; Madras, April 7-13, 30 deaths; Rangoon, March 31-April 7, 61 deaths.
Italy: General, April 19-26, 38 cases.
Japan: Formosa, March 1-31, 5 cases; Yokahama, April 7-14, 2 cases.
The Netherlands: Flushing, April 21-May 5, 3 cases; Rotterdam, April 29-May 5, 1 case.
Russia: Moscow, March 31-April 21, 37 cases, 6 deaths; Odessa, April 7-21, 16 cases, 4 deaths.

YELLOW FEVER—FOREIGN.

Ecuador: Guayaquil, April 12-24, 17 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, March 17-24, 1 case, 1 death; Provinces, March 17-23, 27 cases, 23 deaths.

CHOLERA—FOREIGN.

India: Bombay, April 10-17, 26 deaths; Calcutta, March 31-April 7, 43 deaths; Madras, March 31-April 6, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, May 12-16, 5 deaths.

PLAGUE—FOREIGN.

India: Bombay, April 10-17, 875 deaths; Calcutta, March 31-April 7, 301 deaths; Karachi, April 28-15, 194 cases, 162 deaths; Rangoon, March 31-April 7, 72 deaths.
Japan: Kobe, March 24-April 7, 2 cases, 1 death.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

Med. Soc. of State of North Carolina, Charlotte, May 29-31.
Rhode Island Medical Society, Providence, May 31.
American Dermatological Assn., Cleveland, May 30-June 1
American Pediatric Society, Atlantic City, May 30-June 1.
American Surgical Association, Cleveland, May 30-June 1.
American Laryngological Assn., Niagara Falls, May 31-June 2.
American Assn. of Genito-Urinary Surgeons, New York, June 1-2.
American Academy of Medicine, Boston, June 2-4.
Amer. Assn. of Life Insurance Exam. Surgeon, Boston, June 4.
American Gastro-Enterological Assn., Boston, June 4.
American Urological Assn., Boston, June 4-5.
American Proctologic Society, Boston, June 5-6.
American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-13.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springs, June 20-22.
Medical Society of New Jersey, Atlantic City, June 19-21.
State Medical Society of Wisconsin, Milwaukee, June 27-29.
American Ophthalmological Society, New York City, June 28-29.

ARKANSAS MEDICAL SOCIETY.

Annual Meeting, held at Hot Springs, May 8-10, 1906.

This meeting of the Arkansas Medical Society was the best in the history of its organization, the registration being the largest ever recorded.

The special feature of Wednesday was a popular lecture, given by Dr. Joseph M. Mathews, Louisville, Ky., at the auditorium.

Secretary's Report.

The report of the secretary showed the organization of three new county societies and one district society, leaving a total of nine counties and three districts in the state as yet unorganized.

Important Business Transacted.

STATE JOURNAL TO BE ISSUED.

It was decided to change the monthly bulletin into a monthly journal and to discontinue the publication of the annual volume of proceedings. The proceedings will be published in the new journal instead.

INSURANCE FEES.

The matter of regulating insurance examination fees was referred by the house of delegates to the various county societies to act on as they might see proper.

ENDORSEMENT OF COUNCIL ON PHARMACY AND CHEMISTRY.

In accordance with the report of a special committee, a resolution endorsing the Council on Pharmacy and Chemistry of the American Medical Association was unanimously adopted.

COMMITTEES APPOINTED.

A committee was appointed to report at the next annual meeting on the feasibility of forming a liability insurance organization within the state society. A committee was also appointed to report on the propriety and advisability of the society, by joint stock company or otherwise, erecting and maintaining a medical building for the state and county societies.

NEW SECTIONS CREATED.

A resolution was passed creating the following sections: Dermatology and syphilology, pathology, state and public hygiene, diseases of children, and ophthalmology, laryngology and otology.

Papers Read.

The following are some of the principal papers presented: "Uncinariasis," Dr. Morgan Smith, Little Rock. The author recommended especially the administration of menthol. In a paper on "Ophthalmia Neonatorum," R. H. T. Mann, Texarkana, embodied a plea for a law compelling midwives and others to report cases to competent physicians or health authorities. B. G. Wood reported an epidemic of influenza complicated with colitis. Large pieces of mucous membrane were discharged from the bowel, death following in a few hours after the complication manifested itself. H. Moulton, Fort Smith, read a paper on "Mastoid Operation." In the discussion the contention was made that the mastoid operation could be done by the general practitioner as well as by the specialist. It was clearly shown, however, that this operation should not be undertaken by any one not properly qualified. In a paper on ectopic gestation Dr. Preston Hunt, Texarkana, advised operation in the earlier months of pregnancy on account of greater safety. In a paper by J. W. Price on "Injuries to the Eyeball" and the discussion that followed, the advisability of not enucleating if there is vision and hope of saving the eye was urged.

In a paper on "Some Advantages of the Sigmoidoscope Over the Ordinary Proctoscope" Dr. W. V. Laws, Hot Springs, stated that the advantages of the sigmoidoscope are the comparative ease and freedom from danger in making examinations and the exposure of the lumen of the gut for examination.

DR. C. C. STEPHENSON, Little Rock, read a paper on "Anthrax of the Postnasal Space" in which he reported an interesting case, and exhibited exfoliated pieces of the turbinal bodies. The diagnosis in this case was repeatedly confirmed by microscopic examinations.

In a paper on "Surgical Treatment of Gastric Ulcer," Dr. J. P. Runyan, Little Rock, contended that the chances for recovery from this affection are much better when the patient is operated on.

Other papers read were: "Congestion of Brain in Infancy," W. T. Whaley; "Hemoglobinuria," R. N. Smith, Collins; "Malarial Hematuria," J. W. Cook, Mineral Springs; "New Phases in Treatment of Pneumonia," C. M. Lutterloh, Jonesboro; "A Case of Ainhum," O. M. Bourland, Van Buren; "Treatment of Diseased Conditions of Kidneys," R. L. Saxon, Holly Grove; "A Case of Disorganized Wrist Joint Following a

Case of Septic Fever," C. E. Davis, Eureka Springs; "Smallpox and Its Management," O. G. Blackwell, Pine Bluff; "The Race Question from a Medical Standpoint," H. Thibault, Scott; "Tuberculosis," G. E. Penn, Marvell; "Modern Views of Neurasthenia and Its Treatment," John Punton, Kansas City; "Rational Treatment of Vaginismus," J. R. Dale, Chicago; "Presentation of Shoulder," E. H. Winkler, De Witt; "Cases of Version," M. G. Thompson, Hot Springs; "Hemorrhage from the Uterus During Gestation and Its Effect on the Mother," J. T. Clegg, Siloam Springs; "Toxemias of Pregnancy, with Report of Some Acute Cases," H. C. Dunnavant, Osceola; "Placenta Prævia," J. W. Meek, Camden; "Complete Perineal Laceration," J. P. Runyan, Little Rock; "Inflammatory Conditions of the Female Organs of Generation as Met and Treated by a General Practitioner," N. S. Wood, Camden; "Carcinoma Uteri," C. R. Shinault, Little Rock; "The Pathology of Carcinoma of the Uterus," Nettie Klein, Texarkana; "Some Interesting Cases in Minor Surgery," E. K. Williams, Arkadelphia; "Gunshot Wound of Kidney and Liver, with Report of Case," Marion King, Texarkana; "Some Observations on the Use of Formaldehyd in Treating Carcinoma," Leonidas Kirby, Harrison; "Vaginal Hysterectomy," J. R. Dale, Texarkana.

In addition to these papers there were a number of interesting case reports.

Election of Officers.

The following officers were elected for the ensuing year: President, C. Travis Drennen, Hot Springs; vice-presidents, St. Cloud Cooper, Fort Smith; J. J. Morrow, Cotter, and L. J. Gillespie, Hope; secretary, C. C. Stephenson, Little Rock; treasurer, J. W. Scales, Pine Bluff.

The office of secretary was put on a salaried basis of $600 a year.

On invitation of the board of trade of Little Rock, the Society decided to hold its next meeting in that city.

A committee of five was ordered appointed by the newly elected president to confer with similar committees looking to the organization of the Southwestern Medical Association, to be composed of the states of Missouri, Arkansas, Texas, Kansas, and Indian Territory and Oklahoma.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-first Annual Meeting Held at Washington, D. C., May 15-16, 1906.

President's Address.

DR. FRANK BILLINGS, Chicago, spoke particularly of the program for the meeting. A possible criticism is that it is too long, but it was felt that to refuse any of the papers offered would be exercising undue discrimination. Hence, all were given a place, with the request that each reader present only an oral abstract, instead of reading the entire paper. It is intended that hereafter no paper shall be read in full. Two symposia are included and Dr. Billings hopes to see them continued in future programs. During the past year the Association lost by death two members—Dr. D. D. Stewart and Dr. J. M. Ely. Dr. Billings read a cablegram conveying best wishes from Dr. Osler.

Under the head of general business of the society, Dr. Billings appointed a committee of nine members for the purpose of aiding in the formation of a new library for the physicians of San Francisco.

Mechanism of the Blood Pressure Changes in Mitral Insufficiency.

DR. W. G. MACCALLUM, Baltimore, studied a series of cases of experimental mitral insufficiency for the special purpose of determining the cause of hypertrophy of the right ventricle. He regards the findings as applicable to the spontaneous lesion as found in human beings. Increase of work in this lesion will not entirely explain the right ventricle changes. The essential features in mitral insufficiency are that the left ventricle is rendered practically useless and the blood regurgitates into the pulmonary system. A lessened amount of blood reaches the right ventricle and the lung. There is thus a smaller amount of blood in the circulation and more stagnant in the auricles. A series of charts obtained by his experiments showed that when mitral insufficiency was produced there was in most instances a fall of arterial pressure in the aorta, but the pulmonary pressure was hardly changed. However, there were alterations in the pulmonary circulation consisting mainly of a reflex wave from the left auricle. This affected to a certain extent the pressure in the pulmonary artery through the capillaries in the lung and affected the right ventricle before the closure of the pulmonary valve, as shown by the insertion of extra canulas. This will account for hypertrophy of the ventricle, although the old contention that there is no obstacle to the outflow of blood from the right ventricle, is not true, as that chamber has to pump blood into over-filled lungs.

Experiments of Venous Blood Pressure and Its Relation to Arterial Pressure.

DR. HENRY SEWALL, Denver, detailed experiments in which the venous pressure was determined by a specially devised instrument. The venous system is naturally divided into two departments, the somatic or superficial, and the splanchnic or central. The veins of the first are subject to various external stimuli and may be used for deducing conclusions as to the state of the circulation in all other parts of the body. The splanchnic circulation, from its importance, must be considered in every estimate of arterial pressure. The physiology of the depressor nerve, as applied to clinical conditions, is of the utmost importance. In heart lesions the beneficial action of rest is due to the fact that this permits recovery from the hyperirritability of the nerve. Blood pressure in the superficial veins depends on the ratio of in-put to outflow. The former is increased by muscular exercise and by heat; the latter is decreased by cold and by obstruction of the passage of blood into the heart. In some individuals venous pressure falls, in others it rises during digestion. Respiratory movements are fundamentally active in aiding transfer of blood from arteries to veins. Pressure in the peripheral veins increases during deep inspiration. It can be shown that both cardiac and respiratory variations of arterial blood pressure are frequently transmitted through the capillaries and hence are shown by the veins. The characteristically high venous pressure in gout and in lithæmia is particularly significant. In arteriosclerosis and arterial spasm the venous pressure is low, but rises when the cardiac circulation is impaired.

Rupture of Thoracic Aneurism Into the Superior Vena Cava.

DR. M. HOWARD FUSSELL, Philadelphia, related the clinical history of a man perfectly well until three days before he saw him. There was dyspnea and the upper part of the thorax and the arms were intensely cyanosed and edematous. Dullness over the upper part of the sternum finally developed and over it was a systolic murmur, which later became a to-and-fro murmur. There was no tracheal tug and no difference in the pulses nor in the pupils. The man died from exhaustion 41 days after onset of symptoms. Autopsy showed 5 cm. above the aortic valve a dilatation of the aorta 3 cm. in diameter, the upper part involving the beginning of the innominate. This was free from clot, but between the aorta and the vena cava was an adventitious sac filled by clot. From this sac there was a round opening into the vena cava, permitting the passage of a match stick. In most of the cases which have been reported the aneurism was large, and in at least 50 per cent. of them there was a loud, singing continuous murmur; this sign was absent here.

DISCUSSION.

DR. WILLIAMS for DR. CHARLES CARY, Buffalo, reported a case of varicose aneurism of the aorta and superior cava, in which the symptoms were very much like those in Dr. Fussell's case. The patient, a large man, was suddenly seized with pain while lifting. Cyanosis became striking, the color being a blue-black. The diagnosis was aneurism of the aorta compressing the cava and possibly with rupture into the cava. Death occurred on the fifth day and autopsy showed aneurism of the aorta the size of a fist, beginning one inch above the valve. The vena cava was occluded for a distance of two inches, beginning two inches above the auricle. The opening from the sac into the cava transmitted a No. 10 catheter.

DR. JOHN H. MUSSER, Philadelphia, mentioned a case of

aortic aneurism that pressed on the esophagus and the left bronchus, producing bronchoesophageal fistula. The patient, a woman, presented signs of aneurism and of esophageal pressure. Bronchopneumonia developed and she died suddenly from insufflation of blood.

DR. J. P. CROZER GRIFFITH, Philadelphia, presented the specimen of aortic aneurism ruptured into the vena cava that he reported to the society some years ago. The patient, a Chinaman, had shown all the signs described by Dr. Fussell.

DR. FUSSELL said that the Roentgen rays were used in his case, but were negative, because of the small aneurism immediately beneath the sternum.

Experimental Study of Cardiac Murmurs.

DRS. W. S. THAYER and W. G. MACCALLUM, Baltimore, reported a study of the heart sounds and of murmurs by direct auscultation of the exposed dog's heart. The heart was exposed by removing a portion of the chest wall, auscultation being performed by means of a stethoscope with a very narrow and long bell. The sounds of the normal dog's heart are the same as those of the human organ; from the nearness of the stethoscope a very much better idea could be gained of the superior strength of the aortic second sound. A striking point in the work was the ease with which a systolic murmur in the pulmonary artery could be produced by slight pressure on the conus arteriosus. This suggests that in man a soft systolic murmur may be produced by the resistance to the conus of the chest wall. A number of each of the various murmurs were produced by causing lesions analogous to those causing such sounds in human beings and in general these corresponded very closely. In mitral insufficiency murmurs were heard over the ventricle, the same as in human subjects, but in the dog the murmur and thrill were most intense in the left auricle, which is theoretically correct. In the dog, however, as in human subjects, this is transmitted through the chest wall as a soft murmur. This experiment illustrated the value of this feature to students if it were demonstrated to classes, showing the need of accurate anatomic knowledge.

DISCUSSION.

DR. W. G. MCCALLUM, Baltimore, described the technic of the experiments and showed instruments with which the lesions were produced. The series was a part of the attempt to teach experimental medicine and pathology to the students at Johns Hopkins, this being now made possible by the recent completion of a building for that purpose.

DR. T. W. JANEWAY, New York, said that on forced expiration there was not only a soft systolic pulmonary murmur, but also a harsh murmur and a thrill; the pulmonary valve can also be felt to close. These are apt to be thought indications of organic disease. He has attributed them to pressure by the expiratory effort or by a long auricular appendix overlapping the pulmonary artery and reaching the aorta.

DR. HENRY SEWALL, Denver, said regarding the murmur after infusion of salt solution, that it is generally understood salt infusions cause an increase of venous pressure first. The murmur suggests a relative insufficiency due to increased intra-cardiac blood pressure. He asked if Dr. Thayer paid any attention to the contraction of the papillary muscles. He believes that the first sound of the gallop rhythm is due to the difference in time of this contraction, as compared to the heart wall.

DR. L. F. BARKER, Baltimore, said that the work of Drs. Thayer and MacCallum represents a development in experimental pathologic physiology that is particularly pleasing. This is the kind to which Cohnheim and Bernard were partial. It will help the clinician much more than will pathologic anatomy. He earnestly hopes that more of this kind of work will be done.

DR. S. J. MEITZER, New York, suggested that if the experimenters had listened through the lung when not interfered with by artificial respiration, a better understanding of cardiorespiratory murmurs would have been obtained.

DR. THAYER said that he had not observed the contraction of the papillary muscles. The cardiorespiratory murmurs form an important subject that will have to be taken up especially in other investigations.

Intravenous Injections of Nicotine in Experimental Arteriosclerosis.

DRS. I. ADLER and O. HENSEL, New York, said that Josue's negative results from the use of nicotin were probably due to the fact that he used too small doses. They employed 0.015 gm. of pure nicotin in a 1 to 200 solution for each dose. Each time a rabbit was injected it had a violent convulsion. Tolerance was not produced even after 100 doses. The convulsions did not appear to affect the general health of the animals and were entirely over it in a few minutes. The injections were made every day or with intervals of two days occasionally. Some animals were immune to the action of the nicotin, while others were very susceptible. Most of them after from 18 to 25 doses showed characteristic lesions in the aorta, as after the administration of adrenalin. The very earliest effect is on the muscle cells of the media, the external or longitudinal layers rarely being affected. In some aortas showing no gross lesion, staining showed distinct changes as chromatolysis and karyolysis. Finally lime salts were deposited. One type of the lesion is quite diffuse, large parts being destroyed and leading to aneurismal dilatations. In another form, the degeneration is localized, assuming the appearance of atheroma. Experiments are now under way to determine whether these lesions are toxic, hypertensive or of other nature. Special points are: 1. The primary and essential factor is destruction of the muscle cells. 2. The elastica, contrary to the general belief, plays an entirely passive rôle. It remains normal just so long as the muscle remains normal and the later changes are entirely mechanical, degenerative changes being lacking. 3. It is frequently said of late that these changes in animals are not analogous to human arteriosclerosis, though human sclerosis, it is believed, is primarily a degeneration in the depths of the vessel wall. The reason there is no fatty degeneration in the rabbit is probably that in such animals calcareous are much more common than fatty changes.

Clinical Observations on Arteriosclerosis from Alimentary Toxins.

DR. C. S. BOND, Richmond, Ind., reported the result of twenty years' study of private patients, 150 cases being observed. Cases due to senility, alcohol, or syphilis were excluded. A great deal of work examining the stomach contents and the feces confirmed the clinical diagnosis. The diagnosis was also based largely on the urea output in each 24 hours.

DISCUSSION.

DR. J. L. MILLER, Chicago, said that very interesting work on vascular lesions had been done by an Italian observer who gave tobacco to rabbits by the mouth and obtained lesions similar to those described by Dr. Adler. The evidence produced during the past year is in favor of toxins rather than pressure as the cause of these changes. In his work with barium chlorid the changes were not confined to the media, but changes in the elastica and in the intima apparently were first.

DR. JOSEPH COLLINS, New York, said that the lesions produced by nicotin do not explain the initial step in the pathogenesis of the condition. Dr. Brooks and he are carrying out experiments which bring them a step nearer the solution. They are producing lesions by the inhalation of nicotin, rabbits being kept in chambers where smoking tobacco is being burned. No convulsions are produced in this way, nor is there initial rise in blood pressure. If this produces arteriosclerosis without the necrotic changes induced by increased blood pressure then the first change is nearer approached. The best explanation of the condition now is that it is due to hypertonus, and this may be caused by toxins, increased pressure or in other ways.

DR. H. A. HARE, Philadelphia, said that there is danger in criticising experiments and asked Dr. Adler the following questions: 1. Is there any relation between the frequency of the convulsions and the extent of the changes in the vessels? 2. Were the convulsions controlled by drugs? 3. Did he try antipyrin, which also causes convulsions in animals? Many controls are necessary in such experiments, as there are different changes in the tissues of animals in captivity without the interference of artificial causes.

Dr. Adler, in closing, said that he had some years ago reported a series of experiments in which he fed tobacco to rabbits; it produced no effect on the larger blood vessels. There were some interesting changes in the liver, heart and smaller vessels of the kidney and also of the liver. He had not set out to study the causes of arteriosclerosis in general. All the studies on human arteriosclerosis thus far are purely histologic and made in advanced stages of the disease. This accounts for the small amount of headway made in the study of the affection. The early stages in human beings are absolutely unknown. An interesting point in this connection is that the rabbits, which were immune to the action of nicotin, so far as vascular lesions were concerned, never failed to have a convulsion when given the injection.

Tricuspid Insufficiency in the Course of Pernicious Anemia.

Dr. Robert B. Preble, Chicago, said that in a typical case of pernicious anemia he observed pulsation in the jugular vein, but with none of the ordinary associated phenomena. There was no cyanosis, nor edema, nor passive congestion of the liver. In a second case, in a woman, seen when in coma, there was also a positive pulse in the jugular and in the small veins of the thorax and arms. As in the first case, the other signs named were lacking. Leube has reported finding similar conditions in cases of chlorosis. A third case showed essentially the same features. It seems possible that there may be such a lesion without seriously interfering with the circulation. Jugular pulse is possible under other conditions, as the rupture of an aneurism into the superior vena cava, or with an open foramen ovale with other added disturbance, but each of these could be ruled out of the cases reported. This venous condition in pernicious anemia is probably more common than is noted, or at least described.

Typhoid Spine with Deposits of Bone Along the Vertebrae in Relation to Spondylitis.

Dr. Thomas McCrae, Baltimore, reported a case of typhoid fever with the usual clinical history of typhoid spine. Later relapse occurred and during this attack the spine symptoms improved and the patient was discharged well. Definite bony changes in the second and third lumbar vertebræ were shown by the Roentgen rays. In a second patient the same symptoms and lesions as shown by the Roentgen rays appeared on the thirty-seventh day. This was a case of paratyphoid fever and may have been influenced by a previous gonococcus infection. There were no further explanation of the symptoms in these patients. One point is the explanation of the neurotic features. Spondylitis is seen in other conditions and is also accompanied by similar nervous conditions. The lesion is believed to be due to the local action of the typhoid bacillus. In the spondylitis of arthritis deformans there are all grades of lesions and so in typhoid spine. These cases of typhoid spine are thus of interest in connection with the cause of arthritis deformans, the lesions in the two being the same except in degree. This suggests the theory that arthritis deformans may be due to infection by different micro-organisms.

DISCUSSION.

Dr. James B. Herrick, Chicago, said that he was glad to see Dr. McCrae rescue typhoid spine from the list of functional diseases. He has seen two cases of the condition. In one no organic lesion was made out; in the other pain was localized over a distinct swelling. When the swelling subsided the pain also ceased. The lesion is thus a definite organic and inflammatory process.

Dr. W. S. Thayer, Baltimore, said that one reason inducing physicians to believe typhoid spine a pure neurosis is the curiously indefinite character of the pain in some cases. The symptoms in secondary carcinoma of the spine with similar manifestations are also indefinite. He believes that there is a definite local lesion of the spine in all cases of typhoid spondylitis.

Dr. Joseph Collins, New York, considers that the relations of gonorrheal spondylitis are confirmatory of McCrae's theory. A patient of the type described by Marie had a stiff spine for three years. From opening and draining of the seminal vesicles the patient is now greatly improved and recovery seems assured. It is a mistake to call all cases of typhoid spine organic, because some patients recover. If there be exudate and lesion of the bone they would not recover, though in some cases recovery does occur when there seems no doubt of the presence of periostitis.

Dr. Vickery, Boston, mentioned a case of typhoid spine in which the lesion was so high up that pleurisy or intercostal neuralgia was suspected. Finally a definite lesion of the dorsal spine was demonstrated by the Roentgen rays. Rest was at once instituted and the usual nervous symptoms did not develop.

Dr. James Tyson, Philadelphia, described a case of nuchal spondylitis of two years' duration. There were first the ordinary symptoms of wry neck, followed by a peculiar distortion of the neck, due to the spondylitis. This is the first he has seen in this location; the osseous changes appear due to the wry neck. He believes that all cases of spondylitis should be put in the category of infections.

Dr. J. K. Mitchell, Philadelphia, said that a very small lesion in the neighborhood of the spine may cause marked symptoms. In one case of three years' duration with agonizing pain in one side of the back, thus excluding spondylitis, the patient was operated on. This showed that the lesion was the tearing off of a fragment one-fourth by one-third inch in size from the lateral process of a vertebra in the lower thoracic region. The operation was followed by perfect comfort.

Dr. S. Solis Cohen, Philadelphia, believes that the question of pain is a very important one and that something more than spondylitis causes the intense pain often complained of. In some forms there are lesions of considerable extent and yet no pain whatever.

Dr. McCrae stated that he did not say that all typhoid spines are organic. In arthritis deformans the lesions sometimes clear up and so do they in typhoid spine. The Roentgen rays showed what was taken to be new bone formation in the cases he reported. There appears to be no association between the degree of pain and the extent of the lesion.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Ocular Complications in Measles.

In considering the ocular complications which may arise in the course of measles, Aaron Brav, in the *Medico-Chirurgical Journal*, states that every such patient with conjunctivitis requires treatment in order to avoid corneal complications and resulting damage to the eyesight. Therefore, when the physician is called to see a case of measles, he should instruct the parents regarding the necessity of absolute cleanliness, as the percentage of corneal opacities resulting from inflammatory conditions complicating this apparently mild disease of childhood is considerable. The child's hands should be thoroughly washed three or four times daily with warm soapy water, as he is liable to rub the eyes with the hands and not only increase the irritation, but transmit the infection. The face should also be kept clean. The child should be kept in a large, well-ventilated room, with uniform temperature and light covering. He should remain in bed for at least two weeks, during which time the toxins are eliminated. The room should be kept shaded, and no direct light should be permitted to fall on the eyes. Brav speaks against the practice of completely darkening the room, as light is essential in such illnesses. Full light should be permitted only after the eyes have become normal in appearance and conjunctival inflammation has entirely subsided. In carrying out these instructions, one guards against the irritation of the cornea and lessens the tendency to photophobia. Brav also recommends that an eye wash be prescribed in all cases of measles. The

physician should be specific in his instructions concerning this eye wash rather than prescribing the ordinary borax solution, in order that the necessary instructions will be more accurately carried out by the patient's nurses. An ordinary rag or cloth should not be used; the eye cup in older children is permissible, and in younger children the eye dropper should be used. The eye should be washed three times a day. As an antiseptic and as a soothing lotion, Brav recommends the following combination:

R.	Acidi borici	
	Sodii biboratis, āā.....gr. x	6
	Aquæ menthæ piperitæ 3ss	2
	Aquæ camphoræ .....℥ss	15
	Aquæ destillatæ, q. s. ad.....℥xvi	500

M. Sig.: To be instilled into the eyes three times a day.

The itching of the eyelids should be relieved by the following ointment:

R.	Hydrargyri oxidi flavi .....gr. ¼	015
	Lanolini 3i	4

M. fiat unguentum. Sig.: A small amount to be applied to the conjunctivæ at bedtime, followed by gentle massage over the eyelids.

The foregoing ointment will allay the itching and prevent blepharitis and the glueing of the lids when the patient awakens in the morning.

This author states that irritating drugs, such as silver nitrate, should not be used. When the congestion of the conjunctiva is very marked, one drop of the 1 to 4,000 solution of adrenal extract may be instilled into the eye three times a day. If the lids show the presence of marked edema, warm moist compresses are of great value.

When intense photophobia is present, the instillation of a few drops of a cocain solution will afford relief. If this condition should persist, the physician should always be on the lookout for some corneal involvement, and if present, a 1 per cent. solution of atropin should be instilled.

If general catarrhal symptoms, such as rhinitis, be present, the nose should receive a daily spray of boric-acid solution, as this greatly assists in the prevention of any inflammation and of any obstruction to the lachrymal sac. Children who have recently recovered from attacks of measles should not be allowed to read or to write until the system is entirely rid of toxic substances, and has entirely recovered from the influence of the toxic conditions. Such debility not infrequently affects the ocular muscles, both intrinsic and extrinsic, and produces a great deal of strain. Consequently, during convalescence extreme care should be observed, as it is mainly in this stage of the disease that the majority of the ills and complications arise. The general condition of the child must be improved. If there are any tendencies to strumous diathesis, tuberculous, scrofulous, syphilitic or rachitic, they must be combated, for in such cases the vitality is low and the resistance to corneal complications is lessened. During the cold season, the author recommends cod-liver oil during the stage of convalescence and continued throughout the entire season. When the oil can not be taken, the following combination is recommended as an alterative and as a tonic:

R.	Syrupi ferri iodidi ..... m. v.	30
	Liquoris potassi arsenitis.....m. ii	12
	Syrupi hypophosphiti 3ss	2
	Syrupi simplicis 3i	4

M. Fiat mistura. Sig.: The entire amount to be given at one dose and similar amounts given three or four times daily.

Bathing during the stage of convalescence must not be neglected. A warm bath should be given daily, as it not only facilitates desquamation and prevents the dissemination of the scales, but greatly assists in the elimination of toxins which not infrequently contribute to the development of the anemia and general debility.

Tuberculosis of the Larynx.

The treatment of tuberculous conditions of the larynx and epiglottis, according to the *Medical Bulletin*, should be largely systemic in the milder forms of the disease. It should be borne in mind that the disease does great harm only when it causes pain or prevents the taking of food, and in some cases large ulcers may heal with practically no local treatment. The method of curetting in order to eradicate the local disease is regarded as worse than useless, as it is impossible to know how deeply the bacilli have penetrated the apparently sound tissue in the vicinity of the superficial lesion. Ulcers should be cleansed with the following combination:

R.	Hydrogenii peroxidi	
	*Liquoris sodii boratis comp. (N. F.), āā..3i	30

M. Sig.: To be introduced into the larynx by means of a spray from the atomizer.

After the parts have been thoroughly cleansed, the ulceration should be dusted by means of a powder, as follows:

R.	Bismuthi subnitratis 3ii	8
	Pulv. acaciæ .....gr. xv	1
	Iodoformi 3ss	2
	Morphinæ sulphatis .....gr. xx	1 30
	Acidi tannici.....gr. xxx	2

M. Sig.: To be insufflated directly into the larynx by means of a powder blower.

If for any reason the morphin in the foregoing combination is objectionable, it may be omitted from the powder; and in any case, morphin must be prescribed with caution.

In order to relieve the excessive pain produced by swallowing, the use of cocain applied to the larynx either with an atomizer or a laryngeal applicator is recommended, but it must also be used with caution, in order to avoid the creation of a habit.

Acute Prostatitis.

In cases of acute prostatitis, the Cyclopedia of Med. and Surgery states that the outline of treatment should include absolute rest and a position that will favor emptying the part of blood as completely as possible. Consequently, the patient should be put to bed with the hips elevated. Hot sitz baths or hot applications to the perineum lessen the pain. If vesical irritation is present, the administration of the following combination is recommended:

R.	Acidi borici	
	Sodii bromidi, āā.....3ii	8
	Tinct. belladonnæ 3ss	2
	Potassii citratis 3iiss	10
	Aquæ dest. q. s. ad.....℥viii	240

M. Sig.: One tablespoonful every three hours in water.

If marked temperature is present the following combination may be substituted:

R.	Acidi borici	
	Potassii, bromidi, āā.....3i	4
	Potassii citratis 3ii	8
	Tinct. aconiti .....m. xxv	1 65
	Tinct. belladonnæ 3ss	2
	Spts. etheris nitrosi.....℥ss	15
	Aquæ q. s. ad.....℥vi	180

M. Sig.: One tablespoonful every three hours in water.

When the pain is severe, a suppository may be used as follows:

R.	Ext. belladonnæ .....gr. iii	20
	Ext. opii aqueous ..... gr. vi	40
	Olei theobromæ q. s.	

M. fiat suppos. no. xii. Sig.: One suppository to be introduced into the rectum two or three times a day, according to the severity of the pain.

Medicolegal

Sufficiency of Hypothetical Questions.

The appellate term of the Supreme Court of New York says that where the ground of the defendant's exceptions in the personal injury case of Coles vs. Interurban Street Railway Co. was that the questions put to the expert witnesses did not fairly and fully state all of the facts proved in the case the contention seems unsound in law. It is sufficient if a hypothetical question is within the possible or probable range of the evidence, without being based on all of the evidence given or on a judicial summing up of the fair effect of that evidence.

No Forgery of Invalid Prescription.

The Supreme Court of Vermont says that the defendant in the case of State vs. McManus was charged with committing

* Dobell's Solution.

the crime of forgery by altering a physician's prescription for whisky. The prescription in question, however, contained no statement that the liquor prescribed was necessary for medicinal use. It therein failed to comply with the statute in a very essential particular. The paper was invalid on its face, and could not be relied on as authority for a sale. This has been held in respect to similar provisions in other states. State vs. Tetrick, 34 W. Va. 137; State vs. Nixdorf, 46 Mo. App. 494. And it has been long and uniformly held that a paper that is invalid on its face will not sustain a charge of forgery at common law. The writing must be such that, if genuine, it would be apparently of some legal efficacy. It is not to be presumed that any one could be deceived or defrauded by a document that is void on its face.

Hospital Record as Evidence of Pain and Suffering.

The Superior Court of Delaware says that in the personal injury case of McMahon vs. Bangs the head nurse of the hospital to which the plaintiff had been taken was produced by him as a witness, and after testifying as to his condition when taken to the hospital, was questioned concerning a certain record of the case, which she testified was regularly kept by one of the nurses of said hospital, who had since been dismissed and was not present in court. Said record was thereupon offered in evidence and was objected to by counsel for the defendant on the ground that the only person who could testify to said record, so as to make it proper evidence, would be the person who made it. The object of offering this paper in evidence, the court says, seemed to be to show pain and suffering. For that purpose the nurses themselves might be called, and under proper circumstances this paper could be used to refresh their memories. Beyond that the court thinks it was not admissible.

Physician Entitled to Recover for Services.

The appellate term of the Supreme Court of New York says, in the case of Denenholz vs. Kelly and another, that a boy in the defendants' employ had his hand crushed and severely injured. The defendants employed the plaintiff, a physician, to care for him. No agreement was at first made about compensation, but after a time the defendants wished to limit their probable liability, and agreed to pay the plaintiff $175 for his services in the case, and $20, the fee of a consultant. They paid only $100, and this action was for the balance. The defendants said that after the plaintiff's bill had run up to $100 the question of agreeing on a sum was broached, and that $175 was agreed on after the plaintiff had said that the treatment might still continue "six, seven, or eight weeks—quite indefinite," while they claimed that the treatment did not continue so long as they had been led to believe it would. But the court says that the statement attributed to the plaintiff, of course, was not a representation that the case would take any definite time, but merely the expression of an opinion. In point of fact the treatment did continue for some weeks thereafter. On the case the plaintiff was clearly entitled to the sum sued for.

Distinction Between "Expert" and "Opinion" Evidence.

The Supreme Court of Wisconsin holds, in Schwantes vs. State, that the scope of opinion evidence is not limited by the technical meaning of the term "science, art or skill." It says that the quoted expression, often found in decisions, in a view that might be taken thereof, conveys rather too narrow an idea of the scope of opinion evidence. It may have no appreciable connection whatever with "science, art or skill," in a technical sense, and yet be admissible just as clearly as if it possessed such connection. All opinion evidence is not expert evidence in the technical sense, but all expert evidence is opinion evidence in any view of the matter, and all admissible opinion evidence is expert evidence in the general—the legal—sense of the term. The term "skill," as used in the quoted expression, must be regarded in its broadest signification, not applied, necessarily only to mechanical or professional knowledge. It includes every subject susceptible of special and peculiar knowledge derived from experience. The term "science, art or skill" as a limitation of expert evidence is more of a lexiconic than judicial origin. Webster defines the noun "expert" as, "One who has skill, experience, or peculiar knowledge on certain subjects of inquiry in science, art, trade or the like; a scientific or professional witness." That, strictly construed, is hardly a safe guide. The law writers define the term as "a person having special knowledge and skill in the particular calling to which the inquiry relates." The preliminary questions respecting opinion evidence, that is, that of the competency of the witness and that of whether the subject is within the scope of opinion evidence, are in the field of competency, in which the judgment of the trial court is conclusive, unless shown to be clearly wrong.

Insane Asylum Not Liable for Acts of Inmates.

The Court of Appeals of Kentucky says that the case of Leavell vs. Western Kentucky Asylum for the Insane was brought to recover damages for an injury to the hand of the plaintiff caused while an employé in the defendant's laundry, it was alleged, by a lunatic allowed to work there, wrongfully starting a machine. Thus the question presented was: Can the defendant asylum be held responsible for a tort committed by a lunatic of whom it has custody? In the court's view of the law the question must be answered in the negative. The defendant, the court says, is purely an eleemosynary institution created by the state and maintained at its expense for the beneficent purpose of caring for such of its citizens as may by judgment of a court of competent jurisdiction be declared of unsound mind, and, by reason thereof, disqualified for the duties of citizenship and of caring for themselves. Such institutions are mere instrumentalities of the state government brought into being to aid in the performance of governmental duty, hence the rule of respondeat superior (the superior must answer) does not apply to them. The defendant cannot therefore be made to respond in damages for a personal injury inflicted on another by its servant, or a lunatic in its charge, though such injury results from negligence or malicious act on the part of such servant or lunatic. Nor does the court think the contention sound that because the statute from which the defendant derives its corporate life and powers declares that it may sue and be sued that places it on the footing of all other corporations with respect to torts committed by those in its care or employ. There are, it says, many causes of action for which the defendant may sue, and also grounds on which it may properly be sued. It may, through its officers, make contracts for supplies for its inmates, incur liabilities on that account, and for the proper maintenance of the institution it may sue for debts due it, or to enforce any right allowed by law. It may incur liability in damages for creating and maintaining public nuisances which endanger human life, or destroy or injure the land of another, and be sued to enforce such liability. The court is of the opinion, therefore, that the right given the defendant by statute to sue, and to others to sue it, is to be taken in a qualified sense, and should not be so construed or extended as to make it responsible to persons injured, as was the plaintiff, by reason of the misconduct or negligence of its inmates of employés. Whether the policy of thus exempting eleemosynary institutions from liability in such cases be wise, or unwise, it is undoubtedly sanctioned by a long line of authorities, and the attention of this court has been called to no case in which a contrary rule has been announced.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

May 12.

1 Review of Etiology of Acute Rheumatism. L. F. Frissell, New York.
2 *Cerebellar Apoplexy. M. A. Starr, New York.
3 The State and Tuberculosis Sanatoria. M. P. Burnham, Ray Brook, N. Y.
4 Atrophic Cirrhosis of the Liver. W. L. Wasson, Waterbury, Vt.
5 *Concerning the Diagnosis. J. N. Study, Cambridge City, Ind.

2. **Cerebellar Apoplexy.**—Starr declares that the existence of cerebellar apoplexy is not generally recognized. He cites the histories of five cases which present the common symptoms of an extreme degree of vertigo at the onset, which gradually

subsides to some extent, but which recurs on any attempt to walk and which also remains as a permanent symptom; an uncertainty in gait, which is due not to paralysis, but to a lack of balancing power, which results in staggering and uneven steps. There is also an unnatural posture of the head when at rest, and nystagmus. When in combination these symptoms are characteristic of cerebellar disease. The vomiting and headache observed in all the cases are doubtless due to irritation of the vasomotor and pneumogastric centers in the floor of the fourth ventricle, which lies immediately below the cerebellum.

5. **Concerning the Diagnosis.**—Study declares that it is unwise to declare that an individual is suffering from some disease simply because the specific bacillus is found in the body; that the presence of the Widal or diazo tests indicate typhoid fever, or that the tuberculin test indicates tuberculosis. These helpful methods of diagnosis he believes to be somewhat limited in value, and too much dependence should not be placed on them as a class unless they are accompanied by the clinical phenomena which are characteristic of the disease. The microscopic examination of diseased structures, secretions and excretions will often clear up a doubtful diagnosis. The physician who would serve his patient best must use all methods for correctly interpreting disease and other abnormal conditions of the body, not relying on any one procedure to the exclusion of others which have been proved to be meritorious.

New York Medical Journal.

May 12.

6 *Effects of Uric Acid on the Genitourinary Tract. W. H. Porter, New York.
7 The Mechanics of Injuries to the Cranium and Its Contents. H. T. Nelson, Charlottesville, Va.
8 Clinical Manifestations of the Toxemia of Pregnancy. (Concluded.) J. C. Edgar, New York.
9 *Diagnosis of Renal Functions. R. C. Cabot, Boston.
10 Pericarditis with Effusion, Complicated by a Pleural Effusion. C. M. Doland, Philadelphia.
11 Acute Diseases of the Nasal Sinuses. G. W. Spohn, Elkhart, Ind.
12 Constitutional Low Arterial Tension and Its Relation to the Life of the Individual. L. F. Bishop, New York.
13 Massage in Parametritis, Perimetritis, Salpingitis and Oöphoritis. G. Norstrom, New York.

6. **Effects of Uric Acid on the Genitourinary Tract.**—Porter summarizes his paper as follows: Uric acid is one of the normal end products of proteid oxidation reduction. It is never present in any food substances and is never found in the blood. The antecedent proteid molecule from which uric acid is made is contained in the blood. Uric acid is made in the renal cells by the oxidation reduction of the desulphurized proteid molecule. The proteid molecule is desulphurized in the epithelial cells of the gastric follicle and in the hepatic cells. In gout, uric acid is formed in protoplasmic structures other than renal cells by a vicarious action by which the proteid molecule is oxidized at an abnormal point. It is absolutely necessary to have uric acid produced in the renal cells. When uric acid is produced faster than it can be converted in the uriniferous tubules into a urate it is overproduced. The urate is produced by the action of the uric acid on the neutral phosphate, thus forming the urate and an acid phosphate. Sulphuric acid is formed in the epithelial cells of the kidneys from the proteid molecule. In the cavity of the stomach the sulphuric acid acts on the sodium chlorid, forming hydrochloric acid and sodium sulphate. The hydrochloric acid in the lumen of the intestine attacks the alkaline sodium phosphate, restoring the sodium chlorid lost in the stomach and forming the neutral salt for the blood. The three etiologic factors causing overproduction of uric acid are defective oxygen supply, overfeeding, disturbances in the nervous mechanism. Uric acid is formed by oxidation reduction and not by synthesis. The intensity of the toxin transformed in the kidneys determines the character of the lesion. The effects of the overproduced uric acid are renal hypertrophy, parenchymatous degeneration of the kidneys and diffuse or interstitial transformation. This overproduction may cause a catarrhal condition of the pelves of the kidneys or a truly inflammatory process may result, or it may act as a general irritant to the whole genitourinary tract. Giving alkalies masks symptoms, but never removes the etiologic factors, while the removal of the latter should be the main object of all therapeutics. Overproduction of uric acid may aid in causing phosphatic as well as uric acid calculi. Uric acid may act as an irritant in solution, in its isolated crystalline form, or massed together in the form of a calculus. The action of uric acid on the genitourinary tract is always mechanical. The effects of the overproduced uric acid are often confounded with disturbances in metabolism that cause the overproduction.

9. **Diagnosis of Renal Functions.**—Cabot urges that functions, not histologic appearances, are what we should strive to recognize in kidney disease. Albumin and casts alone never prove the existence of nephritis. They may or may not accompany it. The physical characteristics of the urine, the visceral evidence of uremia, dropsy and cardiac involvement are, with time, the best help to the functional diagnosis of kidney disease. The dilution test, the concentration test and, if opportunity offers, the quantitative estimation of the capacity of the kidneys to excrete particular substances may render valuable assistance. Cabot particularly recommends a very simple test, which seeks to determine whether and to what extent the kidney is injured to secrete a dilute urine after profuse ingestion of fluid, or a concentrated urine when liquid is withheld. In the early stages of acute renal insufficiency the kidney often loses for the time the power to secrete a dilute urine. On the other hand, in some cases of chronic interstitial nephritis the kidney continues to secrete a concentrated urine, even when water is considerably restricted.

Boston Medical and Surgical Journal.

May 10.

14 The Boston Medical Association. D. W. Cheever, Boston.
15 Past of the Boston Medical Association. Change in the Fee-Table. J. C. White, Boston.
16 A Biographic Clinic on Tchaikovsky. (To be continued.) G. M. Gould, Philadelphia.
17 *Treatment of Ununited Fractures of the Neck of the Femur by Operation. F. Cobb, Boston.
18 A Dietetic Study. A. L. Benedict, Buffalo.

17. **Ununited Fractures of Neck of Femur.**—Cobb claims that fractures entirely intracapsular are very rare. When they do occur and are unimpacted the obtaining of union by any form of fixation apparatus is exceedingly doubtful. The operation of nailing the fracture with or without open incision is to be adopted, he thinks, whenever possible. In the young and middle aged, when no contraindications to operate are present, such as obesity, general debility, marked arteriosclerosis or complicating disease, the method with open incision is more accurate and preferable. In persons of advanced age and those with definite contraindications to surgical interference the direct method without incision, as practiced by Nicolaysen, should be used in all cases if seen sufficiently early. In employing the method of Nicolaysen a general anesthetic should be given.

Lancet-Clinic, Cincinnati.

May 5.

19 Modern Methods of Infant Feeding. A. Friedlander, Cincinnati.
20 Treatment of Hemoptysis. C. Knapp, Evansville, Ind.
21 The Philosophy of Inflammation and Its Treatment. R. S. Horne, Jonesboro, Ind.

May 12.

22 Obstetrics and Gynecology. R. W. Stewart, Cincinnati.
23 Address of the President of the Obstetrical Society of Cincinnati. J. A. Johnston, Cincinnati.
24 Traumatic Hysteria. J. V. Shoemaker, Philadelphia

St. Louis Medical Review.

May 5

25 Accuracy in Medical Nomenclature. A. L. Benedict, Buffalo, N. Y.
26 Pharmacology of Ions. (Continued.) O. H. Brown, St. Louis.

Journal of Outdoor Life, Saranac Lake, N. Y.

May.

27 A Short Talk to Laymen. C. L. Minor, Asheville, N. C.
28 Tuberculosis in the Workshop. H. R. M. Landis, Philadelphia.
29 What the National Government Is Doing for the Cure and Prevention of Tuberculosis. P. M. Carrington, Ft Stanton, N. M.
30 *Open Air Treatment of Tuberculosis. J. W. Pettit, Ottawa, Ill.

30. **Open-air Treatment of Tuberculosis.**—According to Pettit the constant supervision of the patient is the most important point in which the sanatorium treatment must neces-

sarily differ from that adopted by the general practitioner. The patient being under constant supervision, early symptoms of an intercurrent affection are noted and serious complications often anticipated. Medicines are used as indications arise and are usually administered to meet symptoms. Cough, night sweats, loss of appetite and anemia, as a rule, lessen at once and soon disappear under rest and fresh air without the use of drugs. Speaking of the home treatment of tuberculosis, Pettit says that since the agencies are so simple it would seem there would be no difficulty in carrying out the treatment at home. Experience, however, teaches that, as a rule, it can not. First, because so many cases occur in families where it is not possible to make the application. Second, when patients are more favorably situated it is impracticable for the reason that the treatment has not been accepted by the laity with that degree of confidence so essential to its application. A third reason may be given that the methods are not well understood by the average physician, and when they are they consume so much time and energy that it is hardly possible for the busy physician to get the time from his other work to devote to the few patients whom he may have under his care. In other words, it is for practical rather than for theoretical reasons that the treatment can not be applied at home. The education of the public and of the profession must come through sanatoria. These will be training schools which will be centers of influence in propagating the new doctrine and its methods; it will be wise, therefore, for physicians to devote their energies, for the present at least, to the establishment of sanatoria rather than to take the risk of bringing the treatment into disrepute by many failures, which must result through lack of experience on the part of physician, patient and friends.

American Journal of Obstetrics, New York.

May.

31 Puerperal Eclampsia. J. F. Moran, Washington, D. C.
32 *Clinical Observations on Thirty-seven Cases of Eclampsia. G. H. Ryder, New York.
33 Leucocyte Counts in Gynecology. H. C. Taylor, New York.
34 *Macroscopic Appearances of the Ovary Warranting Its Removal. B. McE. Emmet, New York.
35 *Time of Ovulation. J. W. Rowe, Cincinnati.
36 Hematometra, Caused by a Myoma of the Cervix. C. G. Levison, San Francisco.
37 *Ventrofixation Followed by Normal Delivery. A. L. Smith, Montreal.
38 A General Surgeon's Views on Some Pelvic Conditions in Women. R. T. Morris, New York.
39 *Radium Therapy in Pediatrics and Gynecology. T. Abbe, Washington, D. C.
40 Surgical Conditions of the Puerperium. J. C. Hubbard, Boston.

32. **Clinical Observations on Eclampsia.**—In 37 cases reported by Ryder, 13 patients died, a mortality of 35 per cent. The period of pregnancy seemed to affect the mortality. Of the series, 25 patients were over seven months pregnant and 12 seven months or under. Of the former, 6 died, a mortality of 24 per cent. Of the latter 12 died, a mortality of 58 per cent. In other words, the mortality when the disease occurred on or before the seventh month was more than twice as high as when it occurred after the seventh month. The mortality among primiparæ and multiparæ was nearly even. Of 21 primiparæ, 8 died, 38 per cent., and of 16 multiparæ, 5 died, 31 per cent. Age seemed to affect the mortality very little. Of 19 who were 25 years old or less, 6 died, 31 per cent. Of 10 over 25, 7 died, 38 per cent. The mortality was less in the colored than in the white women. Of the former, 9, 2 died, 22 per cent.; of the latter, 28, 11 died, 39 per cent. The severest and most fatal type of the disease was the hemorrhagic, with vomiting of blood, blood in the stools or petechiæ over the body. In the 37 cases there were 11 patients of this type, and of these 9 died, 82 per cent. mortality. Moreover, of the entire 13 deaths of this series, 9, or 69 per cent., were of the hemorrhagic type. When these signs of hemorrhage in the vomitus, stools or skin are seen the prognosis is always bad.

On the other hand, cases of postpartum eclampsia were nearly all of mild type. There were seven of these, the first convulsion occurring from within a few minutes to several days after delivery. One case occurred as late as the eleventh day. All except one of these patients recovered, a mortality of 14 per cent. Of the 30 cases of antepartum or intrapartum eclampsia, 12, or 40 per cent., were fatal. Postpartum, 7 cases, 1 death, 14.3 per cent.; intrapartum, 6 cases, 2 deaths, 33.3 per cent.; antepartum, 24 cases, 10 deaths, 41.6 per cent. After delivery many of these patients showed marked and immediate improvement, a few seemed to grow worse and the rest were apparently not immediately affected. Eleven, or 37 per cent., showed immediate improvement; 4, or 13 per cent., seemed to grow worse, and the rest, 50 per cent., were not immediately affected. Over one-third then showed immediate improvement after emptying the uterus, and only one-eighth seemed worse.

The time elapsing from the first convulsion to the delivery of the patient was twelve hours or over, and of these 6 died, a mortality of 60 per cent. In 20 the interval was less than twelve hours, and of these 6 died, 30 per cent. mortality; or the fatality was about twice as high where the delay in delivery was over twelve hours. In 19 cases the cervix was dilated less than two fingers when first seen; in 11 two or more fingers. Of the former, 9 patients died, a mortality of 47 per cent. Of the latter, 3 died, 27 per cent. mortality. In method of delivery (nearly all the cases were dilated first with bags) there were four so-called vaginal Cæsarean sections; of these patients 3 died, 75 per cent. mortality. Accouchement forcé was performed in 18 patients; 7 died, a mortality of 39 per cent. Forceps operations were done in 5 patients; 1 died, a mortality of 20 per cent. In 10 normal deliveries (including the postpartum eclampsias) 2 patients died, 20 per cent. mortality. Premonitory symptoms, giving ample warning of approaching danger, were present in 29 out of the 37 cases. Of the infants 50 per cent were saved (one set of twins made the total number of infants 38). Of the 19 that were lost, 12 were stillborn and 7 died, many showing the typical lesions found in the adult cases of eclampsia.

34. **When to Remove Ovary.**—Emmet advises that on thorough inspection of a suspected ovary anything which does not at once proclaim itself innocent and harmless be removed immediately, and that if a growth, however small, suggests active proliferation or malignancy, the ovary be taken away in time.

35. **Time of Ovulation.**—Rowe advances the hypothesis that ovulation occurs normally at the close of the period of quiescence, and initiates and, indeed, directly causes the period of hypertrophy. Menstruation, on the contrary, is the result of the exhaustion and disappearance of the stimulus. If the ovum dies, then all the preparations made for its reception are useless and must be disposed of. Menstruation, therefore, is an almost infallible proof that the last ovum discharged from the ovary is dead. If, on the other hand, the ovum does not die, the stimulus begun with ovulation goes on and the time for menstruation passes without that event. Therefore, if the expected menstruation does not occur, then the ovum last expelled from the ovary was still alive. And if the last expelled ovum is alive at the time of the next expected but suppressed period, then that ovum was fertilized, for otherwise menstruation would have occurred.

37. **Ventrofixation.**—In all cases in which retroversion is the only lesion, and when there are no adhesions, Smith performs a modified Alexander operation. This modification consists in crossing one ligament under the skin, tying the two ligaments with a reef knot opposite the right external inguinal ring, which knot is secured from slipping by a few fine catgut stitches. When doing a ventral fixation Smith scarifies a space an inch in diameter on the anterior surface of the fundus and on the corresponding abdominal peritoneum. The uterus is anchored by two chromicized catgut stitches passing through the peritoneum, muscle and fascia on both sides and deep in the uterine wall. These stitches must last a month. In both the Alexander and ventral fixation operations Smith says that it is important to amputate the cervix if it is too long, so as to leave the uterus only two and one-half inches deep, thus lightening the load to be carried by the shortened ligaments or by the adhesions.

39. **Radium Therapy.**—Abbe claims that radium gives the most satisfactory results in the treatment of birthmarks, lupus and keloids. It is helpful in the late cases of cancer of the uterus to palliate some of the symptoms, and may proba-

be curative in the very early stages. It is the most desirable treatment of inoperable strictures of the rectum and esophagus, where it gives more comfort to the patient than colostomy or gastrostomy.

Canada Lancet, Toronto.

May.

41 Symptoms of Appendicitis. J. S. Hart, Toronto.
42 *Medical Treatment of Appendicitis. G. H. Carveth, Toronto.
43 Appendicectomy. A. H. Perfect, Toronto.
44 Our Children and Tuberculosis. J. Grant, Ottawa, Canada.
45 Rational Treatment of Urethritis. N. E. Aronstam, Detroit, Mich.
46 The Trephine in Insanity. J. Stenhouse, Toronto.

42. **Medical Treatment of Appendicitis.**—Carveth sums up his paper as follows: 1. Absolute rest in bed until all the symptoms have subsided for some days. 2. The withdrawal of all food by mouth and the severest restriction on liquids swallowed. 3. The avoidance of purgatives, for while they may appear to be good in some cases, they are dangerous. 4. The careful employment of opium to the extent of relieving pain and lessening peristalsis, but not to the extent of materially contracting the pupils nor of arresting the urinary flow. 5. That very large enemata are very dangerous, and that the bowels should be moved, after all the acute symptoms have subsided, by small oil enemata, aided by gentle aperients, such as small doses of calomel or oil.

Annals of Otology, Rhinology and Laryngology, St. Louis.

March.

47 Morphology and Embryology of the Nasal Fossæ of Vertebrates. L. Dieulafe, Clermont, France.
48 *Macroscopic Diagnosis and General Indications for Treatment of Cancer of the Larynx. J. N. Mackenzie, Baltimore.
49 *Treatment of Hypertrophic and Intumescent Rhinitis. E. F. Ingals, and S. A. Friedberg, Chicago.
50 Treatment of Acute and Chronic Maxillary Sinusitis. C. F. Thelsen, Albany.
51 The Use of the Bur in the Mastoid Operation. A. Barkan, San Francisco.
52 Non-Diphtheritic Membranous Pharyngitis and Rhinitis with Hyperpyrexia and an Unusual Number of Complications. J. F. McCaw, Watertown, N. Y.
53 Deformity of the Auricle from Perichondritis Following Radical Operation for Chronic Middle Ear Suppuration and Multiple Furuncles. W. H. Haskin, New York.
54 Actinomycosis of the Middle Ear, with Postmortem Findings. J. C. Beck, Chicago.
55 Keloid Tumors. G. A. Webster, Boston.
56 Growth of Bone in Both Tonsils. W. W. Carter, New York.
57 Mastoiditis Complicated with Extradural Abscess, Without Discharge from the Auditory Meatus. S. Iglauer, Cincinnati.
58 A Case for Diagnosis. T. H. Farrell, Utica, N. Y.
59 Mueller's Vertical Nasal Cut. F. B. Seitz, Buffalo.
60 Indications for Operating in Acute Mastoiditis. P. D. Kerrison, New York.
61 Seven Intracranial Operations Within a Year. G. F. Cott, Buffalo.

48. **Treatment of Cancer of Larynx.**—Mackenzie insists on the application of the naked-eye method of diagnosis in the case of malignant tumors of the larynx. He urges that every resource and refinement of clinical diagnosis, including the exclusion of syphilis by the iodids and tuberculosis by tuberculin, should be resorted to before an appeal to the microscope is made. The moment the continuity of the growth is broken, in that moment is opened the pathway for self-poisoning, and an unfavorable influence is exerted on the local process. If ulceration has already taken place, a portion of the growth can be taken, if skilfully removed, for microscopic examination, but in the majority of cases the tumor is buried and an exploratory incision for purposes of microscopic diagnosis means two operations. If the tumor is malignant, this opens the way for general dissemination. The microscope should be the final method of appeal. If microscopic examination is necessary the patient and surgeon should be prepared for immediate operation.

49. **Treatment of Hypertrophic and Intumescent Rhinitis.**—In order to show the value of galvano-cautery Ingals and Friedberg studied 100 cases, 50 of the hypertrophic and 50 of the intumescent form of rhinitis, in which treatment had been carried sufficiently far to serve as a basis for comparison. They conclude that the galvano-cautery, when properly used, offers one of the best, if not the best, methods for the treatment of the intumescent and hypertrophic forms of rhinitis. The dangers of the middle ear infection have been greatly exaggerated, not any case in the series and only one among several thousand cauterizations having come under their observation. The liability to adhesion formation is not great, providing sufficient care be taken not to injure the opposite septal mucous membrane, and providing, in cases in which the subsequent swelling is marked, that a probe be passed between the opposing surfaces in four or five days. A 4 per cent. solution of cocain is sufficient in the vast majority of cases to induce complete local anesthesia, from three to six applications on a cotton-wound flat applicator being sufficient for the purpose.

As the result of experience, especially in cases of marked intumescence, they believe that a spray of adrenalin or suprarenalin, gr. 1/8 to the ounce, materially assists in producing anesthesia. The objection that the galvano-cautery destroys too much of the mucous membrane does not obtain if the cauterization is linear, as here recommended, and if it is done properly, whereby very little mucous membrane is destroyed. Scab and crust formation does not occur any oftener following cauterization than after other nasal operations. In fact, it was noted in but very few instances, and in some of these a change in the spray solution caused a cessation of this trouble. No packing is needed to prevent hemorrhage, and this factor makes the discomfort following the operation very much less than when some other methods are employed. There is very little pain after galvano-cauterization of the turbinated bodies.

Journal of the Kansas Medical Society, Lawrence.

May.

62 Incidence of Chronic Bright's Disease. Its Frequency, Diagnosis and Treatment. F. A. Carmichael, Goodland, Kansas.
63 *Treatment of Recent Sprains and Contusions. R. McC. Schauffler, Kansas City.
64 Incurable Skin Disease. W. Frick, Kansas City.

63. **Treatment of Recent Sprains and Contusions.**—Schauffler claims that early massage to diminish the exudate and improve the circulation is strongly indicated. This should be toward the body and from the proximal side of the swelling progressively across it. Unload the blood vessels at a distance up the limb, then rub down the upper edge of the swelling, then advance to the center, etc. Support may be afforded by a flannel bandage or, better, by some form of elastic bandage. This may be replaced, often early and nearly always later, by appropriately applied strips of rubber adhesive plaster. Over the contusion in the soft parts and where applied to prevent swelling, the strap should be at "fascial tension," i. e., about the tightness of the fascia over a large muscle. Only when it is desired to relieve a torn ligament by outside strapping should the plaster be tightly drawn, and in that case it should, of course, never completely encircle the limb. Hot compresses may be used early, or to still greater advantage, dry heat in an appropriate bake oven, if the affected part be a limb. The temperature can be pushed up to 300 F. if proper precautions are taken to absorb all the moisture. The advantage of baking in old joint lesions is well known. When the apparatus is at hand it may be advantageously employed in most recent cases.

Passive motion should be substituted at once by the surgeon. It should be light, but of good range, and persisted in, in spite of moderate pain. Schauffler says that the whole treatment of a sprained ankle by the "army strapping method" fails unless the patient is made to walk from the first; carefully, to be sure, and in short installments, with the foot elevated between times; but walk he must, or the circulation becomes sluggish and the treatment fails. A large joint effusion is the only contraindication to early active motion, except fracture, and some kinds of fracture do well under the ambulatory treatment after a few days of rest. Massage may be continued through the strapping, or an elastic bandage may be used and removed for rubbing, baking, and so on. A belladonna ichthyol ointment may be applied under the bandage. In the latter stages electricity is of distinct value. It is Schauffler's custom to treat all fractures of the forearm between flat padded board splints and to remove these every few days for bathing of the skin and light massage. Passive motion is instituted in ordinary cases within a week and always after two weeks. He has never had the bone slip out of place under such manipulation if it had been properly reduced at first. In fracture of the neck of the femur in old

people he applies no traction or splints. The limb is kept quiet with sand bags for 48 hours, then the patient is made to sit up in a reclining chair and is early allowed to walk with crutches. The weight of the limb is supported by slings of plaster or by a hip splint.

The Journal of Cutaneous Diseases, New York.

May.

65 Life History of a Case of Mycosis Fungoides. G. T. Jackson, New York.
66 *Evolution of a Case of Mycosis Fungoides Under the Influence of Roentgen Rays. C. J. White and F. S. Burns, Boston.
67 *Presence of Indican in the Urine of Those Affected with Dermatitis Herpetiformis. M. F. Engman, St. Louis.

66. **Roentgen Ray in Mycosis Fungoides.**—The patient whose case is reported by White and Burns is believed to have succumbed to the effects of a too rapid relief from his malignant disease. The machines used were six inches and twelve inches in coil. About one-third of the exposures were given on the six-inch coil. The total time of exposures was eight hours and twenty minutes in the space of 54 days. The tumors disappeared rapidly and death evidently was the result of a toxemia caused by the absorption of broken-down tissue.

67. **Indicanuria in Dermatitis Herpetiformis.**—During the past five years Engman has examined the urine of all his patients with dermatitis herpetiformis for indican; the hydrochloric-acid nitric-acid test being the one most frequently employed. The intensity of the resulting color reaction was used as a comparative test of the amount present. He reports on 18 cases, 6 having occurred in his own practice. He reports that 14 of these cases are reliable, the other 2 being of uncertain value. In all of these 14 cases indican was found in marked excess in the urine. In the author's 6 cases eosinophiles were of high percentage in the blood and bullæ contents, and careful observation was made to see if there was coincident eosinophilia and indicanuria. As the indican was found in greatest excess during an exacerbation of the dermal process, and as eosinophile cells occur in the blood of this condition in the highest per cent. during a like period, the two conditions were found to be coincident.

The Journal of the Minnesota Medical Association and the Northwestern Lancet, Minneapolis.

May 1.

68 *Significance of Urinary Analysis in Nephritis. N. S. Davis, Chicago.
69 Common Sources of Error in the Diagnosis of Heart Lesions. C. L. Greene, St. Paul.
70 The Best Form of Incision in the Extraction of Cataract. C. Williams, St. Paul.
71 Submucous Operations on the Nasal Septum, with Special Reference to the Resection Operation. C. N. Spratt, Minneapolis.
72 *Hay fever Cured by the Use of Cold Applications. O. H. Wolner, St. Cloud, Minn.

68. **Significance of Urinary Analysis.**—Davis believes that a pathologic diagnosis is impossible in many cases of nephritis, and that in making a diagnosis, the condition of the blood and blood vessels, and nutrition, and the existence of edema and the uremic manifestations, and not changes in the urine, are of the most importance. Albumin and casts are always significant of defective kidneys. The defect may be functional or anatomic, or both. But the converse of these is not true, for nephritis may exist when the urine is normal. Red blood corpuscles in more than very small numbers indicate an actively developing lesion, and therefore either an acute one or an exacerbation in a chronic one. However, again, the converse of this statement is not true, for red blood corpuscles may be wanting in the urine from kidneys which are acutely inflamed. A large amount of sediment made up chiefly of casts indicates an extensive involvement of the renal epithelium in pathologic changes. The same conclusion is justified when the sediment is large in amount and contains a large proportion of renal epithelium.

The best evidence of the competence of kidneys to perform their work is by estimating from the specific gravity of the urine the total solids voided in twenty-four hours. Such new methods of determination as cryoscopy and electrical conductivity afford no better information. The relative amount of ammonia voided as compared to urea or total nitrogenous matter is sometimes of use in roughly gauging the functional activity of the liver, for it is in this organ chiefly that the ammonium compounds in the blood are transformed into urea. Therefore, if ammonia is eliminated in excess and urea in lessened amount, the liver, rather than the kidneys, is inactive. But it must be remembered that if there is an excess of acid in the blood it may form compounds with ammonia which will effect the same result. This relationship of ammonia to urea exists commonly in uremia and often is a warning of its approach. The recognition of the presence of indican or of combined sulphates in large quantities is important, because they indicate much decomposition of proteids in the intestines and the production of substances which are abnormal to the human body and which, when eliminated by liver or kidneys, may injure them, or at least tax their functional powers. They indicate an intestinal indigestion which must be corrected, especially when there is nephritis, because it so often provokes uremia.

72. **Cold Applications in Hay Fever.**—All other attempts to relieve the patient during a very bad attack of hay fever having failed, Wolner applied cold compresses to the man's forehead and face, wringing them out of ice water, and reapplying them as soon as they began to get the least bit warm. In about three-quarters of an hour relief was obtained. The treatment was kept up constantly for about three hours, and off and on for about six hours. The patient did not have another attack that season. A year later the attack came on again. The patient applied cold compresses for about four hours and was entirely relieved in twenty-four hours. The attack did not recur.

Bulletin of the Johns Hopkins Hospital, Baltimore.

May.

73 Instruction in Operative Medicine. H. Cushing, Baltimore.
74 *Suprapubic Hysterotomy as a Means of Diagnosis and Treatment of the Uterus. W. W. Russell, Baltimore.
75 Home Sanatorium Treatment of Consumption. J. H. Pratt, Boston.
76 Tuberculosis in Penal Institutions. J. B. Ransom, New York.

74. **Suprapubic Hysterotomy.**—The procedure employed by Russell is described as follows: A uterus which is suspiciously enlarged or which has given rise to intractable, unexplainable hemorrhages, is exposed, either in the course of an abdominal operation for other purposes or in the course of a purely exploratory operation in which the abdomen had been opened for the particular purpose of doing a hysterotomy. After the pelvic organs have been examined the uterus is drawn out of the abdominal opening as far as the cervical portion and is surrounded by gauze on all sides. It is then grasped below on both sides by an assistant, who lifts the body of the organ well up while the operator boldly splits it in the median line on the anterior wall, half-way down toward the neck, as well as through the fundus to the posterior surface. The entire thickness of the uterine wall is divided for a distance of two or more centimeters down into the cavity, the mucosa can then be inspected at every point, the finger can be inserted and the whole cavity felt, and if there are any nodules in the wall they can be palpated. If the mucosa is diseased it can be scraped away with surprising ease and with the certainty of reaching all points efficiently, even in the cornua about the entrance of the tubes, a procedure which is almost impossible by the cervical route. The bleeding is only moderate, and it has not been necessary to put ligatures around a vessel. The wound in the uterus is closed with interrupted catgut sutures passed from the peritoneal surface down to the mucous membrane. These are placed about 0.5 cm. apart, leaving the detail of closer approximation to fine catgut sutures. Catgut sutures, if properly sterilized, may be employed with safety in cases in which there is not history of infection; otherwise fine silk is preferable.

Russell says that suprapubic hysterotomy is of conspicuous service in cases of persistent uterine hemorrhage which is not controlled by any form of treatment and in which bimanual palpation of the pelvic organs has given an absolutely negative diagnosis. Small submucous and pedunculated myoma, which do not affect the size or contour of the uterus, but which may be the source of dangerous hemorrhage, are easily

detected and removed by this method. When the abdomen has been opened for some other purpose, and no explanation has been found for the uterine hemorrhage, he would then also advocate its application. No deaths have occurred among 32 patients operated on, notwithstanding the fact that many of these cases were complicated by other serious abdominal or pelvic disturbances, proving quite conclusively the slight danger attending the operation.

The Physician and Surgeon, Detroit, and Ann Arbor, Mich.

March.

77 Congenital Luxation of the Head of the Radius. W. E. Blodgett, Detroit.
78 Conduct of Labor During the Second Stage. W. H. Morley, Ann Arbor.
79 Remarks on La Grippe. J. S. Caulkins, Thornville, Mich.

The Medical Herald, St. Joseph, Mo.

April.

80 Postgraduate Study. A. L. Benedict, Buffalo.
81 *Is Vaginal Cesarean Section Justifiable? P. Findley, Omaha.
82 Pathology of the Morphin Habit and My Preferred Method of Treatment. S. G. Burnett, Kansas City.
83 *Intestinal Tuberculosis and Its Surgery. L. L. McArthur, Chicago.

81-82.—See abstract in THE JOURNAL, April 7, 1906, page 1053.

Journal of the South Carolina Medical Association, Charleston.

April 21.

84 Flat-foot from the Physician's Standpoint. T. Potter, Indianapolis.
85 Bronchopneumonia. E. A. Hines, Seneca, S. C.
86 Lachrymal Stricture, with Exhibition of New Instrument. J. W. Jervey, Greenville.
87 Case of Pneumonia. J. B. Hughey, Greenwood.
88 Ileocolitis. C. C. Gambrell, Abbeville.
89 Treatment of Wounds. G. A. Neuffer, Abbeville.

Brooklyn Medical Journal.

April.

90 Simple Fractures About the Elbow Joint. J. F. Meagher, Brooklyn.
91 Postoperative Diet. H. T. Hotchkiss, Brooklyn.
92 Diet of Diathetic Children. L. Kerr, Brooklyn.
93 Clinical Aspects of Trachoma. G. W. Vandergrift, Brooklyn.
94 Two Cases of Injury of the Ear Caused by Lightning. W. C. Bralslin, Brooklyn.
95 The Automobile as a Practical Vehicle for Physicians. E. P. Hicks, Brooklyn.

Vermont Medical Monthly, Burlington.

April 15.

96 Compensation and Its Effects on Prognosis. J. McCrae, Montreal.
97 Diagnosis and Treatment of Some Chronic Diseases. E. R. Campbell, Bellows Falls, Vt.
98 Anesthesia from Morphin and Scopolamin. T. J. Farnsworth, Clinton, Iowa.
99 Inoperable Case of Cancer of the Uterus Greatly Benefited by Palliative Operation. A. L. Smith, Montreal.

The Medical Fortnightly, St. Louis.

April 25.

100 Intrinsic Characteristics of Paralyses. C. G. Chaddock, St. Louis.
101 Hygiene and Prevention of Tuberculosis. H. Albert, Iowa City.
102 Tuberculous Stricture of the Ileum. J. McH. Dean, and H. P. Wells, St. Louis.
103 Selective Absorption by the Cell. W. F. Waugh, Chicago.
104 Relation of Man to Nature (A Study Prompted by Testimonies of the Sepulchres.) A. S. Ashmead, New York.
105 Case of Megalogastria. W. Rush, St. Louis.
106 Presentation of Specimens. F. Reder, St. Louis.

Western Medical Review, Lincoln, Neb.

April.

107 Foreign Bodies in the Esophagus, and Foreign Bodies in the Larynx and Trachea. W. M. Cowgill, Lincoln.
108 Diseases of the Accessory Sinuses of the Nose. D. C. Bryant, Omaha.
109 Laryngeal Affections of Singers. H. B. Lemere, Omaha.
110 Limitations of Office Gynecology. W. O. Henry, Omaha.

Virginia Medical Semi-monthly, Richmond.

April 27.

111 Types of Modern Doctors. H. A. Royster, Raleigh, N. C.
112 Treatment of Renal Calculi and Pyelitis. L. C. Bosher, Richmond.
113 Milk Supply of Richmond, Virginia, from a Sanitary Standpoint. F. C. Levy, Richmond.
114 Principles of Surgery. S. McGuire, Richmond.

Annals of Gynecology and Pediatry, New York.

April.

115 Recent Researches Into the Bacteriology of Peritonitis in Relation to Pelvic Surgery. P. W. G. Sargent, London, Eng.

Southern California Practitioner, Los Angeles.

April.

116 Intestinal Obstruction in Children. W. A. Edwards, Los Angeles.
117 Hydrotherapy. B. S. Angier Los Angeles.
118 Poetical Nomenclature of Human Anatomy. H. Sherry, Pasadena.
119 Eustachian Catheterization Through the Mouth. H. A. Kiefer, Los Angeles.
120 Scopolamin-Morphin Anesthesia. Z. T. Malaby, Pasadena.
121 Ocular Symptoms of Suppuration in the Nasal Sinuses. H. Hastings, Los Angeles.

Ophthalmic Record, Chicago.

April.

122 Cholesterin Crystals in the Vitreous with Optic Atrophy. G. E. Seaman, Milwaukee.
123 Some Forms of Hereditary Cataract. C. A. Wood, Chicago
124 Two Cases of Plastic Lid Building. C. H. Baker, Bay City, Mich.
125 Glioma of the Retina. E. O. Sisson, Keokuk, Iowa.
126 Extraction of Cataract in Its Capsule. W. R. Parker, Detroit.

The Medical Sentinel, Portland, Ore.

April.

127 Retrodisplacements of the Uterus. M. D. Equi, Portland.
128 Pulmonary Tuberculosis. E. A. Pierce, Salem.
129 Hydatiform Mole. M. Brundage, Shelley, Idaho.

The Wisconsin Medical Journal, Milwaukee.

April.

130 Penetrating Wounds of the Abdomen. G. A. Bading, Milwaukee.
131 Feeding of the Typhoid Fever Patient. T. J. Redelings, Marinette.
132 Thoughts Suggested by Recent Articles on Pneumonia. G. F. Butler, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

April 28.

1 *Extroversion of the Bladder. A. A. Lendon.
2 *Id. H. S. Newland.
3 Bradycardia, with Arrhythmia and Epileptiform Seizures. J. M. Finny.
4 *Rickets in Relation to the Duration of Lactation. A. Dingwall-Fordyce.
5 *Pleuritic Effusion Treated with Adrenalin by the Preliminary Intra-serous Injection Method. W. Ewart and F. Murray.
6 *Treatment of Branchial Fistula. M. L. Chevers.
7 Incubation Period of Malta Fever. E. H. Ross.
8 Mediterranean Fever in South Africa. C. Birt.

1. **Extroversion of Bladder.**—Special reference is made by London to the extraperitoneal transplantation of the ureters into the rectum and three cases are reported. In the first case, after careful disinfection of the bladder surface, a director was passed in each ureter. A button or rosette of mucous membrane was cut around the ureteral orifice so as to save any valvular or sphincteric action which that opening might possess. A finger was inserted into the rectum and a pair of Lister's forceps was guided along the finger and thrust through the wall of the bowel. Its blades were opened widely enough to seize the end of the ureter, which was then drawn through into the rectum and kept there in position with an ordinary pair of clip forceps. The same was done on the opposite side, the handles of the forceps dangling outside the anus. Unfortunately, an assistant removed the forceps attached to the right ureter, which worked its way out of the rectum. Later this ureter was transplanted into the sigmoid flexure. The result was an excellent one. There was no irritation of the rectum, no frequent urination, and the patient has enjoyed physical comfort for nearly seven years. In the case of the second patient the right kidney had been removed previously so that only one ureter remained to be dealt with. The only modification of the technic of the previous operation consisted in first inserting a rubber catheter, with its point removed, into the ureter, and stitching it to the mucous membrane. This facilitated the drawing of the ureter into the rectum without so much bruising of the orifice. The patient died three months later, and at the autopsy it was found that the ureter had escaped from the rectum, the urine meanwhile having found its way through an ulceration into a loop of small intestine, at a distance of a few inches from the ileocecal valve. The third patient was operated on by this method with complete success about a year ago.

2. **Id.**—Newland also calls attention to the advantages of extraperitoneal implantation of the ureters and reports one successful case.

4. **Rickets and Lactation.**—With a view to determining the relation of the incidence of rickets to the varying conditions

under which the function of lactation is exercised, Fordyce examined 200 children of different families, aged from 6 months to 3 years. Rickets was marked in 61, slight in 55 and absent in 84 patients. He found that the amount of rickets among infants mixed-fed is approximately the same as among those bottle-fed, but differs in this respect that whereas among the former the percentage number of marked cases of rickets among those suffering from the disease was 50 per cent., in the latter it was 65.1 per cent. There appeared to be a steady increase in the amount of rickets with successive breast-fed children in the family. Of first children breast-fed 25 per cent. showed rickets; of second children, 41 per cent.; of third, 58 per cent., and of those later, 65 per cent., this gradual increase being probably in part accounted for by the later children getting a less plentiful supply of maternal milk than the earlier. Of children later than the third in the family the percentage of those with rickets among the breast-fed not only equaled but even exceeded that of corresponding children bottle-fed. Fordyce thinks that it is clear that bottle-feeding *per se* has no greater tendency to produce rickets among later children than among those earlier in the family.

5. **Adrenalin in Pleuritic Effusions.**—Ewart and Murray treated their patient at first by a modification of Barr's method, which combines the evacuation of fluid with its replacement by air. The air was not injected, but was allowed to be drawn in by thoracic suction. The secondary effusion which ensued was treated with preliminary intrapleurosus injections of adrenalin with a view to eventual paracentesis, but the latter was not performed as the fluid underwent complete absorption. Five injections were given of 10 minims each of a 1 to 1,000 solution of adrenalin.

6. **Treatment of Branchial Fistula.**—In the case reported by Chevers the fistula extended from the origin of the sternomastoid into the clavicle, at which point it was discharging, and ended at or about the level of the upper border of the hyoid bone. There was no tumor in connection with the fistula or anywhere in the neck. There was one communication in the pharynx. The fistula had been discharging since the patient (now 22) had been a child. The patient was treated by electricity, the galvanic current being used daily for a few minutes after the fistula had been washed out thoroughly with a 1 in 40 phenol solution. The method employed is described at great length.

The Lancet, London.

April 28.

9 Bearing of Metabolism Experiments on the Treatment of Some Diseases. E. I. Spriggs.
10 *Recent Advances in the Surgery of the Blood Vessels. D. Power.
11 Hospital Ships and Their Working in War and Peace. P. B. Handyside.
12 Leprosy in Cape Colony. R. S. Black.
13 Case of Acute Meningococcal Septicemia. F. W. Andrewes.
14 *Volvulus of the Cecum Treated by Reduction and Appendicostomy. R. C. B. Maunsell.

10. **Surgery of the Blood Vessels.**—Power discusses the various methods now employed in the treatment of aneurisms of both the arterial and the venous systems.

14. **Volvulus of Cecum.**—When Maunsell opened the abdomen in this case a tensely distended cecum and ascending colon were seen filling the lower abdomen and pelvis. These were deflated and withdrawn, when it was found that the cecum and portion of the ascending colon had made a complete turn from below upward and from right to left. The lower portion of the ileum having been carried in front of the colon was tightly wound around the neck of the strangulated large intestine. The twist having been reduced, it was found that the cecum and colon had a well-formed mesentery, thus rendering volvulus a possible and likely accident. Having closed the incision which had been made for deflation, he determined to fix and to drain the cecum by performing the operation of appendicostomy. In this instance he had to ligate and to divide a portion of the meso-appendix, but took care to leave sufficient blood supply to the portion near the cecum. A stab wound was made at the outer border of the rectus and the appendix was drawn through and fixed by two sutures, its distal end was amputated, and its lumen was dilated with sinus forceps. A gum elastic catheter was then passed through it into the cecum and fixed in position by an encircling ligature. The after-history of the case was uneventful except for some slight suppuration which occurred in the abdominal wound about eight days after operation, evidently due to infection of the incision when the intestine had been opened for deflation.

The after-history of the appendicostomy is of interest. The catheter was left in position for four days, when the bowels were well cleared out by castor oil. From the first a small quantity of fluid feces and a large quantity of intestinal gas escaped through the catheter, thus keeping the intestines free from gaseous distension and rendering the patient's convalescence most satisfactory. As soon as the appendicostomy had completed its mission it became necessary, or at least advisable, to close the little opening. This was done by excising and invaginating the mucous lining of the stump of the appendix. The muscular tube healed promptly.

Intercolonial Medical Journal of Australasia, Melbourne.

March 20.

15 Puerperal Sepsis. A. S. Vallack.
16 *Case of Multiple Polypi of Gastrointestinal Tract, Causing Repeated Intussusception. D. McM. Officer.
17 Diagnosis and Surgical Treatment of Gallstones. G. A. Syme.
18 *Case of Spinal Hydatid. E. J. Connell.
19 Complete Dislocation of the Fourth Cervical Vertebra. J. D. K. Scott.
20 *An Uncommon Dislocation. W. A. James.

16. **Multiple Polypi of Intestine.**—In the case reported by Officer the whole intestinal tract, from the stomach to the rectum, except the ileum, was found to contain tumors, some sessile, some pedunculated, the largest being in the stomach itself near the pylorus. There were 41 tumors altogether.

18. **Spinal Hydatid.**—Connell reports the case of a man, aged 48, who complained of considerable pain in the left groin, worse after work and after going to bed. The veins of the left leg became dilated; the femoral glands were enlarged and tender, and there was diminished tactile sensibility in the region supplied by the upper part of the external cutaneous nerve (second lumbar). All reflexes were normal. There was some wasting of the left buttock and a general loss in weight. For some time the patient was regarded as having some lesion about the brim of the pelvis and groin. He seemed to improve with rest and local applications of aconite, and hot fomentations.

Later there was loss of power in the whole left leg and absence of the reflexes, with the exception of the cremasteric. The condition was then regarded as one of pressure in the spinal canal. The symptoms became gradually worse. A laminectomy was performed. At the base of the under edge of the lamina of the twelfth dorsal, on the left side, was a small erosion through which a cyst escaped. An extradural cyst, of the size of a pigeon's egg, was found beneath the twelfth dorsal and part of the first lumbar arches. On several occasions afterward daughter cysts escaped from the wound. The patient made a complete recovery.

20. **Uncommon Dislocation.**—The case reported by James is one of dislocation of the manubrium sterni from the gladiolus following a severe injury caused by the man being pinned against the wall of a shaft by a mass of earth weighing about half a ton.

Annales de l'Institut Pasteur, Paris.

Last indexed page 1243.

21. (XX, No. 3.) *Final Installment of Report on Yellow Fever by French Commission to Brazil.—Études sur la fièvre jaune. E. Marchoux and P. L. Simond.
22 Negative Action of Radium in Rabies.—De l'action du radium sur le virus rabique. J. Danysz.
23 Toxine produite par l'Aspergillus fumigatus. E. Bodin and L. Gautier.
24 *Sur l'origine des anticorps, précipitines et Agglutinines. R. Kraus and J. Schiffmann.

21. **Infants Responsible for Endemic Yellow Fever.**—This final part of the official report of the French commission to Brazil fills 45 pages and is accompanied by 19 full-page plates showing the pathologic anatomy of yellow fever in various organs. Marchoux and Simond ascribe the perpetuation of yellow fever in endemic foci to the infant population. In a climate which allows the *Stegomyia fasciata* to flourish all the year around by the favorable conditions of temperature and moisture, when yellow fever is introduced for the first time an extensive epidemic results, as no one is immune, causing

deaths, and leaving the population almost entirely vaccinated and immune to the disease. The few people who escape the epidemic furnish later the isolated, so-called sporadic cases which form the connecting link between one epidemic and another. This contingent would soon be exhausted, however, were it not for the births. A new contingent is being constantly furnished by the newborn infants, and this infant population, constantly renewed, is the principal element which creates and perpetuates endemic yellow fever. On account of the mildness of the disease in children, mentioned in the previous communication, summarized in these columns on page 1243, the disease in the children escapes notice, and this explains why years pass after a violent epidemic without the development of any recognized new cases. The disease is supposed to have died out, when in reality the town is an endemic focus. This is proved by the infection of newly arrived, non-immune aliens, who contract the disease in the severe type which it assumes in the adult. These views are sustained by the experiences with yellow fever at Guadeloupe and elsewhere in the Antilles. A mild disease has long been known there among children which has never been recognized as yellow fever, principally because none of the adults contract it. The adults are all immune to yellow fever and the children are the only ones who take it. As it usually has such an attenuated course in them its true nature has not been recognized. In the endemic foci, therefore, it is the floating foreign population which furnishes the contingent for typical yellow fever. When this floating population is increased by public works, then formidable and deadly epidemics of yellow fever break out, such as was observed at Santos when the new harbor was built. One of the conclusions drawn from the facts presented is that a city in which the adult alien population furnishes the majority of cases of yellow fever is an endemic focus whose permanent inhabitants are all immune. If, on the other hand, a group of aliens escapes the disease when it is epidemic it is safe to conclude that they come originally from some locality where the disease is endemic. This explains the supposed immunity of the blacks. In conclusion Marchoux and Simond protest energetically against the assumption that it is possible for the stegomyia to become infected elsewhere than from man or that the yellow fever virus can affect man without the intermediation of the mosquito. An official or a physician, they say, who is not thoroughly convinced in respect to the exclusive rôle of the mosquito in the transmission of yellow fever is incapable of organizing effectual prophylaxis, and endangers the colonists, the soldiers and other people in his charge. Sanitation of an endemic focus or changes in its population, climate or in other conditions which have rendered it favorable for the stegomyia may exterminate the disease and free the place from being an endemic focus. On the other hand, a place in the mosquito zone where the disease has hitherto appeared only accidentally, as the stegomyia was imported, if conditions favoring the growth of the stegomyia develop, may become an endemic focus at any time. The microscopic pathologic anatomy of yellow fever is that of a generalized fatty degeneration, a diffuse steatosis. The reason why Petropolis is exempt from yellow fever, although only eighty miles from Rio, is its altitude, with the cool nights. The stegomyia may be brought up on the trains, but it is rendered torpid by the coolness and neither lays eggs nor bites. Even infected mosquitoes soon lose their infecting power in the chill of the nights. In Rio Janeiro the present conditions of distribution of the drinking water favor the proliferation of mosquitoes, and a number of remedies are suggested, among them that sea water which does not attract mosquitoes should be used for industrial purposes, fountains, etc.; that the trees in the gardens be freed from the parasites of the bromelia genus, and that the ornamental vases on houses, etc., be filled with cement. As the number of places where the mosquitoes are liable to lay their eggs diminishes, it will be easier to keep watch over those that remain. After a few years of work by the sanitary brigades the entire species of *Stegomyia fasciata* can be eradicated from the city. And this is the only certain means of stamping out yellow fever. The general conclusions of the entire research are recapitulated at the close of this final part of the report. The principal points have already been summarized in these columns. See page 917.

24. **Origin of Antibodies.**—The conclusions of research in Metchnikoff's laboratory by Kraus and Schiffmann are to the effect that the bactericidal antibodies are generated in the spleen, bone marrow and lymphatic ganglia. The precipitins and the agglutinins, on the other hand, are generated in the vascular system.

Annales des Mal. des Org. Gén.-Urin., Paris.

Last indexed page 890.

25 (XXIII, No. 23.) L'éducation clinique. F. Guyon.
26 (No. 24.) Les propagations ganglionnaires à distance dans les tumeurs de la vessie (of bladder). Grandjean.
27 Emploi de l'oxycyanure de mercure dans les voies urinaires. J. M. Bartrina and B. Oliver (Barcelona).
28 Prostatectomie appliquée au traitement de l'hypertrophie de la prostate. E. Loumeau (Bordeaux).
29 *Cathétérisme urétéral. L. Suarez (Buenos Ayres).
30 (XXIV, No. 1.) *Forme particulière de tuberculose primitive du rein: Le rein polykystique tuberculeux (kidney). F. Curtis and V. Carlier (Lille).
31 (No. 2.) *Etude du diaguostie de la tuberculose de l'appareil urinaire; cytologie urinaire. S. Colombino (Turin).
32 Des cystoscopes à air et à eau. G. Whiteside (Portland).
33 Précocité et impuissance sexuelle (impotence). C. Féré.
34 Ablation d'un épithélioma du testicule avec toute la gaine des vaisseaux spermatiques. P. Mauclaire.
35 (Nos. 3-4.) Tuberculose de l'urétère et du bassinet (pathanatomic study of tuberculosis of ureter and pelvis). N. Hallé and B. Motz.
36 Nouveau séparateur intravésical des urines. R. Dalla Vedova (Rome).
37 Cas de néphrite lithiasique polykystique; anurie; décapsulation rénale. M. Patel.
38 *Les urinaires fibrineux. G. Padoa.
39 (No. 5.) *Les ruptures de l'urèthre chez l'enfant. A. Broca.
40 Traitement des suppurations chroniques prostatiques et péri-prostatiques. E. Desnos.
41 La stéréoecystophotographie. S. Jacoby (Berlin).
42 La stéréoecystoscopie. Id.
43 Abcès de la prostate et du rein. Périnéphrite suppurée causée par un furoncle. Nicolich.
44 Nouveau méthode de massage de la prostate (vibratory massage). J. de Sard.

29. **To Facilitate Catheterization of Ureter.**—Suarez cuts off the end of a No. 18 sound and slips it over the catheter in the ureter, after withdrawal of the cystoscope, until the cut-off tip of the sound enters the bladder. The outer end of the ureter catheter is kept at a higher level than the outer end of the bladder sound. The urine from the bladder flows out through the latter, and the ureter catheter can be withdrawn through it.

30. **Polycystic Tuberculous Affection of Kidney.**—Curtis and Carlier describe a case of this kind. The affection was distinguished by its chronic and protracted character. The anatomic features were the hypertrophy of the kidney and the multiplicity of the cysts, suggesting the congenital polycystic condition.

31. **Diagnostic Cytologic Findings in Tuberculous Urine.** Colombino calls attention to the changes in the leucocytes which he has found exclusively in cases of tuberculous processes in the urinary apparatus. The microscope shows that the leucocytes are longer than usual and grooved, and that the outline is angular instead of round. The protoplasmic outline is very irregular and looks as if the envelope had burst. When such leucocytes are found mixed with red corpuscles the diagnosis of tuberculosis is almost certain. The nuclei may be found almost entirely detached in some of the leucocytes, and vacuoles can be seen in the protoplasm. He gives the details of 20 cases with 13 non-tuberculous cases for comparison.

38. **Fibrinous Tube Casts in Urine.**—Padoa describes casts formed by disintegration of red corpuscles in the tubuli. Their presence indicates preceding extravasation of blood.

39. **Rupture of Child's Urethra.**—Broca reports a case and discusses the indications. Immediate suture is required, but even the most careful technic does not insure against stricture later. He has had cases completely successful and others in which the patients returned with stricture. Speedy and very serious stricture may develop after apparently trivial injury without perineal tumor and with very little dysuria and a few drops of blood.

Revue de Chirurgie, Paris.

Last indexed page 1145.

45 (XXVI, No. 3.) *Massage of Heart.—Le massage du coeur chez l'homme, en particulier dans la syncope chloroformique. C. Lenormant.

46 *Des gros kystes de l'ouraque (of urachus). X. Delore and G. Cotte.
47 Cas d'actinomycose cervico-cranienne. F. Terrier and C. Dujarier.
48 *Les tumeurs mixtes du sein (of mamma). P. Lecène.
49 Urétérocystostomie. H. Pons.
50 *Des lipomes ostéopériostiques. Schwartz and Chevrier. (Commenced in No. 1.)
51 *Le traitement rational des luxations congénitales de la hanche (of hip joint). P. Le Damany (Rennes). (Commenced in No. 2.)
52 (No. 4.) Les tumeurs fibro-kystiques de l'utérus. G. Piquand. (Commenced in No. 3.)

45. **Massage of the Heart.**—Le Normant's study of the 25 cases of direct massage of the heart which have been reported shows that in 4 cases the heart-beat was definitely restored, but the contractions ceased when the massage was discontinued, either at once or soon after. In the 8 positive cases only 4 of the patients were definitely revived. In the other 4 the heart continued to contract, apparently normally, for from five to twenty-four hours, and then gradually became quiescent again. The 4 cases of definite survival include Cohen's case, published in THE JOURNAL for November 7, 1903, besides Lane's, Keen's and Sencert's cases, 1902 to 1905. The 4 cases of survival for a few hours includes one personally observed by Le Normant and not published before. The final conclusions of his monograph are that massage of the heart is an easy maneuver, simple and free from danger, if done through an incision in the abdomen and through the diaphragm without opening the latter. It is liable to prove successful in all cases of sudden arrest of the heart action, especially in chloroform syncope. Under these conditions it has resulted in temporary survival in 4 instances, with 1 permanent resuscitation, not to mention the dubious cases of Lane, Cohen and Igelsrud, in which the resuscitation might have been due to other factors. As adjuvants he recommends artificial respiration and possibly also centripetal intra-arterial injections of serum to raise the arterial tension. He gives the details of all the 25 cases. In Sencert's favorable case, after eight minutes of artificial respiration, etc., without response, he introduced his hand through the laparotomy wound and applied rhythmic massage to the heart, which could be felt empty and flaccid. After five minutes of massage the heart could be felt growing hard and larger, and a spontaneous contraction was observed two minutes later. The patient was an emaciated man of 51 undergoing a second operation for stone in the common bile duct. He felt no ill effects later from what he had been through, except slight occasional pains in the intercostal region.

46. **Cysts of the Urachus.**—Delore and Cotte publish a case of a very large cyst in the urachus in a young woman. It was operated on under the diagnosis of tuberculous peritonitis with ascites. It had been about a year in developing and contained 8 or 10 liters of fluid. The walls were about 3 or 4 mm. thick and the location of the cyst was mostly intraperitoneal. Eight similar cases are on record. The extirpation of the cyst was not a difficult matter. The discovery of a suprapubic and subperitoneal pedicle was the only means of differentiation in some cases, and then only during the operation. When the cyst was merely punctured the fluid promptly reaccumulated and a persisting fistula frequently followed. In one instance the cyst was tapped three times in nine months, and 18, 17 and 6 liters of fluid were withdrawn, and 50 were found at the autopsy.

48. **Mixed Tumors of the Breast.**—Lecène reports 2 cases in which a tumor removed from the breast of women 25 and 54 years old presented characteristics of sarcoma and also of cartilaginous and bone elements. The tumors were evidently, he thinks, of teratoid origin, due to embryonal inclusion of ectodermic or mesenchymatous elements. In evolution, in the physical signs and prognostic significance they resemble ordinary encapsulated tumors of the breast (adeno-fibroma, cystic adeno-sarcoma). The cases of cholesteatoma of the breast probably come also within this category.

50. **Osteo-periostic Lipomas.**—Schwartz and Chevrier advocate radical extirpation for these lipomas when the growth is rapid, but add that intervention may be postponed when the growth is very slow and gradual. They have collected 63 cases of these tumors at various points, including a number from their own experience. Some were evidently of congenital and others of acquired origin. They may have the most diverse sites, sometimes remote from the centers of complementary ossification and the epiphyseal cartilages. The liponia may be encapsulated or diffuse, and may have contingent connection with organs, muscles, vessels, nerves or the large joints. In only one of the cases reported was exostosis observed in connection with the osteo-periostic growth.

51. **Rational Treatment of Congenital Luxation of Hip Joint.**—Le Damany's extensive monograph fills 76 pages and is accompanied by 44 illustrations. He affirms that anthropologic congenital luxation of the hip joint does not occur before birth, but becomes established during the course of the first year. It may be prevented, and this prophylaxis is the ideal treatment. The cure of the dislocation is simpler and easier the younger the child, and it should be commenced early, although the care for cleanliness requires constant supervision, and fixation of the reduction is a little more difficult and tedious in the very young than after the age of 3. He describes and illustrates his technic in detail. He commences treatment by the fifteenth or the eighteenth month, when radiograms have made the diagnosis certain. In reduction he follows the modified Paci-Lorenz technic under an anesthetic. A plaster cast is then applied, holding the femur in abduction of from 80 to 90 degrees with flexion of the thigh, sometimes at a right angle. This cast is worn for two or three months, when it is substituted by correcting apparatus. This holds the limb in adjustable abduction, which can be gradually diminished from 90 to 60 degrees, or down to zero. The apparatus consists of a plaster corset supported by the iliac crests with a projecting metal arm, parallel to the thigh, fastened to a bracelet worn above the knee, with chains and straps to regulate the position of the femur. The child is able to walk, even when the apparatus is applied to both hip joints at once. In conclusion he describes the technic for various exceptional conditions liable to be encountered. His aim is to correct not only the luxation of the hip joint, but also the causal malformation as well as the secondary deformity. He insists that congenital luxation is always perfectly curable both from the anatomic and the functional points of view. He intends publishing soon his clinical experiences, which have been most gratifying.

Revue de Gynécologie, Pozzi's, Paris.

Last indexed page 758.

53 (X, No. 1.) *La sarcome du vagin chez l'enfant (vaginal sarcoma in children). M. Rollin.
54 Du méat hypogastrique et de l'épisiorrhaphie appliquée au traitement de certaines Fistules uréthro-vesico-vaginales. Chénieux (Limoges).
55 *Opérations sur la portion rétropancréatique du canal choledoque après mobilisation du duodénum. L. Sencert (Nancy).
56 *Le volvulus du caecum. Etude clinique et therapeutique. P. Cavaillon and E. Delvoye (Lyons).

53. **Sarcoma in Vagina in Childhood.**—Rollin gives summaries of 12 cases of sarcoma developing in the vagina of girls under 8. In some the tumor was noticed soon after birth. The first symptom was generally bleeding from the vagina, but sometimes there were pains and disturbances in urination and defecation, and occasionally the protrusion of the tumor was the first manifestation of its existence. The course of these tumors in children is essentially rapid. Death is soon entailed by the local extension of the tumor and the resulting cachexia. Metastases at a distance are rare. The duration varies from one to eighteen months. The prognosis is grave, as the diagnosis is generally not made until too late for relief from operative measures. Recurrence is the rule, and with exception of Schuchardt's and Hollaender's successful cases, the children soon succumbed to recurrence. Tumors in the vagina in childhood are almost always sarcomas. Any symptoms calling attention to the genital sphere in children should be regarded with suspicion. Physical examination is the only means of detecting the neoplasm. In children the sarcoma usually develops as a solitary bunch at first, assuming the bunch-of-grapes form later. The structure of the peripheral portions may differ from that of the base of the tumor. It may be mistaken for a harmless growth on this account.

55. **Access to the Common Bile Duct.**—Sencert gives an illustrated description of his method of opening up the common

bile duct. He calls it the retroduodenal route with mobilization of the second part of the duodenum. Its advantages are its great simplicity, the ease with which it can be done in all cases in which the region beneath the liver is not altered by peritoneal neoformations, the possibility of extraperitoneal operating with subperitoneal drainage and "peritonization" similar to that possible in the small pelvis. It is a less serious operation than exploratory duodenotomy followed by transduodenal choledochotomy. The technic has been successfully applied on 6 patients to date.

56. **Volvulus of Cecum.**—A case personally observed is described in detail and 39 others previously published are reviewed. Early reduction of the volvulus was successful in 74 per cent. of these cases. Previous statistics have reported cures in 50, 55 or 67 per cent. after operative intervention and a mortality of 100 per cent. without surgery. The earlier the operation the better the prospects. The majority of cases have been observed in Finland (79), Germany (50) and England (57). Only 4 or 5 cases are known in France, and none in the southern countries. These differences are evidently due to the lighter diet in the South, he thinks. Sargent's patients were mostly from 20 to 40 years old, but one was 9 days old; another 10 months; 3, 5 years, and 8 from 10 to 20 years old. The symptoms are those of recurring colic of the cecum, aggravated by lying on the side. The patients sometimes learn to assume an attitude that will favor spontaneous reduction of the volvulus. The protrusion of the cecum may simulate a floating kidney, but the gurgling sound produced by palpation differentiates it. The volvulus occurs, as a rule, in healthy persons, or there may have been a history of repeated colics. The onset of the pain is sudden, and it is not localized to such an extent as in appendicitis. The first phase is that of cecal colic of unusual severity; the second phase is a remission of the pains after two or three days, and the third phase is that of complete occlusion. The deceptive remission for one or two days frequently makes the surgeon hesitate. Faltin cites one case in which the course was more rapid than the ordinary five to eight days; the cecum became gangrenous and perforated in 55 hours. The principal diagnostic features are the sudden onset, the localized meteorism, toward which the peristaltic waves are directed, the absence of temperature, the arrest of feces and flatus, and the false remission which follows the tempestuous onset. Spontaneous reduction is favored by lying on the side, and by massage of the abdomen. Some patients have felt spontaneous reduction follow a sudden violent effort to turn over in bed. In a few instances relief was obtained from purgatives and injections. If reduction has not been accomplished by the second or third day, surgical intervention is necessary. Resection is preferable, for reasons enumerated, uniting the ileum with the colon with side-to-side anastomosis, and drainage through the lumbar region, the vagina or rectum.

Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, Jena.

Last indexed, page 994.

57 (XVI, No. 1.) *Die chirurgische Therapie des Magen-Ulcus. A. von Eiselsberg.
58 Ueber Hofrat Nothnagel's zweite Hypothese der Darmkolikschmerzen (intestinal colic). K. G. Lennander.
59 Leibschmerzen, ein Versuch, einige von ihnen zu erklären (causes of pain in abdomen). Id.
60 *Zur Frage der Kryoskopie und ihrer Technik. A. Neudörfer.
61 Ueber kongenitale vollkommene Synostose der Wirbelsäule in Verbindung mit Wachstumsanomalien der Extremitätenknochen (rigid spine, etc.). W. Voltz.
62 *Zur Frage des Staphylokokken-Erysipelns. G. Jochmann.
63 *Fall von Tendinofasciitis calcarea rheumatica. M. Neuwirth.
64 *Ueber die Aetiologie der Appendicitis. P. Klemm.
65 *Sanduhrmagen (hour-glass stomach). B. G. A. Moynihan (Leeds).

57. **Surgical Treatment of Gastric Ulcer.** The article by von Eiselsberg, which opens the sixteenth volume of the "Communications from the Borderland of Medicine and Surgery," was read as one of the main addresses at the recent International Congress of Surgery. He reviews his extensive experience and advocates immediate laparotomy in case of perforation. In case of severe gastric hemorrhage he tries internal measures first. Among these measures found useful are rinsing with ice water, solutions of iron and 1 per thousand silver nitrate. He gives his patients a 10 per cent. solution of gelatin to drink and injects subcutaneously up to 6 gm. of a 2 per cent. solution of gelatin after repeated sterilization. Cautious evacuation of the stomach is advisable on account of the shock. Surgical interference is necessary in case of recurring severe hemorrhages. He has observed cases of perforation and also of fatal hemorrhage occurring tardily after skillful resection of the stomach. Consequently he now advocates less extensive operations as a rule. He has witnessed subsidence of large areas of induration of the stomach wall and serious hemorrhages arrested as if by magic after gastroenterostomy. In case of duodenal stenosis or ulcer it is the only operation, and the results are generally brilliant in case of stenosis of the pylorus from an ulcer. Jejunostomy can be done on the weakest patient and with local anesthesia is scarcely at all dangerous. He considers it the standard operation in case of hour-glass stomach with a very small cardiac portion, when the stenosis does not permit gastroanastomosis. Also in case of contraction of the stomach as result of multiple ulcerations or of ulcerative gastritis and perigastritis, and plastic linitis. It has also rendered him good service in some cases of severe hemorrhage, in which he refrained from other intervention, even from any examination of the stomach. It is also very useful in case of the action of a caustic on both esophagus and stomach, and it allows the feeding of the patient after suturing a perforation in the stomach. In this latter capacity he regards it as a valuable aid in internal medication, as it leaves the stomach entirely at rest while allowing much more abundant feeding. As such a fistula is generally continent, and as it soon heals spontaneously after withdrawal of the catheter without further operation, the inconvenience from it is trifling. He is convinced that the cases now accepted as spasm of the pylorus will be found to have some ulcerative process at bottom. He mentions that his pupil, Lempp, is now engaged in research which may ultimately lead to the production of a practical gastroscope. Lempp is trying to produce an instrument with which, through a small opening into the stomach, its interior can be safely and thoroughly inspected. Retrocolic posterior gastroenterostomy is the best means of treating obstinate spasm of the pylorus. Plastic operations for this condition give only transient results. In only a single instance has he had peptic ulcer develop after gastroenterostomy.

60. **Cryoscopy and Its Technic.**—Neudörfer states that Kümmell was the first to point out the importance of cryoscopy as a diagnostic test of kidney functioning. His later experience has only confirmed its value more and more. He has never had a mishap in the 160 cases in which he has performed nephrectomy since its introduction, and regards it as a fine test of the total work done by the kidneys. The Beckmann apparatus is used. The glass cylinder and platinum stirring rod are rinsed again before using with boiled distilled water and dried by warming the glass tube. A trocar needle is inserted in a congested vein in the arm and the blood drawn directly into the glass cylinder. It is slowly stirred and the fibrin clings to the platinum stirrer. The fibrin generally does not disturb the freezing point, but still it is better to remove it; this is done with sterile gauze. The blood is then placed in the freezing mixture. The freezing point of boiled distilled water is determined anew each time. Heidenhain has demonstrated that the zero point may vary even when the fluid is at rest. Before each measurement the thermometer is rinsed with distilled water and wiped dry with gauze. He usually takes two measurements and records the average as the true freezing point. Thermometers with fixed zero points are not advisable as the actual freezing point varies with external conditions, the temperature of the room, etc., consequently he always determines the exact freezing point anew for each test. He uses a freezing mixture of minus 4 C. The ice must be well broken up and the vessel must be about a third full of water, as otherwise the freezing mixture does not press close against the inner vessel, which is indispensable. Another important technical point is that the blood and the water are cooled before attempting to determine the freezing point. A grain of salt or rinsing the tube in alcohol is a frequent source of error unless guarded

against. In conclusion Neudörfer tabulates a number of cases to show the value of information derived from cryoscopy in various cases; the findings were confirmed by the later course of the affections. He also tabulates for comparison nearly 50 cases of heart disease or pneumonia, without kidney disease, the freezing point of the blood ranging in all merely from minus 53 to minus 57 C. In 17 cases of kidney affections tabulated the range of the freezing point was from minus 58 to minus 79 C. in all but 2, in whom it was minus 56. The trouble in this latter group proved to be due merely to enlargement of the prostate. One patient with interstitial nephritis had a freezing point of minus 56 in February, minus 58 in April, and minus 60 in June, the progressive course of his kidney trouble being reflected in the freezing point of his blood. No influence from cyanosis on the freezing point could be detected, nor from age, pregnancy, nor the presence of a tumor. His youngest patient was a child of 8, his oldest a man of 81; in both the normal freezing point was the same, minus 56 C. It was also within the normal range in 10 cases of large abdominal tumors, cancer or myoma, and also in 10 cases of pregnancy at term.

62. **Staphylococcus Erysipelas.**—Jochmann reports the case of a letter carrier, 38 years old, who complained one morning of pains in the nose, and erysipelas developed from the pustule which soon appeared. In two days the patient was delirious and he died on the sixth day after the first symptoms, with indications of general sepsis. The *Staphylococcus pyogenes aureus* was cultivated in pure cultures from the blood during life (500 colonies in 10 c.c. of blood), and from the tissues after death. No streptococci were discovered at any time.

63. **Rheumatic Calcareous Tendon and Fascia Inflammation.**—Neuwirth gives an illustrated description of a case of primary necrosis in the tendons and aponeuroses over the entire body, with subsequent deposits of lime, mostly in the neighborhood of the joints. The muscles were atrophied and anemia developed, probably the result of gastrointestinal disturbances. Pneumonia or endocarditis were noted as complications in the few similar cases on record. The course is a prolonged one with frequent remissions, but tends inevitably to final cachexia. The affection is differentiated from gout by the lack of restriction to certain points, the multiple involvement of the joints, the chemical composition of the concrements, the microscopic findings and the shadows cast by the Roentgen rays, which differ from the findings in gout. In the case reported the salicylates seemed to benefit.

64. **Etiology of Appendicitis.**—Klemm has become convinced that appendicitis should be regarded as a myeosis of the lymphatic apparatus of the appendix. It does not differ in any respect from myeosis of other lymphatic organs. It may be the result of the action of various bacteria, but the colon bacillus is generally responsible.

65. **Hourglass Stomach.**—Moynihan has had occasion to operate in 23 cases of hourglass stomach. He encountered one case in which cicatricial contraction of the stomach after ulcers had caused its separation into three sacs and another in which there were four sacs. He describes his cases in detail, with the indications for which he operated and his technic. The results were very gratifying, except with the 2 patients who presented evidences of malignant disease.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed page 996.

66 (XXII, No. 5.) Zur Cervix-Frage (the cervix question). L. Aschoff.
67 Zur Anatomie der Intraligamentären Harnblase (bladder). K. Natanson and A. Zinner.
68 Zur Morphologie des Kolostrums und zur Technik seiner Untersuchung. Wiederhake.
69 Ueber tödtliche intraperitoneale Blutungen bei Uterus-Myom (fatal hemorrhages). A. Stein. One case.
70 *Zur plastischen Verwendung des Uterus (Wertheim) bei Operationen grosser Genital-Prolapse. H. Fuchs.
71 *Zur Kenntnis der weiblichen Genital-Tuberkulose. O. Nebesky.
72 Die Eierstockswund-Heilung (healing of wounds in ovaries). G. Di Cristina.
73 Experimenteller Beitrag zur Aetiologie der Ovarial-Embryome und Adenome. G. L. Basso.
74 *Die konservative Behandlung der entzündlichen Adnex-Erkrankungen (inflammatory processes in adnexa). K. Fett.
75 (No. 6.) Ueber gleichzeitige Extra- und Intrauterin-Gravidität. W. Weibel.
76 Ueber 2 Fälle von vorgeschrittener Extrauterin-Gravidität. T. Haagn.
77 *Ueber spontane puerperale Gangrän beider Extremitäten. E. Fraenkel.
78 Fall von Cystoma ovarii multiloculare pseudomucinosum mit breiter Perforation in Blase und Rectum und mit fistulösen Durchbrüchen in Ileum und Flexura sigmoidea. H. Martin.
79 Erfahrungen mit der Morphium-Skopolamin-Narkose bei gynäkologischen Operationen. K. Voigt.
80 (XXIII, No. 1.) *Beziehungen der funktionellen Neurosen, spez. der Hysterie zu den Erkrankungen der weiblichen Genital-Organe. E. Meyer.
81 Ein Kaiserschnitt welcher gemacht wurde, ein Kaiserschnitt der nicht gemacht wurde, und ein Kaiserschnitt welcher hatte gemacht werden sollen (experiences with Cesarean section in a dwarf and others). F. v. Neugebauer.
82 Campaign Against Uterine Cancer.—Der Stand der Bekämpfung des Gebärmutterkrebses. E. Opitz.
83 *Funktioneller Nieren-Diagnostik (of kidneys). F. Kermauner.
84 Statistische und anatomische Ergebnisse bei der Freund-Wertheimsche Radikal-Operation des Uterus-Karzinom. R. Schindler.

70. **Plastic Utilization of Uterus for Extensive Prolapse of the Genitalia.**—Fuchs reports 39 patients operated on by Wertheim's technic, using the uterus to make a new floor for the pelvis, as it were. It proved successful even in cases of old prolapse that had previously recurred, despite all kinds of operative intervention. Twenty-one of the 39 patients have been examined recently, and the results have proved extremely satisfactory, except in one case, in which the prolapse recurred.

71. **Tuberculosis of Female Genitals.**—The case related by Nebesky confirms the possibility of permanent cure of clinically isolated tuberculosis of the female genitals, treated by radical removal of all the organs which appear to be affected.

74. **Conservative Treatment of Adnexia.**—In 38 cases of inflammatory processes in the adnexa, Fett used conservative medical measures only, and in 8 operative measures. From the results observed and those recorded by others he has become an advocate of conservative treatment of inflammatory conditions in the adnexa under all circumstances. In the acute stage they should be treated expectantly, and in the chronic stage with the aid of measures to promote absorption. The treatment may require several months, but with few exceptions full working capacity is regained, the results comparing favorably with the best after-operative intervention. Restitution is so complete that pregnancy occurs normally afterward. In case of impending perforation peritonitis, laparotomy is required, and abdominal removal of the adnexa is also justified by the failure of a systematic course of treatment. Even then the ovaries should be left if sound and functioning. Colpotomy is indicated only in case of extensive suppuration and prolonged fever, requiring incision and drainage. The displacements of the uterus which frequently follow the processes in the adnexa may require correction when the conservative treatment has accomplished its purpose.

77. **Puerperal Gangrene.**—Fraenkel's patient exhibited isolated gangrene of both arms in conjunction with endocarditis.

80. **Relations Between Functional Neuroses and Genital Affections.**—Meyer has noticed that nervous disturbances are rarely encountered in severe affections of the genital organs. On the other hand, gynecologic affections are frequently merely the localization in the genital sphere of some general neurosis. Treatment based on this fact is alone liable to be successful in such cases.

83. **Functional Kidney Tests.**—Kermauner concludes from his study of the subject in the literature and from personal experience that none of the functional tests of the kidney yet presented are accurate. Reliable information can be obtained only by combining palpation, the history of the case, examination of the painful points and of the ureter reflexes with cystoscopy and radiography in case of suspicion of stones. Physical, chemical and microscopic tests should be made, with determination of the freezing point and of the nitrogen, the phloridzin test and chromocystoscopy, determination of the urea, nitrogen, salt and electric conductibility.

Muenchener medizinische Wochenschrift.

86 (LIII, No. 10.) *Water as Enemy of Roentgen Photography.—Das Wasser als Feind der Röntgenaufnahme. F. Lichtenstein.
87 Neuere Reaktionen auf Azetessigsaure (aceto-acetic acid). E. Riegler.
88 Ueber Aktinomykose des Kehlkopfes und des Kopfnickers (of larynx, etc.). R. Hoffmann.

89 *Zur Kenntnis der tuberknlosen Erkrankung des Oesophagus. R. Kümmell.
90 *Test Breakfast or Test Meal.—Probefrühstuck oder Probemittagessen. K. Dörner.
91 *Zur Kenntnis der Tetanie intestinalen Ursprungs (origin). K. Quosig.
92 Typhusbazillus und Bazillus Faecalis alcaligenes. Conradi.
93 Ueber traumatische Pupillenstarre (immovability of pupils). G. Dreyfus.
94 Infant Consultations.—Ueber die Errichtung von Beratungsstellen für mütter von Säuglingen in München. K. Oppenheimer.

86. **Water as Obstacle to Radiography.**—Lichtenstein gives diagrams and relates experiences which suggest that the presence of fluids has a disturbing effect on radiography. Not the composition of kidney stones, but the amount of fluid present in the kidney is the criterion for successful radiograms of kidney stones. The presence of fluid is the reason why radiography of the pregnant uterus is so unsatisfactory. Stones in the biliary passages generally cast stronger shadows than those in the gall-bladder, mainly because they are not surrounded by so much fluid.

89. **Tuberculosis of the Esophagus.**—In Kümmell's case nearly four-fifths of the esophagus was occupied by a tuberculous ulceration. No symptoms had been noted pointing to an affection of the esophagus. The patient was a man of 52, alcoholic, with advanced pulmonary tuberculosis.

90. **Test Breakfast or Test Dinner.**—Dörner gives the comparative findings after the test breakfast and the test dinner, his experience being that only the latter is able to indicate the actual functional capacity of the stomach. The organ may be able to take care of the breakfast and the findings will be approximately normal, when the test dinner shows that it is far from being equal to taking care of the more elaborate meal.

91. **Tetany of Intestinal Origin.**—A neuropathic man of 46 with achylia and normal gastric motility presented evidences of tetany. The impossibility of peptotoxin formation excluded the stomach as the source of the trouble. There was no diarrhea, and consequently the tetany could not be attributed to excessive loss of fluids. The intestinal digestion was much disturbed, and he attributes the tetany to the morbid conditions in the intestines and consequent autointoxication.

Virchow's Archiv, Berlin.

Last indexed page 1505.

95 (CLXXXIV, No. 1.) Ueber den Weg der Tuberkel-Bazillen von der Mund- und Rachen-Höhle zu den Lungen, mit bes. Berücksichtigung der Verhältnisse beim Kinde (route of infection). H. Beitzke (Berlin).
96 Die Athyreosis (disturbances in growth of bones). T. Dieterle Basle).
97 Healing of Cartilage.—Ueber Knorpelheilung nach aseptischen Verletzungen am hyalinen, von Perichondrium uberzogenen, fertigen Knorpel. R. Malatesta (Padua).
98 Ueber lokales und allgemeines Amyloid. Edens.
99 Small-celled Infiltration of the Skin.—Die klein-zellige Infiltration der Haut. E. Gebert.
100 Ueber die Mukokoplakie der Harnblase (Hansemann) (of bladder). S. Minelli (Strassburg).
101 Ueber kavernöse Phlebektasien des Verdauungstraktus (of digestive tract). H. Bennecke (Marburg).

Grèce Médicale, Syra, Greece.

Last indexed, page 1571.

102 VII, Nos. 13-14.) Le paludisme en Grèce. LI Ligue contre le paludisme.
103 (Nos. 15-16.) Cas de disposition particulière des fibres à myeline de la retine. G. F. Cosmettatos.
104 (Nos. 17-22.) *La tuberculose pulmonaire en Grèce. P. J. Rondopoulo.
105 (Nos. 23-24.) Autoclave portatif de campagne (portable autoclave). Macris.
106 (VIII, Nos. 1-2.) Prologie de la fièvre hemoglobinurique bilieuse. S. P. Kanellis.
107 (Nos. 3-6.) *Nouveau traitement de la blennorrhagie chronique. Le Dynamo-Injecteur. G. Filaretopoulo (Athens).
108 Traitement des phlegmons diffus chez l'enfant. Pansement à l'éther sulfurique (ether dressings). J. N. Georgiades.

104. **Tuberculosis in Greece.**—The proportion of deaths due to tuberculosis in Greece is about as 1 to 9 in comparison to the total mortality, according to the figures for the twelve largest towns in the land. Dust is extremely prevalent, but the mild climate and the almost constant sunshine counteract its effects, so that Greece does not suffer from tuberculosis as much as some other countries.

107 **Dynamo Injector for Treatment of Chronic Gonorrhea.**—Filaretopoulo has devised an instrument which, he thinks, is free from the faults of the present technics. It consists of a curved sound dilator in two halves, the outer side of each part rounding and the inner flat, so that the whole, when closed, looks like a simple sound. By turning a thumbscrew in the handle the tips separate to any desired distance, and by turning and reversing the thumbscrew the alternate spreading and closing of the tips enables the interior of the urethra to be energetically massaged at any point desired. One of the branches is made hollow, with four large openings at the tip. He uses an astringent and antiseptic salve with lanolin base for local application. The hollow branch of the injector is filled with the salve from a compressible tube, and it is forced out through the openings in the tip by a piston arrangement. The salve can thus be applied at the exact point needed and massaged into the tissues. The use of this instrument saves much time, all the procedures being done at once and without the least pain. A further advantage is that the topical applications, being in the form of a salve, exert their action much longer than when fluids are used. He has thus cured in two sittings, he states, patients who had been treated in vain for years by other measures. Some of the salve is still evident in the urethra three days after its application. The article is illustrated.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PRACTICAL MEDICINE SERIES, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. By G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, in two volumes. Vol. I on General Medicine, edited by F. Billings, M.S., M.D., Head of Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Vol. II on General Surgery, edited by J. B. Murphy, A.M., M.D., LL.D., Professor of Surgery in Rush Medical College. Cloth. Pp. 369 and 583. Price, Vol. I, $1.25; Vol. II, $2.00. Chicago: The Year-Book Publishers, 1906.

PRACTICE OF GYNECOLOGY, In Original Contributions, by American Authors. Edited by J. Wesley Bovée, M.D., Professor of Gynecology, George Washington University, Washington, D.C. Illustrated with 382 Engravings and 60 full-page Plates. Cloth. Pp. 836. Price, $6.00 net. Philadelphia: Lea Brothers & Co., 1906.

GRUNDRISS der Orthopaedischen Chirurgie. Fuer Praktische Aerzte und Studierende. von Dr. Max David, Specialarzt f. Orthopaedische Chirurgie in Berlin. Mit 184 Abbildungen. Zweite, Wesentlich Vermehrte und Verbesserte Auflage. Paper. Pp. 240. Price, 6 marks. Berlin: Verlag Von S. Karger, 1906.

MANUAL OF DISEASES OF THE EAR, NOSE AND THROAT. By J. J. Kyle, B.S., M.D., Clinical Professor of Otology, Rhinology and Laryngology in the Medical College of Indiana, etc., with 160 illustrations. Flexible leather. Pp. 595. Price, $3.00. Philadelphia: P. Blakiston's Son & Co., 1906.

THE NATURE AND TREATMENT OF CANCER (Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer). By J. A. Shaw-Mackenzie, M.D., Lond. Third Edition, revised and enlarged. Cloth. Pp. 99. Price, 2s. 6d. net. London: Bailliere, Tindall & Co., 1906.

THE MORPHOLOGY OF NORMAL AND PATHOLOGICAL BLOOD. By G. A. Buckmaster, D.M., University College, London, formerly Radcliffe Fellow, Magdalen College, Oxford. Cloth. Pp. 244. Price, $3.00. Philadelphia: P. Blakiston's Son & Co., 1906.

PHARMACOPEIA OF THE EVELINA HOSPITAL FOR SICK CHILDREN, Southwark. Third Edition. Copies may be obtained from the secretary or the dispenser. Cloth. Pp. 62. Price, 60c. Philadelphia: P. Blakiston's Son & Co., 1906.

SIXTY-SEVENTH ANNUAL REPORT OF THE COLUMBUS STATE HOSPITAL to the Governor of the State of Ohio, for the Fiscal Year Ending November 15, 1905. Paper. Pp. 92. Columbus, Ohio: Fred J. Heer, 1906.

TRANSACTIONS OF THE AMERICAN ROENTGEN RAY SOCIETY. Sixth Annual Meeting, Johns Hopkins Hospital, Baltimore, Md., Sept. 28-30, 1905. Cloth. Pp. 224. Pittsburg, Pa.: Press Murdoch, Kerr & Co., 1905.

OFTALMOLOGIA CLINICA. Estadistica de 8,000 Enfermos. Tercera Serie. Con 158 Grabados en el Texto y 35 Planchas. Por El Dr. Enrique Lopez. Paper. Pp. 229. Havana Imprenta Avisador Comercial, 1906.

THE SUBCONSCIOUS. By J. Jastrow, Professor of Psychology in the University of Wisconsin. Cloth. Pp. 549. Price, $2.50 net. Boston and New York: Houghton, Mifflin & Co., 1906.

REPORT OF THE DEPARTMENT OF HEALTH OF THE ISTHMIAN CANAL COMMISSION for the Month of March, 1906. Paper. Pp. 54. Washington: Government Printing Office, 1906.

FERIDAS E RUPTURAS TRAUMATICAS DO PANCREAS. Por Reynaldo Dos Santos. Chirurgiao dos hospitaes civis. Paper. Pp. 45. Lisbon.

SEVENTEENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF FLORIDA, Jacksonville, Florida, March 6, 1906. Paper. Pp. 271.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, JUNE 2, 1906. No. 22.

Original Articles

SOME OF THE RECENT ASPECTS OF QUARANTINE AND ITS RELATION TO PUBLIC HEALTH.*

M. J. ROSENAU, M.D.

Passed Assistant Surgeon and Director Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.

WASHINGTON, D. C.

Quarantine may be likened to jails, penitentiaries, houses of detention and other necessary evils of this world. The very absurdity of the word quarantine, coming from the Italian *quaranta,* meaning 40, is an indication that we are dealing with a condition resulting from an imperfect social fabric.

It does not take a prophet to foresee the time when society will be developed to that state of civilization and the sanitary sciences will have reached that point of excellence when restrictive quarantines will be entirely unnecessary. But the millennium is a long way off and we shall not see the end of quarantine restrictions in our day and generation.

In the Middle Ages, when the Hanseatic League of cities held its commercial supremacy, we learn that Venice detained ships arriving at that port with cases of pestilence aboard, for a period of forty days. While isolation and detention had been practiced to a certain extent prior to that time, this was the first instance of the systematic application of maritime quarantine methods, and they have survived in a modified form to this day. Since then, in addition to maritime quarantines, we have land quarantines, interstate quarantines, municipal quarantines, house quarantines, cattle quarantines and quarantines for revenue only. Some of these, especially municipal and interstate quarantines, have developed to large proportions so that they are now replete with intricate medicolegal problems and have become highly specialized like other branches of the medical sciences.

I shall confine myself to a discussion of some of the problems of maritime quarantine and take the opportunity to express some stray thoughts on the underlying principles governing the federal quarantine service, giving some of the recent developments in quarantine methods, and finally pointing out a few of the lessons to be learned from the late epidemic of yellow fever in New Orleans.

THE FEDERAL QUARANTINE SERVICE.

To those not familiar with the principles underlying the organization and methods used by the Public Health and Marine-Hospital Service in its maritime quarantine work it may be interesting to hear the story, briefly told, of how the government protects its citizens.

The object of maritime quarantine is the protection of a country against foes often more deadly than those of war. It is a coast defense against exotic pestilence. We do not quarantine against tuberculosis, scarlet fever, malaria, typhoid fever and other serious communicable diseases which, like the poor, are always with us. We only guard against the invasion of such strangers as, once introduced, might work havoc in our midst. In view of this fact the federal government recognizes but six quarantinable diseases: Cholera, yellow fever, plague, typhus fever, small pox and leprosy.

Some diseases, for instance relapsing fever, have been stricken from the list of quarantinable diseases and the restrictions against others have been very much lightened in recent years. Epidemics of relapsing fever require the sum total of evil sanitary conditions, including overcrowding, filth, poor and insufficient food, vermin, etc.; these conditions do not exist in a sufficiently high degree even in the slums of our centers of population to favor the spread of this disease. Only last winter victims of relapsing fever were admitted into one of our large seaport cities and treated at one of the general hospitals without any more danger to the city than a case of rheumatism.

Our seaports in the yellow-fever zone could render themselves equally secure against yellow fever and would not then fear to admit cases of that disease, as Havana has done for several years.

Another instance of the lightening of quarantine restrictions is that we now no longer detain the vessel itself on account of infection. After proper measures of disinfection, or the extermination of mosquitoes, rats and other intermediate hosts, have been accomplished, the vessel with its cargo is permitted to dock while the personnel is detained at the quarantine station. The introduction of this practice has saved commerce a certain amount of loss and delay. Restrictive measures regarding typhus fever are no longer so stringent as they formerly were. With the comparative degree of improved sanitation of most of our seaports there is little danger of typhus fever occurring in epidemic form. Therefore, if a vessel in good sanitary condition arrives with a case of typhus fever aboard, and the patient has been isolated and other measures taken to prevent its spread, only the patient is removed, the sick bay purified, and the vessel with all its cargo, crew and passengers permitted to land. With the increase of our knowledge of the causes and methods of transmission of the epidemic diseases, our quarantine methods are not only more precise, but may now be carried out with every assurance of success.

I have called maritime quarantine a coast defense. The likeness is stronger than a mere figure of speech. At one time countries tried to build an impassable barrier against the quarantinable diseases which they feared, but all such systems of quarantine, like the great wall of China, are doomed to failure. The principle underlying the modern system of quarantine consists in

* Read before the Medical and Chirurgical Faculty of Maryland.

fortifying the strategic points along the coast with a complete armament composed of lazarettos, barracks of detention and observation, disinfecting apparatus, wharves and vessels, and laboratories for the detection of suspected disease. In addition to these quarantine fortresses, which are the backbone of our line of defense, our country, having such a long littoral, must also have a flying squadron consisting of a floating disinfecting plant, a traveling laboratory, and trained officers and men to concentrate quickly on any particular point of attack.

The federal government operates several floating disinfecting plants, kept at favorable places, is equipped with two traveling laboratories, and has officers trained to make scientific diagnoses of suspected cases; it also has officers who have had long and valuable experience in practical disinfection and the management of epidemic diseases; all these forces may be concentrated on any given point with little loss of time.

Another principle underlying the quarantine defense at small and remote ports is an inspection service. Many small ports, having little communication with foreign countries, are not visited by quarantinable diseases for years. Manifestly it would be poor policy and exceedingly expensive to maintain at all of these minor ports the cumbersome and complicated equipment necessary at a large and busy port, to meet such infrequent emergencies.

At certain of our ports we concentrate this work at favorable places known as "stations of refuge." These places are usually situated on islands along the highways of ocean trade and serve as detention, disinfection and quarantine stations for a number of coast cities.

THE LIMITATIONS OF DISINFECTANTS.

Disinfection is no longer regarded as the panacea that it formerly was. There can be no doubt that at one time we had an exaggerated notion of the powers and proper sphere of disinfection in sanitary work. I do not mean to belittle the great value of disinfection and disinfectants in preventing the spread of communicable diseases caused by bacteria. We now know that most bacterial parasites causing communicable diseases which occur in epidemic form in man are not very long lived, but usually die spontaneously within a comparatively short time.

We have further learned that infection is probably more often carried by means of mild cases or through the medium of a third person than by means of infected objects. For instance, the diphtheria bacillus may be in the throat of persons enjoying good health. When we learned that many communicable diseases are transmitted from man to man through intermediate hosts, especially insects and domestic animals, we found that ordinary disinfectants were not nearly so valuable as insecticides.

Sulphur dioxid still remains one of the oldest and the most valuable of our disinfecting agents, despite its destructive chemical action. It destroys all forms of life, both vegetable and animal.

Formaldehyd gas is seriously limited in this respect, as it has little, if any, toxic action on insects and higher animals. It is, however, exceedingly poisonous to bacteria; but even in this regard it has further limitations, for it is not effective when used in cold or dry weather. Past Assistant Surgeon T. B. McClintic, who worked in the hygienic laboratory under my direction during the past year on this question in relation to car sanitation, has drawn the conclusion that formaldehyd gas, no matter by what method it is evolved, is useless as a disinfectant, provided the relative humidity in the atmosphere is less than about 65 per cent. and the temperature below 60 F. In other words, in cold or dry weather formaldehyd can not be depended on

SANITATION THE ONLY CURE FOR QUARANTINE RESTRICTIONS.

The necessity for quarantine arises from the lack of sanitation. If all communities, especially seaports, were to place their cities in the best sanitary condition, in accordance with the teachings of modern science, there would be little danger of disease spreading to epidemic proportions and practically no need of quarantine restrictions. Modern sanitation is very expensive. It means thorough drainage, proper disposal of wastes, good paving, pure water, and cities constructed with sufficient breathing spaces between houses, so that all the inhabitants may receive their proper proportion of fresh air and sunshine; it also includes the destruction of mosquitoes, rats and other vermin which help to spread disease, and a proper supervision of the food supply.

This thought, which has been so often and so ably advocated by Surgeon-General Walter Wyman, is the great basic principle which actuates the Public Health and Marine Hospital Service in its sanitary work. In line with this principle the surgeon-general has many times urged on the neighboring Central American republics and other governments, with which our country has intimate commercial relations, to take steps looking to a solution of the problems affecting the health of their coast cities. Prompted by this teaching, one of these countries, Honduras, has recently requested that an officer of the Public Health and Marine-Hospital Service be detailed to take charge of its sanitary measures. Our own cities in the yellow fever zone might well take the lesson to heart by exterminating the *Stegomyia fasciata* and so insure their cities against epidemics of yellow fever.

As an outgrowth of this line of action the government has developed what may be termed a prophylactic quarantine, that is, measures are taken at the ports of departure to prevent ships from becoming infected. Medical officers of the service are stationed at seaports in all parts of the world where danger exists of conveying cholera, plague and yellow fever to the United States through the medium of ocean traffic. The officers at these foreign ports issue the bill of health to the departing vessel, supervise the loading, and the embarkation of passengers and crew, so as to ensure that no disease is taken aboard, either in the cargo, the food, water or among the personnel. When necessary, the ship is detained for disinfection or other measures at the foreign port, to render it safe from a quarantine standpoint. These foreign inspectors relieve ocean travel of many annoying quarantine restrictions and are a potent factor in safeguarding the health of our country. Those who appreciate the important service rendered by these foreign quarantine and immigration inspections hope to insure their continuance through legislative and treaty enactments.

Maritime quarantine, to be effective, must be uniform and centralized, for a chain is only as strong as its weakest link. Viewed broadly, maritime quarantine concerns the federal government in much the same way as does the enforcement of the revenue laws; and, further, it must be regarded as the duty of the federal government to protect the health of its citizens against the introduction of foreign germs, just as it protects us against the invasion

of foreign foes. It is only in the enforcement of maritime and interstate quarantine that the government is legally concerned, and sometimes feels the embarrassment resulting from the divided responsibility, owing to the present imperfect laws. The federal government never can and never will take the place of the state and local health authorities, for municipal and state sanitation are largely local questions. In fact, there is greater usefulness than ever for state boards of health and municipal health officers.

The federal government, through its system of cooperation with state authorities, is the medium by which local sanitary measures throughout the country are coordinated. These meetings between the state and federal sanitary authorities are helpful in encouraging active sanitation and further helpful toward uniformity in the health laws and administration throughout the country.

RECENT YELLOW FEVER WORK AND ITS LESSONS.

That it is possible to exterminate the yellow fever mosquito in a large community in a comparatively short time was satisfactorily demonstrated last summer at New Orleans. The sanitary work in New Orleans was marked with such success because it concentrated almost its entire energies on two points: 1. The screening of the sick. 2. The destruction of mosquitoes.

Those who have been in New Orleans in ordinary times need not be told of the unendurable extent to which the city was pestered with mosquitoes, particularly the *Stegomyia fasciata*. The fight against the mosquito, under the personal direction of Surgeon J. H. White, was so successful in New Orleans that when we arrived there in September, we had the greatest difficulty in finding the *Stegomyia fasciata* at all and it was only after setting many traps in many parts of the city that Passed Assistant Surgeon Goldberger and myself were able to secure enough of them to breed for our laboratory work.

Having come to the subject of yellow fever, I think it will be profitable to review some of the recent advances in the study of this disease which have a bearing on quarantine and sanitary work. No discussion of yellow fever would be complete without the mention of the Army Medical Commission, headed by Surgeon Walter Reed, whose work has helped us so much in the prevention of this disease. The discovery that yellow fever is transmitted in nature only through the bite of the *Stegomyia fasciata* has been the stimulus that has led to further work on this disease by men of science throughout the world.

Several commissions, composed of Drs. Salimbeni, Marchoux and Simond, have been sent from the Pasteur Institute, Paris, to Rio de Janeiro, to study yellow fever; also, a German commission consisting of Drs. Neumann and Otto have made further contributions which have naturally advanced our knowledge of the subject. The Public Health and Marine-Hospital Service had another working party in the field last summer during the latter part of the epidemic at New Orleans. Two questions were investigated: 1. The cause of the disease. 2. The alleged hereditary transmission of the yellow fever parasite in the mosquito. We are considerably handicapped in studying yellow fever clinically because of the many instances of mild and atypical cases. Until the cause of the disease is discovered and a certain means of a diagnosis is at hand, there will be great confusion in symptomatology and diagnosis.

The subject, therefore, has important practical, as well as scientific interest. We spent much of our time in attempting to grow the yellow fever parasite.[1]

ATTEMPTING TO GROW THE YELLOW FEVER PARASITE.

In view of the fact that the infective principle causing yellow fever may pass through the close-grained pores of a Pasteur-Chamberland B filter, it seemed to us hopeless, with the limitations of the present microscope, to expect to see the causative agent of this disease by direct examination of the blood.

Novy's work with trypanosomes, both his success in their artificial cultivation and his filtration experiments, indicating the possibility of an "ultramicroscopic" phase in their developmental cycle, suggested to us the possibility of cultivating by similar methods the yellow fever parasite and thus, perhaps, of developing a stage in its life cycle, which might readily be visible. We attempted, therefore, to grow the parasite of yellow fever in the water of condensation of blood-agar tubes.

The culture tubes were prepared in several different ways; both human blood (non-immune) and rabbit's blood were used. Some tubes were prepared with the whole and some with the defibrinated blood. When the whole blood was used it was quickly added while fresh to melted agar at 42 C., in the proportion of about two parts of blood and one of agar. After mixing, the tubes were slanted and allowed to set. The defibrinated blood was prepared by whipping in the usual way and then added to the melted agar in about the same proportions, as before stated. After standing a short time the blood-agar slants thus prepared, developed from several drops to about 1 c.c. of water of condensation. A drop or two of blood from typical cases of yellow fever taken from the arm vein during the early stages of the disease, was planted into this water of condensation.

Other cultures were prepared with much larger quantities of the yellow fever blood, using the yellow fever blood itself as a part of the culture medium. Two tubes containing about 2 c.c. of melted agar and about 4 c.c. of fresh yellow fever blood, were added as quickly as possible after withdrawal from the vein. Other tubes were similarly prepared with the defibrinated yellow fever blood.

Some of the cultures were kept in the incubator at 37 C. and others at room temperature. Of the latter, some were kept in the dark and others exposed to the light, in order to simulate the conditions, as they appear to occur in the mosquito.

The water of condensation was examined from time to time both in hanging drop and in stained smears. It was found to contain large numbers of bodies of various sizes and shapes, some of them exhibiting curious and exaggerated Brownian motion. All of the particles were interpreted as generation products, mostly from the cellular elements of the blood.

HEREDITARY TRANSMISSION OF THE YELLOW FEVER PARASITE IN THE MOSQUITO.

The question of the hereditary transmission of the yellow fever parasite from the *Stegomyia fasciata* to its progeny is of interest both biologically and practically. Reasoning by analogy, such transmission can not be regarded as impossible, as it is known to occur in some probably closely allied diseases, as through the tick in Texas fever and canine piroplasmosis. Schaudinn has satisfied himself that hereditary transmission of the

1. Rosenau, M. J. and Goldberger, Joseph: "Attempts to Grow the Yellow Fever Parasite. The Hereditary Transmission of the Yellow Fever Parasite in the Mosquito." Report of Working Party No. 3. Bulletin No. 15 Yellow Fever Institute, Public Health and Marine-Hospital Service.

tertian malarial parasite (*Plasmodium vivax*) occurs in *Anopheles*, and recently Dutton and Todd have shown that the spirochete of the tick fever of the Congo is passed from tick to tick through the egg. To the sanitarian the question is of interest in its bearing on the problem of the recrudescence of yellow fever.

The recrudescence of epidemics of yellow fever has heretofore been explained in one of two ways: 1. A *Stegomyia fasciata* that had become directly infected by feeding on a yellow fever patient had survived (as they are experimentally known to be able to do); 2. In the interval between the epidemics the infection had been continued by unrecognized cases and on the recurrence of favorable conditions the disease would reassume epidemic proportions.

From time to time a third explanation has been advanced, namely, the transmission of the infection from the mother mosquito through the eggs to her progeny which, under favorable circumstances, were capable of giving the disease to a susceptible individual, without themselves directly having had access to a yellow fever patient. This explanation has now received the support of an experimental case of yellow fever induced by the sting of a *Stegomyia fasciata* apparently hereditarily infected. The case is reported by Marchoux and Simond in a paper on the hereditary transmission of the yellow fever virus in the *Stegomyia fasciata*. Against this one positive case we obtained negative results in attempted inoculations of 13 non-immunes.

In an endeavor to account for the divergence of our results from those of the French workers, we considered several factors in the problem, failure to comply with any of which might readily be productive of negative results. We believe, however, that our work, so far as we can judge from the details in their paper, closely parallels the work of Marchoux and Simond. Naturally, the first factor which arose for consideration was whether the mothers of the *Stegomyia fasciata* used by us for the inoculation of our non-immunes were infected. Marchoux and Simond state that the mother of the insect whose sting produced the positive case of fever had been made to feed on several (number not stated) of their yellow fever patients, in order to determine a heavy infection. In our work one of our mother mosquitoes had three feedings of yellow fever blood from two severe cases during the early stages of the disease. Two other mother mosquitoes had one feeding of yellow fever blood early in the disease.

That the interval between the infecting feed and oviposition is an important element in the transmission of the infection through the eggs to the progeny, if such transmission ever takes place in yellow fever, must be evident. Marchoux and Simond do not report clearly on this point: They state simply that their mosquito was 20 days old at the time of oviposition and that some time prior to the ovipositing it had been made to sting several yellow fever patients.

Another important factor in the problem, and one to which Marchoux and Simond call attention, is the time needed by the hereditarily infected mosquito to become infective. In their case this was 22 days. In our work the inoculations were carried up to and including the forty-ninth day.

A factor in the problem, which is of prime importance and which must always be reckoned with in estimating the value of negative results, is the susceptibility of the subject, used for the inoculation of the disease. We were careful to select only those who, we were satisfied, never had had the disease.

In view of the negative results recorded by us in our efforts to confirm the positive work of Marchoux and Simond, we feel that additional work will be necessary to settle the question of the hereditary transmission of the parasite of yellow fever in the *Stegomyia fasciata*. Nevertheless, the sanitarian will do well to continue his measure of mosquito destruction after the suppression of an epidemic.

TRUTH IS MIGHTY AND HAS PREVAILED.

In our work on yellow fever at New Orleans last summer it was interesting to note the great difference in the practical work of suppressing this epidemic from similar work in former days. Reed, Carroll and Agramonte had published their epoch-making discovery but five years prior. We know that administration, especially in sanitary matters, lags far behind the sanitary sciences. This conservatism is sometimes proper and usually inevitable. In this instance, therefore, we have no cause for complaint when we review the magnificent and successful work in suppressing the epidemic of yellow fever last summer.

In the few years which have elapsed we have learned to fear fomites no longer. This point was brought home very strongly to me when I noticed that the soiled bedding, towels and personal linen from the yellow fever hospital were daily carried, without any precautions, to an outside laundry. We can well imagine how such a procedure would have been regarded prior to our exact knowledge on this subject.

Another striking instance showing how quickly the public mind has been educated to the true facts concerning the disease came to my attention: In the early part of October yellow fever appeared in virulent form in a small Mississippi town. The mother of a certain family—the first to be stricken—fell ill with the fever and died in five days. The head of the household, an intelligent man, fearing that the disease would take other members of his family and not being able to secure proper nursing and medical attention in the small town in which he resided, came with his six children to New Orleans and went directly to the yellow fever hospital, being convinced, he said, that this well screened hospital, although full of yellow fever patients in all stages of the disease, was the safest place in the epidemic area.

I might cite other instances in New Orleans in which patients were attacked by yellow fever in boarding houses. When the mosquitoes in the house were destroyed and the patient screened or removed, the other boarders did not leave, as they had entire confidence in the fact that, although they had been in contact with a sick boarder, they were in no danger from further spread of the disease in view of the measures taken.

THE RENAISSANCE OF THERAPEUTICS.*

RICHARD C. CABOT, M.D.
BOSTON.

A new start in life, a new lease of life, a new movement—that is what we are witnessing to-day, I think, in the theory and practice of therapeutics. There have been other such new shoots before on the old tree, and doubtless there will be many more. Our time is not the turning point of all the ages. Nevertheless, I think I can bring before you a group of phenomena which, taken together, constitute impressive evidence that we have received a new impetus along the old road.

* Read by invitation before the Norfolk Medical Society, Norfolk, Va., April 17, 1906.

Surgery was the last great wave of new life in therapeutics, for of course we must recognize surgery as belonging essentially among the resources of modern therapeutics. Despite its brilliant and most beneficent successes, I think we Americans are somewhat prone to exaggerate the service which surgical therapeutics is capable of performing. Certainly not more than one-tenth of the sick people in the world are capable of being benefited by surgery. The other nine-tenths must, for the present, and I believe also for the future, be helped, if at all, by other methods of cure.

Ten years ago surgery was triumphantly invading the territory hitherto supposed to belong to other types of therapeutics. I believe that to-day the limit of that advance has been nearly reached. There are even signs of retreat. Surgeons are less anxious than formerly to operate on the brain, on the kidney of Bright's disease, and on bleeding ulcers of the stomach, and if our profession advances in honesty as fast as it has in acumen we shall, all of us, live to see fewer operations on the uterus and its appendages.

The hygienic treatment of osseous and glandular tuberculosis and the treatment of tuberculous joints by Bier's method of passive hyperemia, are limiting the applications of surgery on one side as orthopedic apparatus have long since limited them on another. I doubt whether tuberculosis will be operated on as much ten years hence as it is to-day. Cancer of the stomach on the other hand will be operated on far oftener and we hope earlier, thus balancing up the account and leaving surgery on the firm ground of its well-established usefulness, neither advancing nor retreating.

As surgery settles into its place, we see rising a new wave of therapeutic activity along other lines. I will mention first some of the most obvious of its manifestations. Two important bodies of physicians, each body national in its scope, will meet within the next two months, the Association of American Physicians at Washington and the American Medical Association at Boston. Each of these assemblies plans a symposium on therapeutics, and in each such a symposium is a decided novelty. Indeed, I believe that it is the first extended discussion of therapeutics ever entered on by the Association of American Physicians in the whole twenty years of its organized existence.

This state of things would be very puzzling and not a little shocking to the laity, who are not used to the fact that a large part of the labors of the modern physician are and ought to be spent on diagnosis. But there are plenty of parallels in other fields. The statesman and the social worker are in the same position. Without accurate diagnosis of the evil confronting them it is as dangerous for them as it is for us physicians to attempt remedial action.

We have reason to defend, then, the great emphasis placed on diagnosis by the honest and competent medical man as it is by the honest and competent sociologist or legislator. The public always wants a quick remedy and is impatient of prolonged and careful investigation. But it is always the business of the wise public servant to keep the public waiting for a remedy until he has done his best to find out what is the matter.

While we rightly defend the insistence on accurate diagnosis which characterizes all the most competent physicians of our time, we ought not to be blind to the fact that it is possible for us to get so much interested in diagnosis (that necessary preparation for good treatment) that we use up our best energy before we get round to the knotty problems of therapeutics. When the hospital physician has carefully and skilfully diagnosed the new cases in his clinic he is apt to go home to his luncheon and leave his externe to treat them. This habit exemplifies, I think, a deep and widespread tendency among the physicians of our time. Like the man who went back so far for the run preparatory to jumping a brook that he forgot to jump it at all, we sometimes expend a wealth of diagnostic energy altogether out of proportion to our therapeutic attempts.

We used to diagnose with admirable accuracy the precise extent and degree of the tuberculous process in a patient's lungs, quote sardonically the saying that "the treatment of consumption is opium and lies," and proceed accordingly and with great swiftness to the close of the case. We used to fall back on nihilistic epigrams about the self-limitation of disease, the omnipotence of Nature, and the powerlessness of man. It was in this spirit that a wise, conscientious, very successful physician said to me twenty years ago: "What! You're going to study medicine? Oh, don't, or if you do, don't practice it. The study of it, the science of it, is heaven, but the practice of it is hell."

Now in contrast with this we are beginning to see a new trend in therapeutics to-day. That trend shows itself first of all in what I call:

I. THE AGGRESSIVE SPIRIT IN THERAPEUTICS.

The term "aggressive treatment" well characterizes the new method which we have watched Dr. Hawes[1] carrying into effect at the Massachusetts General Hospital. It has been a revelation to me. In the past we have offered the hospital cases of tuberculosis our advice on printed slips, supplemented by a few minutes rather perfunctory talk, and by various prescriptions. If the patients were discouraged at the program we offered them (rest in the open air and forced feeding), and drifted away through the hands of the quack to their deathbeds, we let them go and turned to the next patient.

The new method is to reinvigorate the patient's courage: (a) by long, patient and repeated explanations; (b) by taking (and letting him see that you take) a personal interest in his cure; (c) by the class method whereby one discouraged patient gets hope by hearing and seeing the success of the treatment in other cases; (d) by taking up and helping him to solve some of the practical objections to carrying out the cure which are likely to arise in his mind.

"How can I sleep out doors?"

"Your roof, your back yard, your piazza top, your balcony."

"How shall I keep from freezing?"

"We will show you how to dress and to cover your head on cold nights."

"But how can I leave my work and find money to buy a tent and a steamer-chair, eggs, milk, olive oil and all that you say I need?"

"We will try to interest your lodge, your church, your mutual benefit society, and if all these fail, we will lend you the money without interest."

The old way was to say: "Well, if people will be foolish, what can we do? We can not undertake their education. If they will come here in the proper spirit and do what we tell them we will try to help them, but if they don't want to get well we are helpless." The new way is to undertake their education, to take them into our confidence and show them what we are trying to do, to

1. Hawes, John B.: "The Early Diagnosis and the Aggressive Treatment of Pulmonary Tuberculosis in an Out-Patient Clinic," Boston Med. and Surg. Jour., April 5, 1906.

explain how and why air and food and not drugs are what they need, and to demonstrate to them by ocular evidence—photographs, models—the means of carrying out the treatment and the result of it: cured patients.

Further, an essential of the type of therapeutics which I am now discussing is a patient attention to "fussy" details, which not many good diagnosticians care for. This supervision of details is best carried out in this as in all fields of therapeutics by a nurse. Most women are far better at such things than most men, and the visiting nurse is coming to be as essential a part, I believe, of the therapeutics of this as of many other types of disease.

The results of this aggressive type of treatment are remarkable. In the cold, damp, changeable climate of Boston we are now curing not merely the ideal patients, who have an incipient lesion, good courage and backbone, a country house and real intelligence, but some of the stupid, discouraged, slum-worn cases that we used to abandon as (under the circumstances) hopeless.

Let me recapitulate the essentials of what I have called the aggressive treatment of any disease:

1. We take the patient into our confidence, as ex-President Cleveland[2] has recently begged all physicians to do.

2. We tell him the truth, explain his malady and the means of its cure.

3. We attempt to meet the mental side of the problem by appropriate mental treatment.

4. We try to meet the material and economic side of the case by calling on the resources of his relations, friends and neighbors and by contriving in his home such makeshifts as ingenuity can suggest.

5. We pay patient and long-continued attention to the details of his treatment, the amount and character of his food, his sleep, his hours outdoors, his clothing, his temperature, his weight, as well as to the signs of his chest. In this work we rely on the assistance of women, trained nurses or volunteers, as it is essential that we should.

As another example of what I have called the aggressive spirit in modern therapeutics, let me remind you of the methods of inspecting the health of school children recently brought to a high state of perfection in New York City and now springing up in Philadelphia, Boston and other cities.

The old method was to have the school physician call at the school and examine any children who had complained to their teacher of feeling sick. The physician's attitude was characteristically passive. He would see whoever came to him with complaints. If the disease were contagious he would send the child home and demand isolation; if the case was non-contagious he would recommend the child's family to do something about it, sending the child home with a printed notice which the parents could not read or understand and which, therefore, passed unheeded. The new method is to make a general physical examination of every child in the school at least once a year, whether it complains or not, and if, as is usually the case, a large proportion of the children are partially deaf or partially blind (owing to adenoids or refractive errors), the authorities do not rest content with good advice to the parents, advice couched in such terms and delivered at such long range that it is 1,000 to 1 it will have no effect. Instead of this they come to close terms with the actual details of their problem in the way which experience shows to be the best and surest, namely, through a nurse. A nurse takes the child home, explains the matter in patient detail to the indifferent or stupid parents and finally succeeds in almost every case in getting something done.

In many cases the nurse does it herself. In New York the nurses now treat and cure many cases of skin disease which, under parental neglect or the rare and hasty ministrations of the family physician, used formerly to hang on and deprive the child of its schooling for weeks and weeks. If she does not actually treat the cases she makes treatment possible by taking the child to a hospital for proper care.

In one school district in Boston, previously "inspected" and found healthy by the school physician, the school nurse found within three weeks 27 cases of adenoids causing deafness, 51 cases of defective vision, 7 running ears, 2 cases of scabies and so on. But it is on the treatment, not the diagnosis, of these cases that I wish to insist. That treatment is characterized by the same features to which I called attention in our tuberculosis work:

1. By open-and-above-board explanation of the disease to the persons concerned—this time the parents.

2. By attending to the mental, material and economic aspects of the problem.

3. By paying especial attention to the details of the case through a nurse.

Does all that I have described constitute any addition to the science of therapeutics? No, not to the science, but to its effectiveness in its application. The new life in therapeutics appears not so much in what the man of science conceives as in the benefit received by the patient.

II. THE PART PLAYED BY THE PUBLIC.

The increasing and intelligent interest taken by the public in the treatment of disease is the next aspect of the present therapeutic renaissance to which I invite your attention.

The great and beneficent activity against tuberculosis which has recently sprung up all over the country would have been impossible but for a wholly new attitude on the part of the public. The lay public is now doing fully as much as the physicians in this matter. The tuberculosis exhibits, the new hospitals for phthisis, the laws against spitting (and they are beginning to be enforced), the free examination of sputa and free disinfection of homes are made possible only by the new interest and by the consequent liberality and co-operation of the public. The lay public must pay for these things and it must co-operate to make them effective; not infrequently it goes further and itself initiates the reform. I can never forget the case of an intelligent New Hampshire lawyer who, after coming dangerously near to death from consumption (owing to the lack of proper hygienic treatment from his physicians), cured himself of the disease by following the treatment outlined in an account of the first tuberculosis exhibit at Baltimore, printed in the *Review of Reviews*. The interest of the laity in that exhibit and the evidences of that interest shown in its publication as news in the *Review of Reviews* was the means of bringing to this patient the cure which had not been put into his hands or suggested to him by any of the three physicians whom he had consulted.

What are these tuberculosis exhibits which, first starting in Baltimore, have now been successfully repeated in New York, Philadelphia, Boston, Chicago and other cities? They are simply a piece of *medical education offered free to the public*. They have some of the

2. Cleveland, Grover C.: Address at the 100th Anniversary of the New York Medical Association, Albany, Jan. 31, 1906.

features that I have mentioned as characteristic of the therapeutic renaissance of our day: (*a*) Taking the public into our confidence and appealing directly to its understanding in order that it may actively co-operate in the treatment instead of blindly following directions; (*b*) giving full attention to the details of the application of our therapeutic principles, so that they may be as effective as possible.

That we shall limit this medical education of the public to the single subject of tuberculosis I do not for a moment believe. About malaria, typhoid, yellow fever and other diseases the public must be given the fullest information that we can make them take if we are to fight these diseases successfully.

By slight, hardly noticeable steps, we have arrived at a standpoint commanding a prospect that would have astonished our fathers. We are teaching the public medicine as fast and as far as we can. The fear of alarming them, of leading them to brood over imaginary ills and to attempt recklessly and disastrously to doctor themselves —all these fears prove groundless. Why? Because the public has already drank as deep as it can of the ills which we are now so fearful lest they taste.

The public is already as groundlessly and nervously alarmed about disease as they can be made by the skill of advertisements intended to produce just this effect. So long as our newspapers are crammed with such statements as that pain in the back or frequent micturition means kidney disease, that headache means brain disease, that pimples mean blood poisoning and that varicocele means lost manhood, so long, I say, as these malicious lies constitute the whole stock of information about health and disease received by the public, we need not fear that by spreading a little verifiable truth about disease and its cure we shall poison the public mind.

Equally groundless is the belief that by teaching the public the principles of therapeutics we shall lead them to try to do without the guidance of a physician. For with that evil also they are already tainted past all hope of escape. The $75,000,000 annually spent on "patent medicines" testifies to the truth of what I say. The public will have some ideas about health and disease anyway, and the less we do to spread true ideas the more absolute will be the sway of the false and pernicious legends which are now foisted on them. The people will doctor themselves anyway, many of them, and the blacker their ignorance of health and disease the more they will do it and the worse will be the result.

Professor Councilman, of the Harvard Medical School, said to me a few weeks ago: "The first business of a medical teacher is to teach the public—if we want to get rid of disease; his duty to the physicians and to the medical students is less vital, less immediate if the health of the community is what we seek." This is radical doctrine, but I believe it is the application of this doctrine that is doing most to make therapeutics really effective to-day.

III. THE INCREASING PREVALENCE OF PHYSICAL THERAPEUTICS.

(a) Our hospitals are being rapidly remodeled in recognition of the fact that fresh air is a curative agent, not only for incipient tuberculosis, but in most ailments. Northrup's fresh-air cure for pneumonia will be followed, I venture to prophesy, by a like treatment for typhoid, septic wounds, erysipelas and the acute exanthamata.* I recently heard of an inflammatory eye affection in the child of a brother physician which was advancing with alarming rapidity despite all the measures used to combat it, until, as a last resort, the expedient was tried of putting the child's crib in a bay window surrounded by wide-open windows. An immediate and striking change for the better was noticed within twenty-four hours, and in the course of a few days the danger was over.

Here is, I believe, a new and most hopeful advance in therapeutics. In increasing numbers our surgical cases are being put out of doors, bed and all, very soon after the operation; hospitals are building cheap, open shacks in the country and transferring their patients there for convalescence as soon as possible. The therapeutic effectiveness of the hospital is thus increased, not only by the greater brevity and security of convalescence, but by the increase in the number of patients who can thus be admitted and treated in one set of beds within a given week or month. The beds are emptied so rapidly into the country convalescent home that they are ready for new patients much sooner than formerly.

(b) As a second example of the growth and prevalence of physical therapeutics, the proper use of air, water, food, massage, climate, heat, cold, pressure and the like, I mention the fact that the largest and most recent work on therapeutics known to me, Cohen's twelve-volume book, is devoted exclusively to physical and psychical therapeutics.

Do our patients take kindly to remedial means of this type? Do they actually prove effective? Can we secure the use of open windows in pneumonia, frequent baths in typhoid, of forced feeding in phthisis, of heat and local congestion in joint troubles? Yes, whenever we fulfill the second condition of the modern type of aggressive therapeutics, viz., become ourselves masters of the details of the treatment which we recommend or else turn it over to some one who is usually a nurse.

There is no use disguising from ourselves the fact that on the continent of Europe the wave of improvement in therapeutics, through the effective application of physical agents, has risen much higher than in this country. When we advise a patient to carry out at home the Nauheim treatment of heart disease, the passive hyperemic treatment of joint disease, the dietetic treatment of tuberculosis, we not infrequently lack that intimate and familiar knowledge of the finer details of the treatment, details on which its effectiveness largely depends. Furthermore, we are likely, I think, to continue, many of us, in the same ignorance of such details because we do not like them. *They bore us.* We had rather turn them over to some one else who is interested in them, but as yet we do not always do so.

IV. PSYCHIC TREATMENT.

In what I earlier said of the aggressive treatment of tuberculosis I intimated that one of the factors in the increased effectiveness of the treatment was a realization of the psychic aspects of disease.

This increased awareness on our part of the psychic factors in all disease, organic as well as functional, is one of the most obvious features of the rebirth of therapeutics. A name is a wonderful thing. When we use words of Latin derivation and speak of "mind cure" or "mental healing" we are thought to be speaking of something very irregular and unorthodox, something that has crept on us like other forms of superstition and quackery, something to be repressed by the strong arm of the law whenever that assistance is available. But shift your wording, use a phrase of Greek derivation, "psychic

* Since this was written I have heard from Dr. Walter B. James, of New York, that he has already carried out a good deal of this treatment at the Presbyterian Hospital.

therapeutics," and straightway you are speaking of a legitimate field of medicine! I regard the publication and dissemination (in translation) of Professor Dubois' remarkable work on psychic therapeutics as marking an important epoch in medical history. Here we have for the first time scientific mind cure. Mind cure, first the stock in trade of charlatans, then of devoted but irrational women, has now begun to take its place as an important and, in many diseases, a central branch of therapeutics. Of course we have all of us used mind cure in our practice for years, but not in the systematic and thorough way in which the Swiss neurologist, Dubois, outlines and practices it.

Mind cure with Dubois is not hypnotism, a practice which is, I believe, being very generally abandoned the world over; it is not Christian science, with its perishable freight of overripe theology. *It is essentially the education of the patient.* Like all the best modern therapeutics, it seeks and utilizes to the full the cooperation of the patient himself. Everything is explained to him, no lies are told him. The potent influence of auto-suggestion, for good or for evil, is made clear to him. I recommend very earnestly the perusal of this book. The chapters on the psychic treatment of nervous diseases of the heart, the stomach and intestine, the brain, the sexual organs and the muscles exhibit a combination of powers rarely united hitherto in one author. He is scientific and thoroughly up to date in the details of physical and chemical diagnosis; he has with this the ingenuity and the intimate knowledge of human nature, its foibles, its failings and the sources of its power—a knowledge not often possessed by one so skilled in diagnosis. Besides this he has a big heart, a large charity and a confident optimism—the cause and the result of his abundantly successful career. The discipline and method of science, the art and skill in personal influence, ordinarily used only by the quack and for his base purposes, and the enthusiasm of a lover of mankind—these are qualities which Dubois unites in a remarkable and, so far as I know, unique way. His book is as interesting as a novel, full of instructive anecdotes and personal experiences, yet always systematic and never prolix. I have put it straight into the hands of several patients with good results to all. That nervous diseases are mental diseases, to be cured, if at all, by mental means, is the keynote of his work, and the mental means used are educational throughout. In this and in the recognition throughout of the absolute necessity of recognizing and, if possible, ameliorating the circumstances of the patient, domestic and economic, Dubois well typifies one phase of the rebirth of therapeutics.

V. THE PLACE OF SOCIOLOGY IN THERAPEUTICS.

It is not accidental that we witness in the same year the publication of Dubois' book with its reinstatement of psychic treatment for the psychic element present in all disease, and the establishment at the Massachusetts General Hospital of sociologic work among its patients as a necessary part of thorough medical work. This marks the recognition of the fact that you can not treat a patient without knowing the circumstances, industrial, social, domestic, racial, in which his malady developed, and that you can adequately treat his malady if you recognize its human setting, the condition under which it grew up. A patient comes to me complaining of headache and general weakness. Physical examination is negative, his eyes are sound, he has no fever, but further inquiry shows that he has been lying awake night after night. Pushing the inquiries yet further, we find that it is worry that keeps him awake. To remove the cause of the disease being the first maxim in therapeutics, we are bound to find, if we can, what the cause of the worry is. This eludes us and we refer him for further sociologic investigation to another room, which the hospital has permitted me to organize and to put in charge of two expert and devoted women, for whose whole time we pay. This investigation reveals the fact that his income has of late been slightly less than his expenses and that, in spite of his best efforts, he can not as yet make the two ends meet. His insomnia and the resulting debility date from the time that this anxiety has been weighing him down; poverty is obviously the cause of his symptoms.

I believe it is coming to be recognized as a legitimate and indeed an essential part of therapeutics *to seek for the relief of any cause that is producing disease, no matter how far afield we have to go to reach that cause.* To be thorough is the first of our medical ideals. To treat symptoms without doing our level best to find and remove their cause is to be criminally negligent. The search for this may carry us far beyond what are ordinarily conceived to be the boundaries of medicine. We may have to investigate family affairs, industrial conditions, love affairs, school and college problems, all far enough from the practice of physical diagnosis and drug therapy. But how often this has happened before in the history of medicine! When the neurologist had to learn the laws and workings of electricity and the general practitioner had to become familiar with the use of the microscope they had to advance far beyond the boundaries of medicine, and I doubt whether in the beginning they realized the necessity. One after another of the sister sciences we medical men have had to invade and to some extent to master in order to make use of them in our work.

To chemistry, organic and inorganic, we now have to add some smattering of physical chemistry. To pathology we had to add bacteriology. The science of statistics and the knowledge of the diseases of animals are fields which we have found it impossible to keep out of. Now we have begun to annex psychology and sociology. *The necessity is the same that forced us to take up physics and chemistry—their laws are inextricably interwoven with the phenomena of disease.* To understand and to treat our patients we have to deal with all the causes that go to produce their maladies, so far as we can reach these causes. The recognition of social and psychical factors as causes of disease and the measurably successful effort to reach and to modify these causes is one of the most striking marks of the present rebirth of therapeutics.

VI. THE PLACE OF WOMEN'S WORK IN THERAPEUTICS.

No one can fail to be impressed if he observes the steady increase in the amount of therapeutics now recognized to be best carried out by women. It has long been true that in the division of labor between doctor and nurse the doctor has made the diagnosis and prescribed the treatment, the nurse or the house-mother has carried out the treatment. It has also been long recognized that male nurses are seldom a success. There is in women a strong natural taste and aptitude for the very work of detailed therapeutics which we call nursing, an aptitude very conspicuous by its absence in most men. All this is familiar and trite.

Within ten years we have witnessed a very interesting development in the functions of the nurse. We have now not only the nurses trained for massage and for physical therapeutics of other physical types, but the Nauheim bath nurses, the tuberculosis nurses, the school nurses,

the nurse who teaches and directs infant-feeding. As fast as any branch of physical therapeutics is worked out to any degree of perfection we find it an economy of time and labor to hand it over to those naturally fitted to carry out its details with the patience, tact and deftness that come from natural interest and aptitude.

In the newer psychic and sociologic fields which medicine has begun to invade I have no doubt that women will find a large field of usefulness. Social work and psychic therapy as they are practiced independent of medicine are now overwhelmingly in the hands of women, and I see no reason for shifting these forms of therapeutics into other hands when they come to be more fully recognized and assimilated by medical practice. The effective application of all therapeutics (if you except surgery) is women's work.

VII. ACCOMPANYING DEATHS.

Every birth involves death. The success of the new brings always the rejection of that which once was new, but which now has outlived its usefulness.

The changes which I have described mark the beginning of the end of many evils. I mention two: (*a*) The false mystery that has often encompassed the doctor; (*b*) the conception of drugs as the *alpha* and *omega* of therapeutics. Drugs will always hold an important place in medicine, but they will never hold the unquestioned sway which they commanded before the rise of physical therapeutics, of the aggressive public campaigns now being waged against disease, of psychic therapeutics and the full utilization of women. Drug therapeutics in cases in which drugs do no good represent either mental fatigue or mental myopia on the part of the physician: sometimes mental fatigue because the easiest thing that one can do for a patient when tired is to write a prescription; sometimes mental myopia which prevents the physician from seeing that the habit of giving placebos and of prescribing a medicine for every symptom leads straight to the "patent-medicine" habit.

Why do people take "patent medicines" and expect us to give them a drug for every symptom? They were not born with a desire for nauseous mixtures. They acquired it under instruction, ultimately our instruction. From the patient's point of view the net result of the doctor's expensive visits is too often a row of medicine bottles on the shelf. The thrifty patient thereupon thinks he sees a way to get the net result of the doctor's efforts without so much expense. Why not save the middle man, he says to himself, and get the goods direct? So arises the habit of going to apothecaries or to the "patent-medicine" vendors for a cure. When we stop giving placebos, cease acting as middle men for drugmakers and admit to their rightful place the non-medicinal branches of therapeutics we shall deal a powerful blow at the "patent-medicine" evil.

SUMMARY AND CONCLUSIONS.

1. Therapeutics has become, within the past few years, very noticeably more effective.

2. This increased effectiveness is the result of (*a*) the aggressive spirit as exemplified by the work of the New York Board of Health in school hygiene and school inspection and by the tuberculosis work now being carried on in Boston; (*b*) the greater part now being taken by the laity in medicinal work, both by intelligent co-operation and by financial support; (*c*) our greater acquaintance with physical therapeutics, especially with the details on which their successful application depends; (*d*) the rise of scientific mind cure and of social work, marking a recognition of the psychical and of the social elements in all disease; (*e*) a wider utilization of the unique talents of women in the field of therapeutics.

3. With the rise of the type of therapeutics here described we are now witnessing a limitation of the sphere both of surgical therapeutics and of drug therapeutics. The latter limitation will do much to undermine the superstitions on which the "patent-medicine" habit rests.

THE CAUSE OF THE HEART BEAT.*

W. H. HOWELL, M.D., PH.D.

Professor of Physiology and Dean of the Medical Faculty, Johns Hopkins University.

BALTIMORE.

HISTORICAL REVIEW.

The Seventeenth Century: Harvey and Willis.—It is known to all students of the history of medicine that what may be designated in general as the modern point of view regarding the cause of the heart beat dates from the work of William Harvey. Before his time physicians thought along the lines laid down by the ancient masters, in that they conceived the expansion of the heart in diastole to be an active, or rather the active phenomenon of the heart beat. This expansion was attributed to the innate or implanted heat, to the vital spirits, to the pulsatile force, etc. That the diastole of the heart is an active rather than a passive expansion has been held in a sense by many prominent physiologists, even in the nineteenth century. Magendie, for example, states that at first he entertained this belief. Nevertheless it remains true that Harvey's experiments and observations demonstrated that the pulse of the heart and the arteries is due to a contraction of the musculature of the heart during systole, whereby blood is driven forcibly into the arteries. "The motion of the heart consists in a certain universal tension, both contraction in the line of its fibers and constriction in every sense."[1] This conception of the heart as a muscular force pump, driving out its contents during its active contraction, instead of drawing blood and pneuma into itself by a spontaneous dilatation was, as Dalton says, the first important step in the development of the doctrine of the circulation. Certainly as regards the nature of the heart beat it makes the great dividing line between ancient and modern speculations.

We may regard Harvey also as the founder of the myogenic theory of the heart beat. For although Galen taught that the pulsations of the heart are dependent on an inherent force, which acts through the contractions of the peculiar tissue composing the heart, yet his conceptions of the nature of the heart beat were so different from ours that his ideas are scarcely applicable to the problem as it presents itself to us. Harvey interpreted the systole and the diastole as a contraction and relaxation respectively of the musculature, and, although he did not speculate as to the cause or nature of the contraction, he seems to have considered it an inherent property of the heart muscle itself. Later writers attempted a further analysis of the phenomenon, and in one form or another hypotheses arose, which attributed the initial cause of the heart beat to the activity of the nervous system. Willis[2] taught that the nerves supplying the heart, stomach, intestines, etc.,

* Lecture in the Harvey Society Course, delivered at the New York Academy of Medicine, March 17, 1906.

1. Harvey: "The Motion of the Heart and Blood in Animals," Willis' translation, revised and edited by Alexander Bowie, London, 1889.

2. Willis, Thomas: "Opera Omnia," Amsterdam, 1682. (Budge.)

arise from the cerebellum, and that, therefore, this organ engenders the animal spirits through which the involuntary movements of the heart are effected. This view found many advocates, but it disappeared in the course of time, after it was shown that the nerves in question do not originate in the medulla, and that so far as the heart is concerned, the beats continue even when the organ is excised. Borelli[3] devised an ingenious hypothesis by means of which he reconciled the last mentioned fact with the view of a nervous control of the heart beat. He assumed that the contractions of the heart depend on an influence derived through the nerves. The liquid, succus spirituosus, conveyed by the nerves, escapes slowly into the heart and sets up there an ebullition, which is the immediate cause of the contraction, or according to his view, the expansion of systole. Since in the excised heart some of this liquid is still contained in the stumps of the adherent nerve fibers, it is evident that the pulsations of the organ may continue for a time after removal from the body.

The Eighteenth Century.—Evidently the century following Harvey's immortal discovery did not add anything of material importance to our understanding of the cause of the heart beat. But the tendency manifested during this period to attribute the initiation of this phenomenon to some direct influence of the nervous system was of value indirectly, in that it led to continual discussion and to some experimental work. Haller devoted much attention to the problem and he succeeded apparently in disproving the neurogenic views in the form in which they had been proposed at that time. In place of them he formulated a clear-cut myogenic hypothesis which served to mark the beginning of a new discussion lasting until the present day. He insisted on the fundamental facts that the heart continues to beat after section of the nerves going to it and even when "torn out of the breast." The musculature of the heart, he says, possesses an inherent irritability or power of contraction, which is independent of the influence of the extrinsic nerves; a view, which to his mind, was demonstrated by the fact that a quiescent heart may be excited to movement by "heat, vapor, cold, poison, current of air, watery liquids, wax, blood, or an electric spark."[4] According to his theory, therefore, the cause of the heart beat lies in the inherent irritability of its musculature, and under normal conditions this property is aroused to action by the stimulating influence of the blood as it flows into the ventricles from the veins and auricles. "By this blood copious, warm and heavy, the sensible flesh of the heart is irritated and excited to contraction." For a time Haller's views met with general acceptance, but some of his contemporaries remained unconvinced. Senac,[5] for example, while admitting that the heart is essentially independent of the central nervous system and is aroused to action by the stimulating effect of the blood, conceived that this stimulus acts on the nerves in the heart, rather than on the musculature directly.

The Nineteenth Century.—About the commencement of the nineteenth century physiology began to assume definitely the characteristics of an experimental science. The greatest masters had, indeed, always made use of experiments in their inquiries, but their disciples, on the contrary, were more keen in the matter of argument and exposition than in devising new investigations. The dawn of a new day for our science was slowly breaking at the close of the eighteenth century. Henceforward, experimental work became more widespread and physiologists adopted promptly all the available methods and appliances that were developing in the sister sciences of chemistry and physics. So far as our subject is concerned, one of the first evidences of the awakening of this experimental spirit is to be found in the numerous attempts to determine directly, whether or not the beat of the heart is influenced by the cardiac nerves. These nerves were stimulated or severed and the effects on the heart beat were observed. Senac, Bichat, Fontana, Treviranus and others reported negative results from the stimulation of the cardiac nerves, while von Humboldt, Burdach, and later Longet and Valentin stated that an increase in the heart beat was obtained.

Many of us may wonder why these capable observers failed to discover the inhibitory action of the vagus nerve on the heart beat, that phenomenon which we now obtain with such ease and certainty that it constitutes one of our usual and always successful class demonstrations. The explanation is, I believe, very evident. These men possessed only crude and inefficient methods of stimulation, such as mechanical compression or section, the action of chemical agents, the electric spark of the Leyden jar or of the statical machine, or the continuous current of the voltaic pile. If we were compelled to resort to the same appliances now it would be difficult or impossible for us to demonstrate with certainty such an effect as the inhibition of the heart by stimulation of the vagus nerve.

In this, as in many other respects, experimental investigations in physiology were immensely aided by the discovery of the induction current, and the construction of instruments capable of giving a rapid series of induction shocks. Magnetic induction currents were first obtained by Faraday, in 1832, and shortly afterward he succeeded in developing similar effects from the current of the galvanic battery, that is, in producing what he called voltaic induction. Both of these discoveries were quickly applied to the uses of physiology. With the aid of a magneto-electric rotator, the brothers Weber,[6] in 1845 and Budge,[7] perhaps independently, in 1846, succeeded in demonstrating the inhibitory action of the vagus nerve on the heart. One of the three talented Weber brothers, Wilhelm Weber, was a distinguished physicist, and it is stated that in 1838 he devised a form of magnetic rotator which was capable of giving a series of induction shocks. Possibly it was through his influence that his brothers, Ernst Heinrich and Eduard Friederich were led to use this apparatus in their investigations on the vagus nerve.[8] This fundamental discovery not only opened a new field to physiologic thought and investigation, but it also disposed finally of the erroneous view that the vagus nerve serves as a motor channel through which the central nervous system controls and originates the beat of the heart.

The general view that the beat of the heart is directly dependent on the central nervous system had meanwhile taken another form. On the basis of excellent experimental work Legallois[9] concluded that destruction of the spinal cord is followed by a failure in the

3. Borelli: "De Motu Animalium," 1743.

4. Haller: "Elementa Physiologiæ Corporis Humani," vol. I, 1757; also First Lines of Physiology. (Cullen.)

5. Senac: "Traité de la Structure du Cœur," etc., 1774. (Budge.)

6. Weber: Wagner's Handwörterbuch d. Physiol., vol. III, No. 2, p. 31. See also Volkmann, *ibid.*

7. Budge: Müller's Archiv., 1846, p. 295.

8. According to Schiff, the credit of first observing that stimulation of the vagus nerve arrests the heart-beat belongs to Galvani. I have not been able to verify the reference.

9. Legallois: "Expériences sur le principe de la vie," 1812.

power of the heart to maintain its contractions; and, indeed, in animals not too young, this result was obtained when any given region of the cord, cervical, dorsal or lumbar, was alone destroyed. We know now that such operations may be performed, with the aid of our better technic, without causing the death of the animal, and it is probable that the fatal results obtained by Legallois were due directly to vasomotor paralysis. He was convinced that his experiments proved that the stimulus or principle which maintains the beat of the heart is derived from the spinal cord in all of its parts, and is conveyed to the heart through the branches of the sympathetic system.

Legallois's experiments and conclusions were passed on and endorsed by a special commission, consisting of von Humboldt, Hallé and Percy, appointed by the French Academy; but the dictum of a commission, fortunately, is not accepted as final in science. The work of Philip and of Clift in England; of Flourens and Brachet, in France and of Bidder, in Germany, soon made Legallois's conclusions doubtful, or altogether improbable.

Throughout this period, during which efforts were made to show that the heart beat is controlled directly from the central nervous system, most physiologists were saved from the intricacies and perplexities of obscure and doubtful interpretations by holding fast to the simple, incontestable fact that the heart continues to beat after removal from the body. This fact says Volkmann[10] proves absolutely that the force causing the heart beat does not arise in the brain or cord. The development of modern physiology has served to demonstrate the correctness of Volkmann's reasoning. By the methods of isolating the heart, first used in this country by Newell-Martin and subsequently modified and improved by Porter, Langendorff, Locke, Hering and others, we are now able to keep the hearts of mammals, including man, beating for hours or days, after all connections with the central nervous system are severed.

That form of the neurogenic theory which made the heart's beat dependent on the central nervous system was finally disposed of when the true functions of the extrinsic nerves to the heart were demonstrated. Physiologists were perhaps more willing to let it depart forever, because, at this period, an entirely different kind of neurogenic hypothesis was meeting with great favor on all sides. According to this newer view, the cause of the heart beat lies in the automatic activity of the sympathetic ganglia, present in the heart itself. In this form the neurogenic hypothesis quickly and completely replaced the myogenic theories as proposed by Haller, the pendulum of physiologic belief taking a strong and a long swing to the nervous side. This particular form of the neurogenic theory seems to have originated in the work of Bichat.[11] In the grand and comprehensive system devised by this remarkable man, the processes of the animal body are divided into the animal and the organic. Over the latter, including the beat of the heart, the central nervous system has no control; they are under the influence of the sympathetic or ganglionic system. The sympathetic nerve in fact was assumed, in accordance with the old idea of Winslow, to consist of a number of small independent systems for each of which a ganglion served as a center or brain. No direct evidence was furnished then, nor has it been furnished since, that such ganglia control the movements of the heart, but the theory offered a plausible hypothesis, and, in the minds of most physiologists, the hypothesis was almost definitely proved when, in 1844, Remak[12] described nerve ganglia within the substance of the heart. From our modern standpoint it is difficult to understand why this anatomical fact should have carried so much weight.

If the isolated heart continues to beat it is surely just as logical to assume that the cause of the beat lies in the properties of the musculature, as in those of the intrinsic nerves. Yet for a long period of years physiologists were practically unanimous in giving the latter interpretation. The consideration that had most weight with them beyond doubt, was the orderly co-ordinated character of the heart beat. The co-ordination of different muscles to give an orderly sequence of contractions is usually under the control of the nervous system, as is shown in voluntary or reflex movements and in the rhythmic play of the respiratory muscles. In the heart beat a similar sequence is presented. The contractions of the veins, auricles and ventricles follow in a definite order, and whether stimulated naturally or artifically the musculature of each chamber contracts in a co-ordinated fashion. For the control of such a complex and yet orderly movement it was natural, reasoning from analogy, to assume that nerve centers are required. Practically all physiologists abandoned the myogenic hypothesis of Haller and accepted the neurogenic theory as formulated by Volkmann.[13] For a period of 40 years this view was taught almost exclusively in the text-books and was accepted in all the discussions of the current literature. Investigation in fact, was directed largely toward discovering the finer anatomy of the intrinsic nervous mechanism and speculating on the specific rôles played by the different ganglia.

In the frog's heart, which formed the classical object of research, two distinct nerve centers were described, one, the ganglion of Remak, situated at the junction of the sinus venosus and auricles, the other the ganglion of Bidder, lying at the level of the auriculoventricular ring. Numerous experiments were made to determine the difference in function, if any, between these two centers. While the original view had assumed simply that the intrinsic ganglia function as motor centers, discharging impulses in regular sequence into the different chambers, numerous corollaries or amendments to this hypothesis soon appeared. For a time the polydynamic theory, as it was designated, obtained increasing acceptance. It was recognized that the beat of the heart begins normally at the venous end and thence spreads in orderly sequence to auricles and ventricles; hence it was concluded that the ganglion of Remak in the sinus constitutes the original or chief motor center in which the first impulses arise automatically. But it was known also that parts of the heart, separated from this ganglion by section or ligature, may also beat rhythmically and respond to artificial stimulation by co-ordinated contractions; hence it became necessary to regard other nerve cells in the heart as subordinate motor centers. Bidder[14] and others believed that the ganglia discovered by him at the junction of auricle and ventricle function as reflex motor centers. So also the inhibitory action of the vagus nerve led naturally to the supposition that an inhibitory center exists in the heart; while numerous pharmacologic studies suggested

10. Volkmann: Müller's Archiv., 1844.
11. Bichat: "Récherches physiol. sur la vie et la mort," 1800.
12. Remak: Müller's Archiv., 1844.
13. Volkmann: *Ibid.*; also Wagner's Handwörterbuch d. Physiol., vol. II.
14. Bidder: Müller's Archiv., 1852.

still more elaborate views in order to explain the differences in action of various drugs. Schmiedeberg[15] (1870) assumed the existence not only of motor and inhibitory centers, but also of an intermediate apparatus of some sort placed on the course of the vagus fibers before they reach the inhibitory center. Perhaps the latest effort of this kind to differentiate between the functions of the intrinsic ganglia is found in the papers of Kaiser[16] (1893-4) who describes an automatic or excitomotor center at the venous end of the heart, certain subordinate motor centers in auricles and ventricles and an inhibitory center in the auriculoventricular region. The last named center is stimulated reflexly by the systole of the ventricle, and then sends inhibitory impulses to the subordinate motor centers, whereby these latter are inhibited, and diastolic expansion is produced in the ventricle.

From the time of Volkmann to that of Kaiser the neurogenic hypothesis has been given many specific forms by Joh. Müller, Kürschner, Budge, Schiff, Goltz, and others, but in recent years the interest in this matter of subdividing the functions of the various ganglia has obviously subsided. It is recognized that the whole neurogenic theory is again under discussion, and that it is more important at present to decide the fundamental question, whether the nerve cells have anything to do at all with the cause of the heart beat. The neurogenic view held to-day by many physiologists probably asserts no more than was stated by Munk in 1881, namely, that the automatic ganglion in the sinus (in the frog's heart) is the *primum movens* of the heart's activity, and that the excitations proceeding from it through the septal nerves stimulate the auricle, and indirectly the ventricle through the activity of the non-automatic ventricular ganglia. The strict neurogenists must hold in addition that all the ganglion cells (or the elements of the nerve network) in the heart are capable of independent automatic or reflex activity, since isolated bits of the heart under proper conditions give rhythmic pulsations. Friedländer[17] asserts that very minute fragments of the heart, not larger than 0.2 mm., when taken from the sinus, auricle or upper third of the ventricle, continue to beat as long as 48 hours, if kept in a proper serum.[17] The proofs furnished for this neurogenic theory were not really conclusive, and it is, therefore, natural to find that after a certain period of triumph, some investigators began to scrutinize the facts in a skeptical way.

Engelmann, influenced by his experiments on the rhythmic contractions of the ureters, which are devoid of nervous elements, suggested in 1869 that possibly the heart beats have a muscular origin. But the modern renaissance of the myogenic theory dates from the work of Gaskell,[18] from 1881 to 1883. He began his well-known experiments on the rhythmic activity of the heart in frogs and terrapins while still a believer in the neurogenic theory, but the facts that he discovered convinced him that the heart muscle itself possesses the property of automatic rhythmicity, and that this property is most highly developed in the tissue at the venous end of the heart. He proposed, therefore, a theory which, like that of Haller, assumes an independent irritability and rhythmicity in the heart muscle, but which differs from Haller's in that it does not attempt to account for the cause of the contractions.

Gaskell's beautiful experiments led him to believe that the systole of the heart begins at the venous end (sinus venosus), because the property of rhythmicity is most highly developed in this region. Thence the contraction spreads as a peristaltic wave over the rest of the heart, its rate of conduction being rapid in the expanded and modified portions of the original tube which constitute the auricles and ventricle, and less rapid in the more primitive tissue that forms the auriculoventricular ring. The slower velocity at this latter point occasions the apparent pause between the auricular and ventricular systoles. As for the nerve cells found so plentifully in the heart, he considers them merely as peripheral sympathetic cells in which the preganglionic fibers of the vagus end before being distributed to the cardiac muscle. They constitute, therefore, merely a portion of the inhibitory mechanism, and are in no way connected with the causation of the heart beat.

Gaskell's point of view was supported by Engelmann in numerous excellent researches, and from that time the myogenic theory has won many adherents among the physiologists of all countries. The controversy still furnishes material to the current literature, and the fact that this difference of opinion exists at present is in itself evidence that no absolutely conclusive proof has been furnished by either side.

Some of the many arguments advanced by one party or the other have failed to stand the test of subsequent investigations, and have, therefore, dropped out of the case as it presents itself to us to-day, but the actual condition of the question may be understood most clearly by reviewing briefly those facts and deductions which are still used most frequently by the adherents of the two views.

FACTORS IN THE PROBLEM.

Automaticity of the Various Parts of the Cardiac Musculature.—Is it true that all parts of the heart possess the property of giving automatic rhythmic contractions? We know that under normal conditions the beat of the heart begins in the great veins. The contractions of the remaining portions are due to impulses or excitations received from the venous end, either by way of the musculature or the nerves. Under normal conditions, therefore, only the venous end contracts automatically; the remainder of the musculature is stimulated to beat. When, therefore, we consider the automaticity of the heart beat as a whole, it is obvious that it depends for its initiation on the properties of that small portion of the musculature which forms the mouths of the great veins. The question arises whether the rest of the muscle of the heart possesses similar properties. Can any portion of it continue to beat rhythmically if its connections with the venous end are severed? The evidence that has accumulated within the last quarter of a century seems to me to be entirely conclusive on this point. It shows beyond question, so far as the vertebrate heart is concerned, that every portion possesses, in some degree or other, the property of giving automatic rhythmic beats provided the proper conditions are maintained. If the apex of the frog's heart is separated from the rest of the organ it refuses to beat in spite of being supplied with normal blood. But if it is put under a certain tension, or if certain substances are added to the circulating blood, it will give rhythmic contractions.

15. Schmiedeberg and Koppe: Berichte d. königl. sächs. Gesells. d. Wiss., 1870.

16. Kaiser: Zeits. f. Biol., 1893, p. 203; *ibid.*, 1894, p. 279.

17. Friedländer: von Bezold's Untersuchungen a. d. physiol. Lab. in Würzburg, 1867.

18. Gaskell: Jour. of Physiol., 1883, vol. iv, p. 43.

When the terrapin's ventricle is cut off from the rest of the heart it remains quiet as a rule, so long as normal blood circulates through it, but a slight change in the inorganic salts of the circulating liquid, such as the removal of the potassium compounds, causes it to begin a series of beats. So, also, strips taken from various parts of the heart may be made to beat rhythmically for long periods by immersing them in special solutions. While it is true, therefore, that certain parts of the heart in some animals are incapable of beating automatically under perfectly normal conditions, that is, when supplied with the animal's own blood, it is evident that such portions of the heart have a latent property of automatic rhythmicity which may be aroused into activity when the proper conditions are provided. The beats under such conditions are of the same order of phenomenon as those normally exhibited by the venous end of the heart. If, therefore, we could find any portion of the heart entirely devoid of nervous tissue and could so modify its conditions as to cause it to give beats of the usual cardiac type, we should be in possession of a fact that would be nearly conclusive proof of the myogenic origin of the heart beats. Very numerous efforts have been made to furnish a crucial experiment of this sort.

Rhythmic Contractions in the Absence of Nerves.—The following instances of rhythmic contractions in muscular tissues devoid of nerves have been cited. The ureters (Engelmann); the veins in the bat's wings (Wharton Jones); the veins in the rabbit's ear (Schiff); certain portions of the veins opening into the frog's heart (Engelmann); the apex and also the bulbus arteriosus (Engelmann) of the frog's heart; strips from the apical portion of the terrapin's ventricle (Gaskell); the hearts of many invertebrates (Foster, Biedermann, *et al.*); the heart of the young embryo (Wagner, His). Most of these instances carry but little weight, as proof of the myogenic theory, at the present time. In regard to the ureters, or the veins in the wing or ear, it may be urged that they prove nothing concerning the heart, even if the absence of nerve tissues were demonstrated beyond doubt. So also regarding the apex or bulbus arteriosus of the frog's heart, or the hearts of invertebrates, the results of histologic work in recent years have tended to make untenable the old belief that these tissues are devoid of nerve cells.[19]

The old observation that the fetal heart begins to beat before it possesses nervous elements is the only one of the facts of this kind which remains unchallenged. Its correctness seems to have been clearly demonstrated in recent years by the careful work of W. His, Jr.[20] Engelmann has cited this fact as the best single proof of the truth of the myogenic theory. Objections, however, have been raised to its conclusiveness. It has been urged that the fact that the beat of the embryonic heart is myogenic in origin is in itself no proof that the older heart, with its intrinsic nervous mechanism, continues to function in the same way. It may be that after the migration of the nerve cells into the heart they assume, as the more automatic tissue of the two, the function of initiating the beat. This mode of reasoning appeals to some physiologists. On the other hand it is pointed out that the negative evidence regarding the presence of nerve elements in the early embryonic heart may disappear, as has happened to such evidence in other cases, when better histologic methods are devised. An improved technic may show the presence of nerve elements in the embryonic tissue, or demonstrate the existence of conducting paths between it and outlying nerve cells. The case at present gives strong support to the myogenic theory, but it has not sufficed to remove the objections of the other side.

Hearts Known to Be Controlled by Nerve Cells.—Among the great variety of hearts studied by physiologists some have been discovered in which the beat is obviously dependent on the presence and properties of nerve cells. These cases merit especial consideration. It is believed by some that the lymph hearts in the frog furnish an example of this kind. Destruction of the spinal cord is followed by a cessation of the beat, and light doses of curare have a similar effect; both facts indicating that the musculature is normally stimulated by impulses received from extrinsic nerve fibers. The case, however, is not a clear one, since according to some observers the hearts may begin to beat again after removal of the spinal cord, and moreover it is at most an instance of a heart controlled directly from the central nervous system and not by the action of peripheral ganglia. A similar case is presented by the caudal hearts of the hag fish. Greene has shown[21] that the beat of these peculiar structures is dependent on the action of a nerve center in the spinal cord. Destruction of this center brings the heart to a standstill.

The contractile apparatus in this case is not a true heart in structure; it is composed, rather, of two specialized striated muscles, belonging to the somatic type, which are so arranged as to compress and dilate two membranous sacs. As Greene says, the whole mechanism is strictly comparable to that of the respiratory muscles in mammals. It furnishes no more support to the neurogenic theory than is already found in the existence of the rhythmic contractions of the diaphragm under the influence of the automatic respiratory center in the medulla.

Recently, Carlson[22] has made the interesting discovery that the heart of the limulus depends for its rhythmic beat on the activity of nerve cells. In this animal the large median nerve stretching along the dorsal surface of the heart contains numerous ganglion cells. When this nerve cord is excised the heart ceases to beat, although still irritable to artificial stimulation. Carlson's work seems to show conclusively that not only the automatic beat of this heart, but the conduction also of the wave of contraction is entirely dependent on the action of the nerve cells in the median nerve cord. We have here, therefore, an instance in which the automatic contractions and the co-ordination of a genuine blood heart are undoubtedly of neurogenic origin. The question arises whether we are justified in applying this result, obtained on an invertebrate heart, to the hearts of the vertebrate animals.

One consideration which presents itself in this connection tends to make an impartial observer doubt whether such a wide induction is permissible. The cardiac muscle in the vertebrate heart possesses certain peculiar properties which serve to distinguish it from the usual skeletal muscle. The most characteristic and fundamental of these properties is a long refractory period. That is to say, when cardiac muscle contracts spontaneously, or in consequence of an artificial stimu-

19. For discussion and literature see Carlson: Pflüger's Archiv., 1905, vol. cix, p. 51.

20. His, W., Jr.: Abhandlgn. d. math. phys. Klasse d. königl. säch. Gesells. d. Wiss., 1891, vol. xviii; also Krehl and Romberg: Archiv. f. exp. Pathol. u. Pharm., 1892, vol. xxx, p. 71.

21. Greene: Amer. Jour. of Physiol., 1900, vol. iii, p. 366.

22. Carlson: Amer. Jour. of Physiol., 1904, vol. xii, p. 67; *ibid.*, 1905, vol. xii, p. 471.

lus, it is entirely unirritable to further stimulation during the whole of its time of shortening. This reaction is shown by the musculature in all parts of the vertebrate heart, and most physiologists regard it as a property which lies at the basis of the phenomenon of rhythmicity. Now the musculature of the heart of the limulus, of the closely related heart of the lobster, and of the hearts of other invertebrates, does not possess this characteristic property.[23] It is, therefore, to all appearances, a kind of muscle different from the cardiac muscle of the vertebrates, and resembles rather skeletal or voluntary muscle. Like this latter form of muscle it does not possess the property of automatic rhythmicity, but receives its stimulating impulses from the nervous system. Unless it can be shown that the refractory period is not a characteristic and distinguishing property of cardiac muscle as it exists in the higher vertebrates, this discovery that the heart beat of the limulus has a neurogenic origin fails to have a direct bearing on the problem that we are considering, namely, the myogenic or neurogenic nature of the heart beat in vertebrate animals.

An effort to show this very thing has been made within the last few months in a paper published by Rohde.[24] The author states that when a frog's heart is dosed with chloral the muscle loses all of its characteristic properties and resembles ordinary skeletal muscle. By paralyzing completely the intrinsic nervous system the chloral gives us a chance to study the heart muscle itself, and according to this paper the muscle under these conditions turns out to be like that of the heart of the limulus or other invertebrates. From this point of view, therefore, what we have called the characteristic properties of heart muscle, the refractory period for example, are really properties of the intrinsic nervous apparatus. It is evident at once to a physiologist that a conclusion of this sort lands us in a difficulty of interpretation to which the author has paid no attention. One may ask such a question as this: If the refractory period is a property of the intrinsic nerves, and if nevertheless the heart muscle is independently irritable to artificial stimulation, how does it happen that an electrical stimulus applied directly to the muscle of the normally beating heart during the phase of systole fails to provoke a contraction? A seemingly unanswerable question of this kind would not, of course, invalidate actual experimental results, and in view of the importance of the far-reaching conclusions of the author his experiments have been repeated in my laboratory by Mr. Schultz.

The results of this work will be published shortly, but I may say that they show conclusively that Rohde was in error in saying that chloral effaces all of the characteristic properties of heart muscle. It modifies in an interesting way the response of this muscle to repeated stimulation, especially in the matter of its tone contractions,[25] but the striking peculiarity of the heart muscle, namely, the refractory period, is still retained. It is difficult to understand how Rohde could have reached a different conclusion, unless indeed he was misled by an inaccurate method of registration. The objection that I have made to the general application of Carlson's results on the heart of the limulus retains, therefore, its full significance and prevents us from accepting this work as giving a final solution to the problem. Some further facts which tend to support the myogenic view may now be considered.

The Reversal of the Beat.—Under various conditions the beat of the heart may be reversed, that is, the wave of contraction may begin in the ventricles, proceed thence to the auricles, and finally to the sinus venosus. As Gaskell, Engelmann and others have pointed out, this reversal, while easily understood on the myogenic theory, is opposed to the usual form of the neurogenic hypothesis. A nervous mechanism, consisting of a principal motor center in the region of the sinus and subordinate motor centers in auricle and ventricle, can not, according to our experience with such mechanisms in other parts of the body, work in both directions; a system of connecting neurons is a mechanism that conducts and co-ordinates only in one direction.

To account for this phenomenon the neurogenists are obliged to assume that the nervous apparatus in the heart forms a peculiar interconnecting network, the like of which is not found in the other automatic nervous mechanisms of the body, not even in those of the intestines. For when any portion of the intestine in a condition of rest is stimulated at a given point the wave of contraction or of contraction and inhibition proceeds onward in normal fashion; the movement is a peristalsis and not an antiperistalsis. In the heart, on the contrary, when at rest, any adequate stimulus applied to the ventricles will set up a reversed rhythm. The necessity forced on the neurogenists to make a new and unproved assumption to meet this case, does not, of course, strengthen their side of the argument. So, too, the well known zigzag experiment by Engelmann fits well into the myogenic theory, but is difficult of explanation in terms of the neurogenic hypothesis without recourse to the unknown properties of a nerve network. In this experiment it was shown that when a ventricle is so cut as to form an irregular piece, with intervening narrow bridges, a stimulus applied at either end arouses a wave of contraction that spreads in orderly sequence over the whole piece. *(To be continued.)*

23. Carlson: Amer. Jour. of Physiol., 1905, vol. xii, p. 492; also Hunt, Bookman and Tierney: Centbl. f. Physiol., 1897, vol. xi, p. 274.

24. Rohde: Archiv. f. exper. Path. u. Pharm., 1905, vol. liv, p. 104.

25. In this connection see Porter: Amer. Jour. of Physiol., 1905, vol. xv, p. 1.

CEREBROSPINAL MENINGITIS IN NEW YORK CITY DURING 1904 AND 1905.*

J. S. BILLINGS, Jr., M.D.
NEW YORK.

During the past forty years there have been four outbreaks of epidemic cerebrospinal meningitis in New York City. The first and, up to that of 1904 and 1905, the most severe epidemic was in 1872, when there were 782 deaths—a death rate of 8.70 per 10,000. In 1881 and 1893 the outbreaks were not so severe; the number of deaths were, respectively, 461 and 469, and the death rates 3.70 and 2.67. The latest epidemic, the severest in the history of the city, began in the early months of 1904 and continued through 1905. During 1904 there were 1,083 deaths and a death rate of 4.6; during 1905, 1,511 deaths and a death rate of 6.3.

The winters of 1872, 1881, 1893 and 1904 were what are known as "hard winters;" being cold, with considerable snow. The disease has always been abnormally prevalent for a year or two after each outbreak, but hitherto the number of cases during the second year was considerably less. In 1905, however, the epidemic was much more severe in the second than in the first year.

* A report to the commission appointed by the Department of Health, City of New York, for the investigation of cerebrospinal meningitis.

The number of deaths and death rate from cerebrospinal meningitis in the old city of New York (Boroughs of Manhattan and the Bronx) from 1866 to 1905 are shown in Table 1.

TABLE 1.—DEATHS FROM CEREBROSPINAL MENINGITIS, IN THE OLD CITY OF NEW YORK (MANHATTAN AND THE BRONX), WITH POPULATIONS AND DEATH RATES PER 10,000.

Year.	Population.	Number of Deaths.	Death Rate.	Year.	Population.	Number of Deaths.	Death Rate.
1866	767,979	18	.23	1887	1,479,143	203	1.37
1867	808,489	33	.40	1888	1,522,341	173	1.14
1868	851,137	34	.39	1889	1,566,801	145	.93
1869	896,034	42	.47	1890	1,612,559	136	.84
1870	943,300	32	.34	1891	1,659,654	189	1.14
1871	955,921	48	.50	1892	1,708,124	230	1.35
1872	968,710	782	8.07	1893	1,758,010	469	2.67
1873	981,671	290	2.95	1894	1,809,353	213	1.18
1874	1,030,607	158	1.53	1895	1,873,201	204	1.09
1875	1,044,396	146	1.40	1896	1,906,139	178	.93
1876	1,075,532	127	1.18	1897	1,940,553	232	1.20
1877	1,107,597	116	1.05	1898	1,976,572	258	1.31
1878	1,140,617	97	.85	1899	2,014,330	287	1.42
1879	1,174,621	108	.92	1900	2,055,744	201	.97
1880	1,209,196	170	1.41	1901	2,138,209	201	.94
1881	1,244,511	461	3.70	1902	2,182,836	190	.87
1882	1,280,857	238	1.86	1903	2,249,680	195	.86
1883	1,318,264	223	1.69	1904	2,318,831	1,083	4 6
1884	1,356,764	210	1.55	1905	2,390,382	1,511	6.3
1885	1,396,388	202	1.45	1906	.....	....	...
1886	1,437,170	223	1.55	1907	.....	....	...

The same facts are shown in diagrammatic form in Chart 1, the course of the general death rate being also shown.

Table 1 shows: (a) the periodicity (about every ten years) of the outbreaks; (b) the greater severity of the 1904-1905 epidemic; and (c) the lack of correspondence between the general death rate, and that from cerebrospinal meningitis. Only in 1904 did the two rise together, while in 1905 the former fell while the latter rose. The weekly course of the disease during 1904 and 1905 is shown in Chart 2.

It will be noted that in 1905 the epidemic began earlier in the year by over a month than in 1904, reached its highest point seven weeks earlier, exhibited a recrudescence early in May, another slight one in July and died away about two weeks later. Every case of cerebrospinal meningitis reported in the Borough of Manhattan during 1905 was plotted on a large map of the Borough.

This map shows the prevalence of the disease among the poorer classes and in the densely settled districts. That Italians are extremely susceptible to the disease is borne out by the map, the cases being most numerous on the lower East Side, the lower middle West Side, and the upper East Side ("Little Italy").

The deaths for 1904, arranged by wards, are given in Table 2.

TABLE 2.—TABLE OF DEATHS FROM CEREBROSPINAL MENINGITIS BY WARDS FOR THE YEAR 1904, BOROUGH OF MANHATTAN.

Ward	Population Census 1900	Number of deaths	Death rate per 10000	Prevailing foreign population.
1	9,516	5	5.25	Irish, Syrian.
2	1,488	1	6.72	Irish.
3	1,797	1	5.56	Irish.
4	19,554	30	15.34	Italian.
5	8,298	11	13.26	Irish, Italian.
6	20,004	30	15.00	Chinese, Italians.
7	89,237	83	9.30	Irish, Jews.
8	29,059	31	10.67	Italian, Irish.
9	50,650	41	6.87	Negroes, Irish.
10	71,879	45	6.26	Jews.
11	99,144	38	3.83	Jews.
12	476,602	174	3.65	Jews, Italians.
13	64,117	41	6.40	Roumanians, Jews.
14	34,035	44	12.93	Italians.
15	24,066	14	5.82	Italians.
16	52,808	27	5.11	Irish, French.
17	130,796	104	7.95	Hungarians, Jews.
18	61,325	39	6.36	Jews.
19	257,448	94	3.65	Bohemians, Jews.
20	89,798	45	5.01	Negroes.
21	60,211	35	5 81	Irish, Americans.
22	189,261	70	3.70	Negroes, Italians.
Total.	1,850,093	1,003	5.42	

It will be noted that the high death rates (15.34 for the Fourth ward, 15.0 for the Sixth ward, etc.) occur in the wards in which Italians constitute the majority of the foreign population.

A COMMISSION APPOINTED.

An attempt was made to investigate the disease during the spring of 1904, but no definite information was obtained beyond certain facts going to show that infection might be carried by means of the discharges from the body of the patient. Early in 1905 when cerebrospinal meningitis again became prevalent, the Board of Health determined to investigate the disease systematically, particularly as to its mode of spread and possible modes of prevention. To this end, following the same procedure adopted in the case of the acute respiratory diseases, a commission for the investigation of cerebrospinal meningitis was appointed. It was composed of the following physicians: Thomas Darlington, president board of health, Hermann M. Biggs, medical officer, W. K. Draper, B. K. Dunham, Simon Flexner, Walter B. James, William L. Polk, Walter P. Northrup, Joshua Van Cott and Elser. The commission held its first meeting on March 24, 1905, when it divided into clinical and bacteriologic sections, each section to work along those respective lines.

At the same time, a corps of inspectors of the Department of Health was organized for the investigation of the disease. These physicians were especially selected for the purpose, and further fitted themselves for the work by observing a large number of cases of cerebrospinal meningitis in the hospitals.

The commission urging that lumbar puncture be done in every instance for the purpose of diagnosis, for relief of pressure symptoms, and to provide material for bacteriologic study, a special inspector of the Department of Health was assigned to the performance of this operation on the request of physicians.

The subcutaneous and intraspinous administration of diphtheria antitoxin, having been strongly recommended by certain physicians and institutions, the Department of Health put the services of the diphtheria antitoxin inspectors at the disposal of physicians desiring that mode of treatment. Even at that time the Department took no stand for or against this line of treatment; since then, experience has shown it to be useless.

On April 19, 1905, the Board of Health declared cerebrospinal meningitis to be a communicable disease, and required the reporting of all cases by physicians, enforcement of quarantine, isolation of patients, exclusion of other children in the family from school, and disinfection of premises and bedding on termination of the disease. The sanitary supervision of the disease was assigned to the Division of Communicable Diseases of the Department.

ROUTINE PROCEDURE.

As elaborated during 1904 and 1905 the routine procedure is as follows: Cases are reported to the Department of Health (1) by physicians and institutions on postal cards furnished for that purpose; (2) by the forwarding of specimens of spinal fluid to the Diagnosis Laboratory; (3) by death certificates; and (4) by complaints of citizens and others.

Case History.—A full history of each case (home surroundings, symptoms, outcome, etc.) is obtained by a medical inspector on the accompanying history sheet.

When completed, this is filed according to the address of the patient. Each new case reported is compared

with this record. If the patient remains at his home, full instructions as to the nature of the disease are given to the family verbally and by circular, isolation and quarantine are enforced, other children of the family on the premises are excluded from school, and other tenants in the house notified of the existence of the disease. The case is kept under supervision by an inspector until its termination by death, recovery, or removal. In all fatal cases not previously reported during life, an explanation is demanded and obtained from the attending physician. On termination of the case, disinfection of the premises and bedding is ordered.

To make sure that knowledge of all cases reaches the Department of Health, every death from meningitis (simple, tuberculous, etc.) is also investigated. For results see tabulation of cases.

Circular.—The following circular of information has been prepared for distribution by the medical inspectors, one being left with the family of each patient, or sent to the attending physician.

CIRCULAR OF INFORMATION REGARDING CAUSATION AND PREVENTION OF CEREBROSPINAL MENINGITIS.

Cerebrospinal meningitis is an acute, infectious, communicable disease, caused by a specific germ, the meningococcus. This organism is frequently present in the discharges from the mouths, noses, eyes and ears of patients suffering from the disease, and is thus transmitted from person to person. The disease is always present in the vicinity of New York, sporadic cases occurring at all seasons of the year. From time to time, however, it appears in epidemic form, such epidemics having taken place in 1872, 1881, 1893, 1904 and 1905. Table 1 shows the number of deaths and death rate from the disease since 1866.

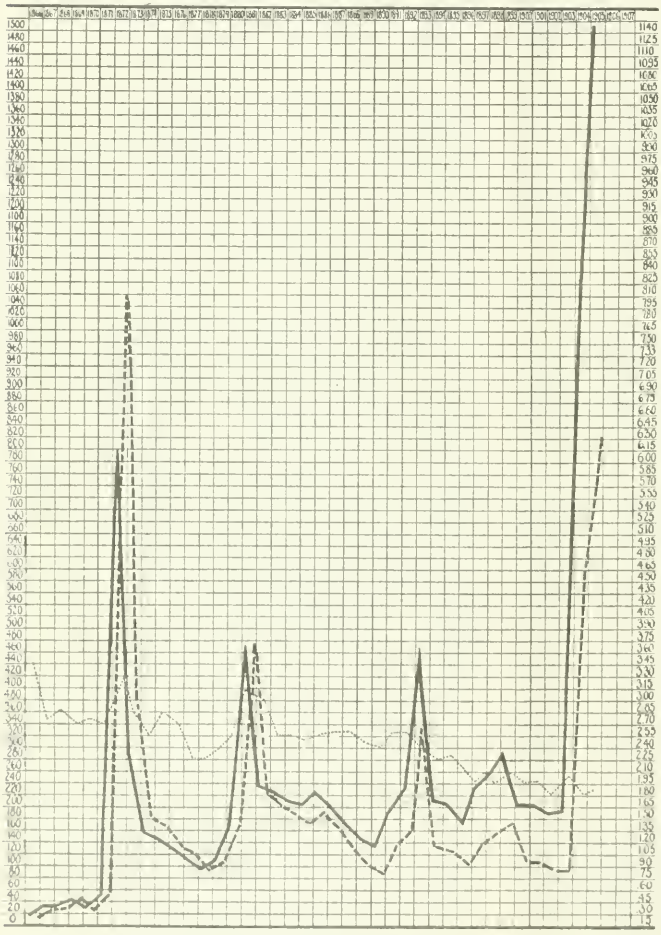


Chart 1. Showing number of deaths from cerebrospinal meningitis in the old City of New York, and death rate per 10,000 of population. Straight line — number of deaths from cerebrospinal meningitis. Broken line — death rate from cerebrospinal meningitis. Dotted line — general death rate.

Cerebrospinal meningitis occurs most frequently in children between the ages of 1 and 10 years, and is very fatal. Of 1,780 cases occurring in New York during 1905, 1,360 ended in death, a mortality of 76 per cent. The meningococcus (*Diplococcus intracellularis meningitidis* of Weichselbaum) sets up an inflammation of the membranes of the brain and spinal cord. This organism is frequently, and probably as a rule, transmitted from the sick to the well by means of the discharges from the nose and throat. It has also been found in the discharge from the eyes and ears. It is occasionally present in the noses and throats of healthy persons who have come in close contact with the sick or used towels or handkerchiefs soiled by them. Such persons, while not contracting the disease themselves, may transmit it to others, so that the disease greatly resembles diphtheria in its mode of spread, etc. An absolute proof that a given case is one of epidemic cerebrospinal meningitis is furnished by the presence of meningococci in the spinal fluid withdrawn by lumbar puncture. The operation of lumbar puncture is simple, and when properly performed, free from danger. It is sometimes actually beneficial by relieving pressure and the symptoms arising from this.

Outfits for forwarding specimens of fluid for examination may be obtained at any of the drug stores throughout the city which supply the various diagnostic outfits furnished by the Department of Health. Such specimens, on being forwarded to the Diagnosis Laboratory, Fifty-fifth street and Sixth avenue, are examined for the presence of the meningococcus and the results telephoned to the attending physician.

Prophylaxis.—Patients shoul be strictly quarantined for at least the first two weeks of their illness. Experience has shown that the danger of infection is much less after this time. The same precautions should be observed as in a case of diphtheria. Those nursing or coming in close contact with the sick should wear gowns while in the sick room and should take great care to disinfect their hands after touching or handling the patients. They should avoid close association with healthy persons, especially children. All discharges from the nose and mouth of the sick should be most carefully disinfected, and all bed linens, towels, handkerchiefs, clothing, etc., should be boiled or soaked

in a disinfecting solution. The dishes, forks, spoons, etc., of the patient should be reserved for his sole use Rubber sheeting should be used over pillows to prevent their saturation with the discharges.

Treatment.—No serum or specific remedy for the disease has yet been discovered. The provision of plenty of fresh, cool air, a carefully chosen diet and the treatment of symptoms as they arise are all that can be done.

Notification.—The Board of Health, in view of the above-mentioned facts, on April 19, 1905, declared cerebrospinal meningitis to be a communicable disease, and required physicians to report all cases coming under their observation to the Department of Health. Since that date the following routine procedure has been adopted:

1. The attending physician must report every case as soon as it comes under his observation. Postal cards are supplied for that purpose.

2. Every case is visited by an inspector to see that the regulations of the Department are being observed. If necessary, the case is kept under observation.

3. A history is obtained from the attending physician.

4. All children in the family are excluded from school until the termination of the case by recovery, death or removal to a hospital.

5. On termination of the case in any manner, the department fumigates the premises with formaldehyd and removes, disinfects and returns bedding, rugs, etc. For further information apply to J. S. Billings, Jr., M.D., Chief of Division of Communicable Diseases, Department of Health.

In conclusion, every physician and layman is urged to co operate with the Department in the contest with this terrible disease. THOMAS DARLINGTON, M.D., President.

HERMANN M. BIGGS, M.D., General Medical Officer.

OTHER BOROUGHS.

As the authority of the Division of Communicable Diseases was extended to the other Boroughs of New York City early in 1905, the same routine procedure in connection with cerebrospinal meningitis was introduced, and information obtained of all cases occurring from Jan. 1, 1905. Table 3 gives the number of cases, deaths, death rates, case fatality and morbidity rate for each of the five Boroughs and Greater New York for 1904 and 1905.

TABLE 3.

Borough.		Number of new cases reported.	Number of Deaths.	Number of Deaths not previously reported.	Death Rate per 10,000.	Case fatality per cent.	Morbidity rate per 10,000.
Manhattan:	1904	1,044	1,003	..	4.86	...	..
	1905	1,892	1,424	..	6.72	75.2	9.7
Bronx:	1904	....	80	..	3.11	...	..
	1905	118	87	4	3.18	73.7	4.3
Brooklyn:	1904	....	277	..	2.09	...	..
	1905	689	455	24	3.33	66.0	5.0
Queens:	1904	....	29	..	1.53	...	..
	1905	38	48	..	2.41	...	..
Richmond:	1904	....	14	..	1.95	...	..
	1905	18	12	1	1.64	66.6	2.5
Greater N.Y.:	1904	....	1,403	..	3.59	...	..
	1905	2,755	2,026	29	5.03	73.5	6.8

It will be seen that the death rate for 1905 was twice as great in Manhattan as in any of the other Boroughs.

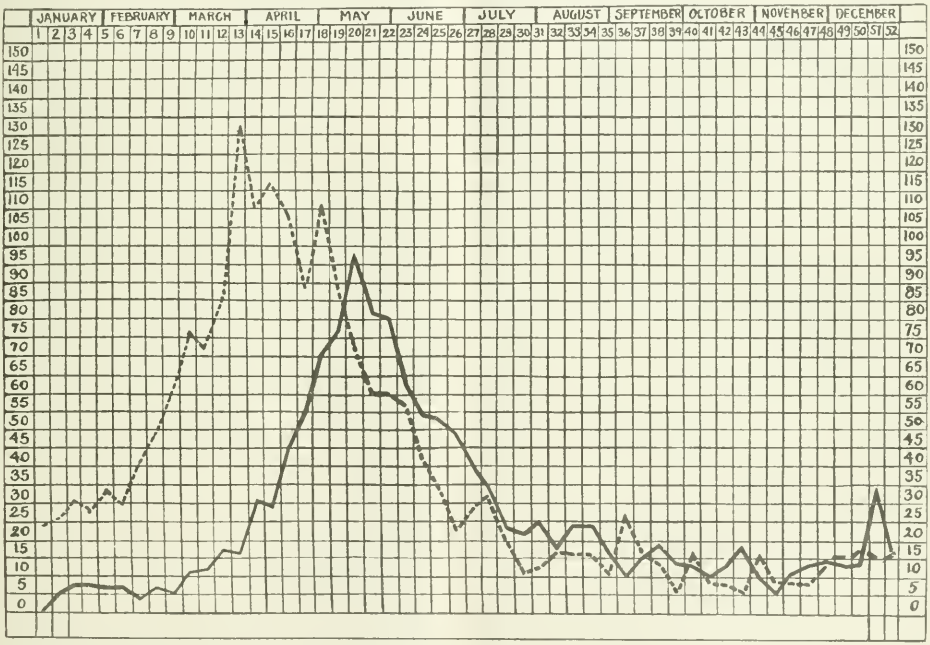


Chart 2.—Showing the number of deaths from cerebrospinal meningitis—is by weeks, for the years 1904 and 1905, in Greater New York Straight line, 1904. Broken line, 1905.

The disease being twice as prevalent in Manhattan as in Brooklyn, two and a half times as in the Bronx, and four times as in Queens and Richmond. It was likewise more fatal in Manhattan than elsewhere, the Bronx coming next in this regard. No accurate record of reported cases could be obtained for Manhattan for 1904, and none at all for the other Boroughs.

Tabulation of Cases.—As previously stated, the Department of Health has endeavored to obtain full information regarding every case of cerebrospinal meningitis occurring in New York City during 1905. There were 2,755 cases reported; information was obtained in 2,180. The results are shown in Tables 4 and 5.

TABLE 4.—CEREBROSPINAL MENINGITIS, 1905.

	Manhattan.	Bronx.	Brooklyn	Queens.	Richmond.	Greater New York.
AGE:						
0-1 years	256	11	63	2	0	332
1-5 years	454	31	146	7	1	639
5-10 years	371	18	103	11	2	505
10-20 years	268	21	108	9	3	409
20-50 years	189	11	60	1	3	264
Over 50 years	24	..	7	..	..	31
Total	1,562	92	486	30	9	2,179
SEX:						
Male	840	56	249	19	6	1,170
Female	715	35	235	11	3	999
Not stated	7	2	2	..	..	11
NATIONALITY:						
United States	860	53	133	27	6	1,079
Italy	179	5	67	..	..	251
Russia	93	..	58	..	..	151
Germany	36	1	21	1	..	59
Ireland	37	1	16	..	..	54
Negro	21	..	..	1	..	22
France	4	..	1	..	..	5
England and Scotland	2	2	0	..	..	4
Miscellaneous	10	3	2	2	1	18
Not stated	326	25	186	..	..	537
DWELLING:						
Tenement	1,247	57	366	8	..	1,678
Dirty halls	443	14	144	1	..	602
Dirty area	389	12	133	2	..	536
Dirty yard	29	14	137	4	2	186
Dirty street	402	20	107	4	..	533
Total cases showing one or more of above conditions	471	24	183	11	2	691
Insufficient ventilation	255	5	44	..	..	304
Insufficient light	170	5	49	3	..	227
Bad plumbing	154	7	73	1	1	236
Lack of cleanliness	279	13	72	..	..	364
Dust	284	18	174	7	2	485
Parasites	145	13	82	11	0	251
Pets	182	20	73	15	3	293
Other cases in home or neighborhood	353	16	59	5	..	433
PREVIOUS HISTORY:						
Measles	138	4	52	..	..	194
Whooping cough	43	7	22	..	..	72
Pneumonia	35	6	12	..	..	53
Diphtheria	37	2	13	..	..	52
Scarlet fever	33	3	12	..	..	48
Typhoid	2	1	..	..	..	3
PRESENT CONDITION:						
Clothing & food unsatisfactory	60	2	13	..	..	75
Lack of personal cleanliness	59	3	2	..	..	64
Susceptibility to colds	118	2	29	9	..	158
PRESENT ILLNESS:						
Direct exposure to cerebro-spinal meningitis	103	4	40	3	..	150
Exposure to overexertion, overheating	72	5	12	2	3	94
Exposure to cold	73	2	1	..	3	79
Health at onset bad	100	7	32	1	..	140
SYMPTOMS:						
Slow onset	102	5	20	..	1	128
Stiffness of neck	1,344	80	411	23	8	1,866
Vomiting	1,294	75	394	22	9	1,794
Convulsions	867	55	298	14	3	1,237
Headache	1,172	54	311	23	8	1,568
ERUPTION:						
Petechial	288	25	108	4	..	425
Herpetic	175	26	28	5	1	235
Nasal discharge	188	14	70	11	1	284
Kernig's sign—Yes	919	55	212	8	4	1,198
Kernig's sign—No	136	17	45	..	5	203
Fever—No	2	1	10	..	..	13
Leucocytosis present	180	6	26	..	..	212
COMPLICATIONS:						
Eyes	293	38	65	3	1	400
Paralysis	116	7	32	4	1	160
Ears	89	8	21	3	..	121
Pneumonia	61	3	19	1	..	84
Heart	4	1	6	..	..	11
DIAGNOSIS MADE BY LUMBAR PUNCTURE	619	23	85	1	2	730
Meningococcus present	443	15	52	1	1	512
Clinical signs	936	69	401	29	6	1,441
DEATHS:						
Coma and exhaustion	325	28	198	3	..	554
Convulsions	92	3	56	1	..	152
Pneumonia	25	2	12	..	..	39
Cause not stated	982	54	189	44	12	1,281
Died 1st day	109	4	35	3	..	151
Died 2d day	132	10	45	5	..	192
Died 3d day	114	1	30	1	1	156
Died 4th day	71	2	26	1	..	100
Died 5th day	74	3	21	2	..	100
Died 5th to 10th day	157	5	60	7	2	231
10th to 20th day	165	8	54	3	1	231
20th day and over	260	17	55	3	..	335
Not stated	342	37	120	23	8	530
RECOVERY:						
Complete	210	25	53	2	2	292
Incomplete	36	2	19	2	1	60
DATE OF RECOVERY						
1st week	8	1	..	..	1	10
2d week	27	3	7	..	..	37
3d week	43	2	10	..	..	55
4th week	56	6	10	1	..	73
5th week	135	14	26	..	..	175
Not stated	29	1	34	3	1	68
ANTITOXIN TREATMENT	259	10	44	..	..	313
Died	189	6	28	..	..	223
Recovered	70	4	16	..	..	90
Given on 1st day	5	..	..	..	..	5
Given on 2d day	8	..	1	..	..	9
Given on 3d day	7	..	1	..	..	8
Given on 4th day	4	..	2	..	..	6
Given on 5th day	1	..	1	..	..	2
Given on 5th to 10th day	7	..	1	..	..	8
10th to 20th day and over	4	..	1	..	..	5
Not stated	224	10	36	..	..	270
Death on 1st day	7	..	..	..	..	7
Death on 2d day	13	..	1	..	..	14
Death on 3d day	12	..	1	..	..	13
Death on 4th day	17	..	..	..	..	17
Death on 5th day	14	..	2	..	..	16
Death on 5th to 10th day	26	..	5	..	..	31
Death on 10th to 20th day	18	..	4	..	..	22
Death on 20th day and over	67	4	4	..	..	75
Death not stated	16	2	10	..	..	28
*Horse serum was injected in	...	..	..	..	..	8
†Injected methylene blue into spinal canal	...	..	..	..	..	1
Fumigation and disinfection ordered	236	30	85	8	..	359

* All of whom died.

† Recovered.

TABLE 5.—ORIGINAL DIAGNOSIS, CEREBROSPINAL MENINGITIS.

	Manhattan.	Bronx.	Brooklyn	Queens.	Richmond.	Totals.
PROVED TO BE:						
Tubercular meningitis	63	3	38	1	1	106
Simple meningitis	17	5	28	..	..	50
Gastroenteritis	11	..	37	..	..	48
Pneumonia	17	2	10	..	..	29
Traumatic meningitis	1	1	10	..	..	12
Septic meningitis	5	..	6	..	..	11
Doubtful cerebrospinal meningitis	6	..	3	..	..	9
Typhoid fever	2	..	1	1	..	4
Rheumatism	3	..	1	..	..	4
Traumatism	2	..	2	..	..	4
Scarlet fever	4	..	..	..	..	4
Epilepsy	3	..	..	..	..	3
Insanity	3	..	..	..	..	3
Ptomain poisoning	2	..	..	..	..	2
Rachitis	..	..	2	..	..	2
Cerebral abscess	1	..	1	..	..	2
Apoplexy	2	..	..	..	..	2
Toosillitis	1	..	1	..	..	2
Syphilitic meningitis	1	..	..	..	..	1
Cretinism	..	..	1	..	..	1
Uremia	..	..	1	..	..	1
Septicemia	1	..	..	..	..	1
Retroperitoneal fibroma	1	..	..	..	..	1
Malaria	1	..	..	..	..	1
Cerebral neoplasm	1	..	..	..	..	1
Empyema	1	..	..	..	..	1
Postoperative meningitis	1	..	..	..	..	1
Cerebral embolism	1	..	..	..	..	1
Acute indigestion	1	..	..	..	..	1
Cellulitis of foot	1	..	..	..	..	1
Cerebral edema	1	..	..	..	..	1
Chronic spinal diseases	1	..	..	..	..	1
Scorbutus	1	..	..	..	..	1
Alcoholism	1	..	..	..	..	1
Influenza	1	..	..	..	..	1
Chickenpox	1	..	..	..	..	1
Bronchitis	1	..	..	..	..	1
Hydrocephalus	1	..	..	..	..	1
Not stated	15	3	21	..	1	40
Total	176	14	163	2	2	357
Other forms of meningitis investigated	...	..	..	..	..	84
Original diagnosis confirmed	...	..	..	..	..	72
"Simple" meningitis proving to be cerebrospinal meningitis	...	..	..	..	..	10
Tuberculous meningitis proving to be cerebrospinal meningitis	...	..	..	..	..	2

REMARKS.

Sex.—The cases were divided fairly evenly into males, 55 per cent., and females, 45 per cent., the same holding good for all boroughs.

Age.—Sixty-seven per cent. of the cases occurred in children under 10 years of age, and 15 per cent. in infants under one year. Only 19 per cent. of the patients were adults, and only 1 per cent. over 50 years of age.

Nationality.—The statement that Italians are very susceptible to the disease is borne out by the fact that 15 per cent. of the patients were of that race. Excluding Americans, the Italians form 44 per cent. of the remainder. Russians came next, then Germans, and then Irish; negroes constituted only 1 per cent. and 21 of the 22 negroes lived in Manhattan.

Dwelling.—Of the patients, 76 per cent. lived in tenement houses, showing the social status in the majority of the cases. In 533 instances, (24 per cent.), it was found that the halls, areaways, or yards (one or all), or the streets in front of the houses, were dirty and insanitary. In 13 per cent. the light was bad, in 10 per cent. the ventilation was insufficient, and the plumbing insanitary. In 10 per cent. the rooms were dirty, ill-kept, and dusty. A history of the existence of parasites (fleas, etc.) was obtained in 11 per cent. and in 13 per cent. animal pets were kept. A history of other cases of cerebrospinal meningitis in the same house or neighborhood was obtained in 19 per cent. of the cases.

Previous History.—The commonest preceding disease was, of course, measles, followed by whooping cough, diphtheria and pneumonia in the order named.

Present Condition.—Clothing and food were unsatisfactory, and there was a lack of personal cleanliness in only 3 per cent. of the cases. A history of susceptibility to colds was given in 7 per cent.

Present Illness.—In only 6 per cent. of the cases had there been any direct exposure to other cases of cerebrospinal meningitis, and in only a small number was there evidence of direct transmission of the disease. Drs. Bolduan and Goodwin, of the Department of Health,[1] have investigated these multiple cases, of which they claim to have found 88 instances, including in all 200 cases. But less than 100 instances of possible transmission out of over 1,500 cases is not very weighty evidence, and in all but a few, direct transmission was only possible, not probable. In only 4 per cent. was there a history of exposure to over-exertion, and in 3 per cent. of exposure to cold. In the majority of cases, the patients were well just previous to the onset of the disease, only 6 per cent. being in bad health.

Symptoms.—In all but 5 per cent. the onset was sudden. Stiffness of the neck was the commonest symptom, being present in 85 per cent. of the cases. Closely following it came vomiting, headache and convulsions. An eruption was present in 30 per cent. of the cases, being petechial in 19 per cent. and herpetic in 11 per cent. Nasal discharge was noted in only 13 per cent. If the disease is always transmitted by the discharges, it would seem that nasal discharge should be more common. Kernig's sign, of great value in diagnosis, was absent in only 15 per cent. of the cases. Fever and leucocytosis were practically always present.

Complications.—The eyes were most frequently involved. Next came paralysis of other muscles, then otitis.

Diagnosis.—In 33 per cent. of the cases lumbar puncture was performed to confirm the diagnosis, and in 82 per cent. meningococci were found. In the remainder the diagnosis was made by clinical signs alone. Lumbar puncture was performed seven times in Manhattan to once in Brooklyn.

Cause of Death.—This was usually from coma and exhaustion. About 7 per cent. of the patients died on the first day, less than 34 per cent. during the first five days, and 39 per cent. after ten days. Of those who recovered 84 per cent. recovered completely. The majority of the patients did not recover until after the fourth week, but in ten cases (3 per cent.) recovery was stated to have taken place during the first week.

Antitoxin Cases.—Diphtheria antitoxin was used in 313 cases, of which 223 were fatal, a fatality of 71 per cent. Careful study of the individual cases failed to show any ground for believing that the antitoxin had any beneficial effect whatsoever. In most of the cases terminating in recovery, only small doses were given; and late in the disease and in only two was more than one dose given. Whereas in several of the fatal cases very large amounts of antitoxin were used. In one case 15,000 units were given every other day for two weeks—a total of 115,000 units. In other cases 60,000, 88,000, and 32,000 units were given, and in one case 24,000 units were given on the first day of the disease. One thing is shown clearly, viz., the harmlessness of diphtheria antitoxin.

Mistaken Diagnosis.—In 357 instances investigation showed the original diagnosis of cerebrospinal meningitis to have been mistaken. One-third of the cases proved to be tuberculous meningitis. The other conditions most frequently mistaken for cerebrospinal meningitis were simple meningitis, gastroenteritis and pneumonia. Of

DEPARTMENT OF HEALTH—THE CITY OF NEW YORK

COMMISSION FOR THE INVESTIGATION OF CEREBRO-SPINAL MENINGITIS

Record No. _____ Reported by _____ Address _____

Date _____ Card, Lab., Comp., Tel., Assigned _____ to _____ Returned _____

Name _____ Address _____ Floor _____ Borough _____

Age _____ M. F., Race _____ F. H., Hot., Apart., Flat, Ten., B. H., No. Families _____

Sanitary Conditions: Halls _____ Areaway _____

Yard _____ Street _____

Other cases C. S. M., in house or neighborhood _____

No. rooms occupied _____ Total air space _____ cu. ft. Ventilation _____ Light _____

Heat _____ Plumbing _____ No. in family _____ Adults _____ Children _____

General cleanliness and sanitation _____

Prevalence of dust _____

Parasites, (Fleas, B. B. Pedic.) _____ Animal Pets _____

PATIENT'S HISTORY: _____ Child, Breast, Bottle, Previous diseases, (Diphth.) _____

Pres. Health as to Throat, Nose, Ear, Mouth _____

Clothing _____ Food _____ Personal cleanliness _____

School _____ Playground _____ Workplace _____

Susceptibility to colds _____ Exposure to C. S. M. _____

Exposure to over-exertion, mental or physical, or overheating _____

Exposure to cold, damp, sudden temperature changes _____

Health at onset _____ Onset, Date _____ Character _____

Stiffness Neck _____ Headache _____ Convulsions _____ Vomiting _____

Eruption, Petechiæ, Herpes _____ Nasal Discharge _____ Kernig's Sign _____

Temperature _____

Blood: Leucocytes _____ Other Symptoms _____

Course _____

Complications, Day of Devel. _____ Eye _____ Ear _____

Pneumonia _____ Paralysis _____

Others _____

Front.

Diagnosis made by (a) Clinical Signs _____ Lumbar Puncture _____ Result _____

TREATMENT: Medical _____ Result _____

Baths, etc. _____ Result _____

Antitoxin, Horse Serum, etc. _____ Result _____

Lumbar Puncture _____ Result _____

Death on _____ day from _____

Recovery: (a) Complete on _____ day. (b) Incomplete _____

Sequelæ _____

Temp. reached normal _____ day _____

Specimens taken: Give date and where sent _____

Spinal Fluid _____ Result _____

Cultures, (Nose) (Throat) _____ Result _____

Blood _____ Result _____

Urine _____ Result _____

Opinion of Investigator as to Etiological Factors _____

AUTOPSY: Anatomical Findings _____

Bacteriological Findings _____

REMARKS: _____

Back.

Chart 3.—Case history card.

84 instances of meningitis supposed not to be the epidemic cerebrospinal form, 12, or 14 per cent., proved to be cerebrospinal meningitis.

CONCLUSION.

It will be seen that clinical investigation so far has thrown very little light on the mode of transmission of the disease, nor has any effectual mode of treatment been discovered. It is to the laboratory workers that we must look for assistance, and already new and valuable facts have been discovered regarding the meningococcus, its habitat, mode of transmission, viability, methods of identification, etc.

A very important point that has been brought out is that, in all probability, the disease is much more infectious during the first two weeks of its course. Guided by this, the Department of Health has enforced quarantine for at least the first two weeks, in all cases in which the patients remained at home the medical inspectors keeping the cases under observation, giving all necessary instructions, and ordering disinfection of the rooms and bedding on termination of the case. As a possible result of these precautions the number of deaths reported in the first nineteen weeks of 1906 have been 431 as compared with 1,300 in the same period for 1905.

SOME PARASITES INFESTING THE HUMAN INTESTINE.

DESCRIPTION, DIAGNOSIS AND TREATMENT.

JOHN RITTER, M.D., PH.G.
Clinical Assistant, Department of Chest, Throat and Nose, Rush Medical College.
CHICAGO.

Parasites which inhabit the human alimentary canal are usually described as entozoa or intestinal worms. There are about 20 different known species of the entozoa, all of which infest the alimentary canal of vertebrate animals or man. Entozoa of the order of *Cestoda* are commonly known as tapeworms, and of this particular worm about 10 different varieties have been observed and studied. They inhabit either the intestines of some vertebrate animal or man, but it is the parasite infesting the alimentary canal of man with which the physician is chiefly concerned.

DESCRIPTION AND VARIETIES.

Three species of tapeworm are of special interest to the medical practitioner and all are usually found in the upper third of the small intestines.

1. *Tænia Solium* (*Pork Tapeworm*).—This is an armed parasite, the head of which is provided with a circle of minute hooklets for the better attachment of the worm to the mucous folds of the intestines. The larval form of this particular parasite is the *Cysticercus cellulosæ*, which, if present in pork, gives the meat a peculiar spotted appearance, known as "measly pork." This tapeworm is the smallest of the three varieties, measuring, when mature, from 5 to 15 feet, and it is said that a single worm is capable of producing from 4 to 5 million of sexually ripe ova. Erroneously the specific name of *solium* (*solus, solitare, alone*) was given to this parasite, in the belief that it infested the alimentary canal of man only or alone.

2. *Tænia Saginata* or *Medio-canellata* (*Beef Tapeworm*).—This is an unarmed parasite, not provided with hooklets. The larval form of this tapeworm is the *Cysticercus bovis* found in beef. This worm is of moderate length, measuring, when matured, from 15 to 25 feet.

3. *Bothriocephalus Latus* (*Fish Tapeworm*).—This is also an unarmed parasite. It attains great length, from 25 to 30 feet.

The head of the tapeworm, when viewed with the unaided eye, appears about the size of the head of an ordinary pin. On it may be distinctly discerned four minute dark pigmented dots, which, when looked at under an ordinary magnifying glass, are seen to consist of small round discs or suckers. Immediately following the head is the slender, threadlike neck, about one inch in length, from the end of which a distinct segmentation may be observed. New joints are continually produced by budding. On close inspection it will be noticed that all segments or joints assume a distinct shape, that the younger joints are much wider than they are long and very small, but as they grow they gradually widen, and at the same time they grow very much in length, so that by the time the segments reach about the end of the first third of the worm's length the joints are distinctly quadrilateral, from which point they begin to grow in inverse order, the older and more mature segments being very much longer than they are wide and very much larger.

Tapeworms vary much in size. They grow in length from 8 or 10 to 25 or 30 feet. Stories occasionally related of patients passing a single tapeworm measuring from 60 to 80 or more feet should be accepted with a great deal of allowance, as examination of a large number of expelled worms has not verified any such lengths. I have in my possession a specimen of a mass of tapeworm passed by one of my patients which measures about 70 feet, but which, on close inspection, proves to be the remains of five distinct tapeworms, as five distinct heads are seen.

If a patient infested with a tapeworm, in whose case a positive diagnosis has been made, seeks medical advice in order to rid him of his undesirable guest, it becomes the imperative duty of the physician to administer at once such known remedies as will expel the parasite, head and body, so as to avoid more serious consequences which may follow delay. A fit of vomiting in a patient so infested may force one or more of the mature segments up into the stomach and the contents of which, by digesting such segments (should they contain ripe or mature ova), may set the ova free, and by burrowing into and through the various coats of the stomach or some other portion of the alimentary tract they may enter the circulation and be deposited in the liver, the brain or the muscular structure of the body in the larval form (*Cysticercus*), causing most serious disturbances and in extreme cases may be even fatal to life.

SYMPTOMS AND DIAGNOSIS.

The so-called subjective symptoms of the presence of the *Cestoda* infesting the alimentary canal are so variable and so unreliable that too much dependence must not be placed on such signs. However, there are certain distinct symptoms which, if present, may lead the physician to suspect the existence of intestinal worms. Subjective symptoms are usually divided into two classes, gastrointestinal and reflex.

Under the head of gastrointestinal may be chiefly mentioned colicky pains in the stomach and bowels, paroxysmal, at times more or less distress following the ingestion of food or of certain articles of food, a distended or a bloated condition of the abdomen, at other times a ravenous, inordinate or occasionally a perverted appetite, which is again followed by a great dislike for food. Constipation may alternate with diarrhea, more or less nausea or vomiting.

The reflex symptoms are usually manifested by nasal or rectal irritation, by cardiac palpitation, tinnitus aurium, dizzy or fainting spells, depression of spirits, lassitude, salivation, pains in the limbs, and various other nervous phenomena, hypochondria, convulsions, hysteria, in women often menstrual disturbances are attributable to the presence of tapeworms, and not infrequently mania.

Both gastrointestinal and reflex symptoms are only presumptive evidence of the presence of entozoa. A positive diagnosis can be made only when pieces or segments are voided or passed with the stools or pass involuntarily from the anus of the host while either walking or while at work; in fact, usually the very first intimation that the patient has of the presence of a tapeworm is when he seeks medical advice and gives a history somewhat like this: That while out walking he suddenly felt something pass out of the anus and slip down his leg and which, on examination, proves to be a single joint or segment of a parasite. This, then, is the only positive diagnostic sign.

TREATMENT.

From the earliest history of medicine to the present time various remedies and drugs have been offered and recommended for the removal of entozoa. Some are still in use; many more are obsolete. Some possess distinct anthelmintic properties and only a few are truly teniafuges. Some are used chiefly by the laity; others are prescribed by physicians only. From time to time various mixtures and decoctions have been recommended and extolled as specifics which, on careful trial, have been found utterly unreliable and worthless as teniafuges or tapeworm expellers.

A formula which a few years ago was much vaunted as a teniacide, in some quarters heralded as a specific, was a mixture of castor oil, croton oil, chloroform and fluid extract of ergot, which, with mucilage of acacia, was made into an emulsion, and a carminative was added to make the dose more palatable. This heroic dose was given in the early morning on an empty stomach, and, although its ingestion was followed by the removal of large quantities of segments and sections of tenia, it had no effect in completely expelling tapeworms.

A good remedy, although now somewhat obsolete, but occasionally used by old European practitioners, one which has decided tenifuge properties, is the black oxid of copper, given in ½ to 1 grain doses. It is especially recommended in the removal of tapeworm from children, to whom it is given in powders mixed with sugar and flavored with either oil of lemon or peppermint to suit the taste. A powder is taken every morning and evening for 8 or 10 days.

Another remedy used chiefly by the laity, and one which possesses some anthelmintic properties, is coral root (*Polypodium vulgare*). A pint decoction, prepared by taking about 2 oz. of the powdered or bruised coral root, using sufficient hot water to make one pint, is given in divided doses, half an hour apart, on an empty stomach, early in the morning, following a fast the previous day.

In some quarters crude petroleum is still in use as a somewhat efficient tapeworm remedy. It may be made into an emulsion and flavored with oil of peppermint, cinnamon or wintergreen and sweetened in order to make it palatable. The following is a desirable formula:

℞. Olei terrestris crudi.....3iv 16
Olei menthæ piperitæ.....gtt. iv
Pulveris acaciæ
Sacchari albi, āā.....3iv 16
Aquæ q. s. ad.....℥iv 120

M. Ft. emulsio. Sig.: A few teaspoonfuls of this emulsion every morning for eight days.

Oil of turpentine, given either on sugar or in form of an emulsion, has also some advocates, and is an efficient remedy. An emulsion may be prepared as follows:

℞. Olei terebinthinæ rectificati puri.....3ii 8
Olei ricini.....℥i 30
Pulveris acaciæ
Sacchari albi, āā.....℥i 30
Aquæ cinnamomi q. s. ad.....℥vi 180

M. Ft. emulsio. Sig.: Take in the morning, in two doses.

This is taken in the morning in two doses in intervals of one hour.

Another emulsion (*Emulsio pepo*), one which is very efficient and popular with the laity, is prepared from pumpkin seed. This emulsion is best prepared by removing the outer inert shell of the pumpkin seed and pounding, bruising or triturating about two ounces of the inner kernel into a pulpy mass, gradually, in small quantities at each time, adding water until a milky mixture is obtained, then strain through a cloth, press and pour on the mass sufficient water to make a pint. This emulsion is given in two doses early in the morning in intervals of one hour on an empty stomach. The patient is required to fast the previous day in order to "make the worm hungry," as the popular saying is.

These remedies all possess some anthelmintic properties, are all occasionally used and with fairly good success, but can not always be relied on for the complete removal of tapeworms. Remedies of more decided and positive tenifuge properties are the following, and in the order given their value increases as tapeworm expellers.

Kousso or *Kosso.*—The powder of the flowers of *Brayera anthelmintica,* a plant indigenous to eastern Abyssinia, is given in doses of 2 to 4 drams either in infusion, decoction or mixed with some black coffee. It is a most effective tapeworm expeller.

Kamala (*Powdered*).—The powder of the small glands enveloping the fruit of *Rottlera tinctoria,* a tree indigenous to China, Malabar and Philippine Islands, is given in doses of 1 to 2 drams in milk, coffee or coca. It is one of the most reliable of the teniacides, but has this decided disadvantage, that if given to some patients it induces most severe and violent emesis.

Pomegranate Bark.—The bark of the root of *Punica granatum,* a shrub indiginous to the countries bordering on the Mediterranean sea, is next in importance as an entozoa expeller. A decoction prepared from the fresh, dried bark by, taking 2 oz. of the coarsely powdered drug, macerating it in tepid water for about 12 hours, gently boiling, straining and adding sufficient water to make about one pint. This is given in 3 doses in intervals of half an hour in the morning on an empty stomach. A cathartic drug should be administered the evening before.

Pelletierinæ Tannas or *Punica Tannas.*—This is a tannate of the mixed alkaloids obtained from pomegranate bark and is of most decided efficiency and reliability as a parasiticide. It may be given in doses of from 2 to 5 or more grains.

Pelletierinæ Tannas is now official, being one of the newer remedies added to the Pharmacopeia, 1900.

Ethereal Extract or *Oleoresin of Male Fern.*—This

is an extract or oil prepared from the rhizome and rootlets of *Nephrodium, Polypodium, Polystichum, Aspidium filix mas,* a plant indigenous to Europe, and is the most efficient of all reputed teniafuges. In the writings of former therapeutists, as well as of those of the present time, oleoresin of male fern has always held the foremost rank as a tapeworm expeller. Its administration either in capsules, mixtures or emulsions is usually followed by very little, if any, depressing effects and it undoubtedly is the most efficient, reliable and trustworthy of the whole list of anthelmintics. It is usually given in doses varying from 10 drops to a dram or more.

All the various tapeworm-expelling remedies enumerated above are administered either singly or in combination in mixtures, capsules, cachets, emulsions or in any form whatsoever. It is usually required that the patient must abstain from taking food or must take food but moderately for at least one day preceding the taking of the teniafuge, or that the evening meal should consist of such articles of food as sour or pickled herring or fish, stale bread and a glass of water, in order to "make the worm hungry," as the saying is.

THE RATIONAL METHOD.

I have had a large and extended experience in the treatment of patients suffering from tapeworm, and in not a single instance have I failed to expel the undesirable guest, head and all, if the following instructions were closely observed.

As a rule, I do not ask the unfortunate sufferer either to fast or to subsist on certain articles of diet. Fasting is wholly unnecessary, illogical, and no valid reason can be given therefor, as the worm can be expelled without much difficulty either while the patient fasts or freely partakes of food. On the contrary, the patient should be asked to eat a full dinner in the evening, and he should be fully prepared to eat an equally hearty meal in the morning. Between these two meals the unwelcome visitor takes his departure. Begin the treatment by giving the patient, on retiring, an ordinary cathartic capsule or pill somewhat like the following:

℞.	Hydrargyri chloridi mitis............	gr. ii	13
	Extracti colocynthidis compositus		
	Extracti cascara sagradæ, āā........	gr. iv	26
	Pulveris jalapæ......................	gr. vi	39

M. Ft. capsulæ No. iii. Sig.: Take all three capsules at bedtime, making one dose.

It is most desirable to procure good evacuation of the bowels before giving the tapeworm remedy, and in order to obtain ... the formula above given may be varied to suit each indiv...ual case. Should the patient's bowels be unusually obs...nate, the cathartic action may be somewhat increased and correspondingly decreased if the bowels are easily e...acuated. Early the next morning and after the bowels a... well emptied give the following teniafuge:

℞.	Resinæ podophyllini.			
	Oleoresini filicis maris..............	gr. i		06
	Extracti fluidi kamalæ..............	ʒiss	6	
	Spiritus chloroformi	ʒiii	12	
	Mucilago acaciæ	ʒi	4	
	Aquæ menthæ piperitæ	℥i	30	
	... ad........	℥iii	90	

M. Ft. emulsio. Sig.: Take... three equal doses at intervals of half an hour.

A swallow of coffee or wa... water and whisky may be take... milk or a little warm ...after each dose. A very much more pleasant way for ... of a'ministering the above teniafuge is in the form ...le prepared as follows: Put the 3 drams of fluid extract of kamala into a small evaporating dish and over a water bath evaporate the extract to the consistency of a thick syrup; then add the grain of resin of podophyllin and, lastly, while still slightly warm, add the 1½ drams of oleoresin of male fern; thoroughly incorporate all and fill into empty capsules, making either 9 or 12 capsules, and of this number give either 3 or 4 in intervals of half an hour. The above quantity fills about nine No. 0 capsules of standard size or twelve of No. 1.

From the time that the teniafuge is administered all evacuations of the bowels should be passed into a commode about half filled with tepid water so as to secure the parasite for examination. After careful and repeated washings, by repeatedly pouring water into the commode until it is nearly full, allowing all heavy particles to subside, then decanting the supernatant fluid, the mass of the worm will be found at the bottom, head and all. Examine the mass carefully for the head, which is usually attached to the finest or thread-like section of the worm, generally to a piece from half a foot to one and a half feet in length.

170 Colorado Avenue.

PRELIMINARY REPORT OF THE TREATMENT OF IDIOPATHIC EPILEPSY BY APPENDICOSTOMY FOR COLONIC IRRIGATION.*

ERNEST LAPLACE, M.D.
Professor of Surgery, Medico-Chirurgical College.
PHILADELPHIA, PA.

Epilepsy is but a symptom revealing some irritation of the general nervous system. It has been aptly divided for purposes of classification into traumatic and idiopathic. In traumatic epilepsy, the cause is evident. Pressure from bone, foreign body, or blood clot is the source which so irritates the brain as to interfere materially with the normal distribution of nerve force through the body.

Certain chemical substances have a distinct affinity for the cortical cells of the brain and cord and, as a result, excite them. Among the alkaloids, strychnin is prominent. Among toxins resulting from infection, the poison of tetanus and hydrophobia afford us similar examples. These toxins generated in the body under the influence of the developing pathogenic organism finally accumulate to such an extent as to produce a violent action on the cerebrospinal system, followed by contractions of the muscular system characteristic of these diseases. Very similar is the reaction of strychnin, which, if given in sufficient doses, will produce analogous muscular contraction.

One of the curious phenomena attending the physiologic action of drugs is the tendency of some, such as digitalis, to accumulate in the body until a certain amount has been taken, and then the physiologic action of the accumulated doses is manifested. This is known as the cumulative action of a drug.

Is it not possible that some such cumulative manifestation of a toxin as a result of the intoxication from improper food or tissue metabolism may be at the bottom of the spasmodic and periodic manifestations known as idiopathic epilepsy?

In early childhood, spasms are known to be due to

* Read before the Philadelphia Medical Society, May 23, 1906. Patient was exhibited to the society.

improper digestion, or irritation of a foreign body, or the presence of worms. Epileptic patients are generally afflicted with some intestinal disorder. They suffer at least from chronic and habitual constipation. They complain of multiform digestive symptoms indicative of imperfect metabolism, but at the same time so obscure as to give no decided clue as to what the imperfect transformations of food may be.

At present most of those who have given special attention to this class of cases agree that the chief element in the rational treatment of these patients is an intelligent diet; based on restriction of food, its simplicity and predigestion.

The antispasmodics as remedial measures have had a fair trial. These drugs are good for awhile, but they do not give permanent relief; nor do they in any way reach the etiologic factor by tending to remove or control the cause of epilepsy.

FUNCTION OF THE COLON.

Metchnikoff, in his work, "The Nature of Man," says that from a standpoint of anthropology the colon is a receptacle for refuse undigested matter; that human life could be sustained in a purer and more physiologic state without its presence. Sufficient digestive function is performed by the stomach and small intestine; sufficient absorption for the sustenance of the body takes place from these regions; and hence, as a matter of fact, the whole length of the colon could be dispensed with so far as our physiologic necessities are concerned.

In performing surgical operations on the intestinal tract I have often noticed that the character of the intestinal contents becomes really fetid only past the ileocecal valve. When the intestinal contents have passed into the colon, however, the digestive processes are almost completed, and a process of absorption on the part of the colon takes place rather than of further digestion.

The colon fulfills an economic purpose in removing, so far as possible, from the refuse products all the nourishing elements which may still remain. In order to achieve this result, however, the intestinal contents have a long road to travel and may be retained a long time before they are finally expelled. It is during this period of inactivity and comparative quiescence of the contents of the colon that the micro-organisms which normally inhabit the colon have full sway. They develop and produce putrid gases and toxic changes in the albuminoids so complex as to escape the analysis of the chemist.

POSTOPERATIVE CONSTIPATION.

What surgeon does not know the harmful effects of constipation after a surgical operation? The general depression of the patient, rapidity of pulse and elevation of temperature? What physician has not relieved a most obscure form of indisposition by the proper correction of habits of constipation, thereby removing the autointoxication? The power of absorption of the rectum and colon is remarkable. I have nourished a patient exclusively by rectum during a period of seven weeks. This fact illustrates the possibility of absorption on the part of the rectum, which presents the same power of absorption on whatever fecal matter passes through it.

TREATMENT.

With this source of poison as a possible cause, and its cumulative action in certain human bodies, I have thought that it could be a sufficient etiologic factor in some cases for the sudden spasmodic manifestations which are called epilepsy. It would follow, therefore, that any method by which this poison should be either destroyed or its absorption prevented would contribute toward lessening the nature and frequency of epileptic attacks. With this in view, I have performed appendicostomy, creating an artificial fistula at the beginning of the colon. I direct the patient to flush out his colon with two gallons of warm water, morning and night. The patient, in a recumbent position, introduces the nozzle of the irrigator into an ordinary catheter, which, in its turn, is passed down through the appendiceal fistula into the colon. The water is allowed to flow and is received into a bed pan on which the patient lies This copious irrigation does not seem to affect materially the patient's nutrition. His appetite improves, while a sense of well-being gives him a brighter and more cheerful appearance. The irrigation is not accompanied by pain, and the patient soon becomes so skilled in its use as to require no assistance whenever the indication exists.

Patient.—The first patient on whom this method was tried was a man, L. A. S., aged 23, a sufferer from epilepsy since the age of 16, with attacks every week at first, finally as often as three times a day, losing consciousness about one hour each time. He was sent by Dr. C. S. Ruch of Lehighton, Pa.

Operation.—The operation was performed in the Medico-Chirurgical Hospital, July 1, 1904, and the irrigations were begun July 5. He had a violent epileptic attack on the day after the operation.

Postoperative History.—The irrigations were taken systematically twice daily and continued for three months. Then he took but one irrigation three times a week for three months; then one irrigation a week for three months. He has not taken any irrigation since May, 1905, and from the day of the first irrigation until the present time he has never had another attack. He has gained 20 pounds, has returned to work, and feels absolutely well.

CONCLUSIONS.

This and four other cases of a similar nature—not operated on sufficiently long enough to be reported in full, but giving ample encouragement for the continuance of the treatment—should afford sufficient reason for considering this method. The treatment is harmless, based on sufficiently sound theoretical and scientific grounds; and even should improvement not result to the epilepsy it can not fail to do good from a hygienic standpoint in affording general relief from the constipation to which most sufferers from epilepsy are subject.

The repeated flushings of the colon keep it as nearly empty as possible and almost eliminate its presence as a reservoir for undigested and putrefying substances. At all events, although there is a constant flow of intestinal contents from the ileocecal valve, the repeated flushings do not allow these substances sufficient time to serve as a culture medium for the hoards of bacteria present, and hence reduce to a minimum the possible production of obnoxious toxins so liable to be reabsorbed into the system. Fear of a permanent artificial opening into the intestine should not be entertained. It is a matter of the greatest ease to allow the artificial fistula to close; and, after months of treatment, should one desire to discontinue the flushings of the colon, the natural processes of evacuation are resumed without difficulty.

Let it be distinctly understood that we have no reason to expect that all cases of idiopathic epilepsy will improve under this method of treatment; but only those whose existence can be traced to this particular cause. The procedure here advocated should be accompanied by the proper dietetic measures usually resorted to in the treatment of these cases.

ACETANILID POISONING FROM THE USE OF PROPRIETARY HEADACHE POWDERS.*

A. E. AUSTIN, M.D., AND
R. C. LARRABEE, M.D.
BOSTON.

The use of "patent medicines" by the laity has grown to such proportions that it has come to be looked on by physicians as a necessary evil. Many such medicines are inert, in which case their deleterious influence is exerted chiefly on the pocket of the purchaser. Unfortunately, patent medicines containing potent drugs are often sold without the slightest warning concerning excessive doses, and the experienced physician who has not seen injurious effects from them is either hopelessly blind or hopelessly prejudiced. Warnings against overdoses are rarely seen on the labels of such remedies, for the reason that the public would take alarm and the sale be diminished.

No class of remedies is subject to more abuse than the so-called headache cures. In no class is caution more needed, for the chief ingredient is almost always acetanilid. The reason for the wide use of this drug is easily seen when it is noted that the remedy used in the two cases herewith reported costs 25 cents for a box of ten powders, each containing about four grains of acetanilid, or about four grains of acetanilid and about a grain of camphor. Acetanilid may be bought by any one for 40 cents a pound and camphor is high at $1.25 a pound.

The symptoms of acetanilid poisoning need not be given in detail here, but we may say in brief that cases fall into two classes. In acute cases due to single doses the chief phenomena noted are those of collapse and circulatory depression, coldness of the skin, sweating, palpitations, disturbances of the pulse, superficial breathing, cyanosis, dullness of intellect or total unconsciousness, followed in case of recovery by persistent muscular weakness. In cases in which doses too small to produce these effects are taken for a considerable period of time, susceptible persons may show extreme cyanosis, with very little evidence of injury to the circulatory apparatus. In both forms, particularly in the more chronic ones characterized by severe cyanosis, there is a most disastrous effect on the red corpuscles. Their hemoglobin is in part converted into methemoglobin and thus rendered incapable of performing its function of carrying oxygen. The destruction of red corpuscles may result in an anemia of a most severe type.

It is a common practice to "guard" the action of acetanilid in headache powders by the addition of substances like camphor or caffein designed to act as cardiac stimulants. It is conceivable that they might have some effect in preventing the acute collapse, but it is difficult to see how they could have the slightest effect in preventing the conversion of hemoglobin to methemoglobin.

Our attention was called to this subject by two cases, in both of which the popular remedy "Nervease" had been taken for the cure of headache, and which are reported in full as follows. The first occurred in the service of Dr. Larrabee:

CASE I.—A married woman of 43 was seen in the out-patient department of the Boston City Hospital. She gave a long history of aural sepsis, beginning at the age of 6 years. She had suffered from occipital headaches as long as she could remember. In 1901 these became much worse and in 1903 she came to the hospital complaining of this symptom and of vomiting and constipation. Notes made at the time record a palpable enlargement of the spleen and enlargements of the lymph nodes in the neck and left axilla. There was a moderate leucocytosis and the hemoglobin was 60 per cent. The glands afterward suppurated. They were probably the result of the aural disease. Shortly after, Dr. G. A. Leland operated for mastoid necrosis. Though the operation was successful and recovery was prompt the headaches were not wholly relieved.

In January, 1905, two years later, she returned to the hospital. For years she had been taking a proprietary headache powder sold under the name of "Nervease"—often as many as six powders a day, and sometimes even a whole box of ten. At first these gave relief to the pain, but for three weeks the headache had been unusually severe and there had been some nausea. The urine had been red in color and there was slight dyspnea—not enough to be at all disabling. She knew she was blue, but the fact had not appealed to her as indicating anything out of the way. Her appearance on the cold day when she first presented herself for treatment was most astonishing. The color was a deep, dusky blue. The lips and nails were at times almost black. In spite of this her general condition was perfectly good and there was no evidence of dyspnea or suffering. The pulse and respirations were not increased in rapidity. Apart from an easily palpable spleen, nothing further was found on physical examination. Dr. Leland examined her ears and reported that no active disease was present.

The blood was almost black as it flowed from the ear, and when spread on the filter paper the color was such that the hemoglobin could not be estimated by the Tallquist method. The specific gravity by the method of Hammerschlag was 1052 corresponding to a hemoglobin percentage of 70. Red corpuscles, 3,168,000. White corpuscles, 6,400. A differential count of 500 white corpuscles resulted as follows:

	Per cent.
Polymorphonuclear neutrophiles	75.6
Small mononuclear basophiles (lymphocytes)	19.0
Large basophiles (large mononuclear and transitionals)	4.8
Eosinophiles	0
Mast cells	0.4
Myelocytes	0.2

During this count one nucleated red was seen, a normoblast. There was slight polychromatophilia and rare basic stippling. The reds varied much in size and shape. Many were broken and distorted. There was moderate achromia and the hemoglobin appeared unusually irregular in its distribution within the cells. There were no parasites. No abnormalities were noted in the platelets.

Spectroscopic examination of the blood showed methemoglobin.

The urine was normal except for an excess of urobilin; it contained no hemoglobin, methemoglobin nor hematoporphyrin.

She was directed to stop taking the powders and potassium bromid was given instead. She was also given a capsule containing five grains of mass of ferrous carbonate and one-sixth of a grain of extract of nux vomica, three times daily. Also ten grains of potassium iodid three times daily. Three weeks later there was little or no cyanosis or headache. The color of the blood was normal.

Nearly a year later she returned to the clinic, stating that for several months the headaches had again become severe and that she had had pain and swelling in the left ear. For a fortnight she had been using "Nervease" again, never more than two powders daily. The cyanosis had promptly returned, but, save for slight dyspnea, no other unfavorable symptom had accompanied it. The ear was examined by Dr. Leland, who found no active disease. The skin showed the same blue color as before, but to a much slighter degree. The spleen was enlarged.

The hemoglobin could not be estimated by the older colorimetric methods for the same reason as before. By the Sahli test there was no difficulty, the percentage being 81. Red corpuscles, 3,808,000. White corpuscles, 10,500. A differential count of 500 white corpuscles resulted as follows:

	Per cent.
Polymorphonuclear neutrophiles	72.6
Small mononuclear basophiles (lymphocytes)	22.0
Large basophiles (large mononuclears and transitionals)	4.8
Eosinophiles	0
Mast cells	1.4

There were no nucleated reds. The qualitative changes were

* From the Medical Chemistry Laboratory of Tufts College.

about the same as before, but decidedly less severe. The spectroscope again showed methemoglobinemia.

The second case occurred in the practice of Dr. John Warren Achorn:

CASE 2.—The patient, a female, unmarried, dressmaker, complained of headache on the top of her head for which she had been taking six "Nervease" powders daily. She complained of loss of energy and nausea, though she had not vomited. She also said that the night before coming under observation she had taken the contents of one box or ten powders. The patient was livid with dark blue nails. The pulse was tense and hard. The blood contained methemoglobin. The red blood corpuscles amounted to 3,991,000, the whites to 9,855. Hemoglobin could not be estimated by the common color tests on account of the peculiar chocolate shade of the blood. A differential count of 200 leucocytes showed:

	Per cent.
Polymorphonuclear neutrophiles	62.5
Small mononuclear basophiles	19.0
Large basophiles	15.0
Eosinophiles	3.5
Mast cells	0
Myelocytes	0

A very few granular red corpuscles were found.

The use of the powders was stopped and the patient rapidly regained her health.

As the symptoms of both these cases were plainly attributable to the "Nervease," our next efforts were directed to the determination of the character of the deleterious ingredients in the remedy. Samples from two boxes were analyzed, the first bought Jan. 14, 1905, the second Jan. 31, 1906. The powders weigh approximately 0.5 gram; the substance is pink in color with small glistening granules scattered through it, and has a pungent taste. It is but slightly soluble in water. This description applies only to the powders purchased in January, 1905; those bought in January, 1906, have camphor added, which is discernible not only by odor but by chemical tests. On heating with hydrochloric acid and the subsequent addition of phenol and hypochlorite of calcium, both samples gave a red color, which subsequently changed to blue on the addition of ammonia. This is a positive test for acetanilid. A powder of each was then extracted with water acidulated with hydrochloric acid, which separated it from the camphor in the second box, and the solution extracted with chloroform, which was then evaporated and the residue weighed. It was absolutely colorless and showed nothing but glistening crystals.

The average of two determinations of the acetanilid in this manner gave 0.281 gram, the difference between the samples purchased in 1905 and in 1906 being inconsiderable. As the dose is given as from 0.2 to 0.8 gram, with the maximum for twenty-four hours 1.3 grams, we can plainly see that the second patient, according to this, was taking 1.686 grams daily, and in one night had taken 2.81 grams of this substance. Yet in the circular accompanying the box we read: "Contains no opiate and is *perfectly harmless.*" The camphor in the second sample was extracted from the residue from which the acetanilid had been removed with alcohol and found to amount to 0.075 gram. The ordinary dose of camphor is from 0.13 to 0.65 gram, with a maximum daily amount of 1.3 gram, so that the danger from camphor is not great.

The lesson is that drugs of this dangerous character should not be dispensed except on a physician's prescription, and their sale should be as strictly guarded as is that of strychnia or aconite. The use of a danger label would throw the responsibility of an overdose wholly on the patient. The German government limits the character of the ingredients which may enter a headache powder openly sold to the public to harmless substances, like bicarbonate of soda and caffein, and it seems that the time has arrived when this country should do likewise. The least that can be demanded of manufacturers of nostrums is that they state plainly on the label the ingredients of their preparation and the amount of each. Surely they should not be permitted to label "perfectly harmless" a box of powders containing a drug so powerful for harm as acetanilid.

A SIMPLIFICATION OF THE USUAL TECHNIC OF SKIN GRAFTING.*

JOHN EGERTON CANNADAY, M.D.
PAINT CREEK, W. VA.

In several forms of minor surgical work considerable satisfaction is obtainable even when comparatively careless methods are pursued. However, in the particular field of this subject a minutely planned and carefully carried out technic is essential to a successful issue.

The need for repairs to the epithelial covering may arise from the following causes: deep burns, lacerated wounds, the sloughing of flaps, gangrene from frost bite and other causes, varicose and other ulcers, the correction of deformities and the excision of malignant growths. Bared areas can only cover themselves by the reproduction of epithelium around the edges. After a varying length of time, dependent somewhat on the individual case, this border-line epithelium becomes apparently entirely exhausted and ceases to reproduce itself further. Then Nature must be assisted. Indeed, it is not usually best to wait until she has thrown up the sponge.

Unless the denuded area is quite large, it is usually most convenient to take the grafts from the individual needing them. Inasmuch as molecular life persists for some time after somatic death, one can often get about a hospital a suitable material from amputations and other operations. The skin and underlying tissue can be kept in warm normal saline solution for several hours until needed. The skin of the white when grafted on to the negro in time assumes the coloring of its host, and the reverse obtains when the skin of the black is transplanted to the white. Frogs, chickens and pigs have loaned their integument to man with very good grace. Once I grafted skin from a common water lizard on the foot of an Italian with a fair measure of success. The skin of the anterior portion of the arm or thigh is of suitable character for this work and from its location is very accessible. Especially when the defect to be covered is on a limb it is usually advantageous to take the grafts from a nearby location.

Among the many methods in vogue for securing a clean granulating site I have found the bi-daily wet dressing of gauze (wet with chloral hydrate, grs. ii to the ounce of water) kept covered with oiled silk to be satisfactory.

In my work I use the Thiersch graft. I have the part from which the shavings are to be taken carefully cleansed with liquid antiseptic soap, gauze pad, warm sterile water and alcohol. The granulations are irrigated with hot saline solution and the surface is freshened by a very gentle rubbing with an ordinary sterile nail brush. This freshens the granulations without destroying them. Some time since I abandoned the curette for this purpose. With it smooth and even freshening is an impossibility. It tears off the granulations *in toto* and leaves an irregular surface having an

* Read before the Kanawha Medical Society, Charleston, W. Va., Feb. 20, 1906.

insufficient vascular supply for the securing of certain takes. The freshening of the surface by gentle rubbing with a gauze pad, as suggested by Lauenstein, I have tried in several cases; where the granulations are comparatively tender this method is quite effective, but if the granulations are firm I always resort to the use of the nail brush. Hot saline solution and pressure quickly control the slight hemorrhage. A sharp aseptic metal-handled razor should be used. The skin of the part from which the grafts are to be taken is made tense by grasping with the hand. The grafts are sliced off by sawing movements of the razor. I try to have them half the thickness of the skin, half an inch wide and one and one-half inches long, that size being convenient to handle and satisfactory for most cases. As soon as a graft is severed it is turned over the end of the left index finger, skin side next to the finger, carried directly to the denuded site and pressed down on the surface with the finger, a small probe serves to smooth and straighten it out in the position in which it is desired to remain. This process is repeated until the bare area is covered. By the direct transference of the skin strips you will be able to cut them more nearly in proper size, shape and number and the proportion of takes will be larger. I have the surface from which the grafts are taken, dry and transfer them without the intervention of any saline or other solution, which, I believe, only serves the purpose of rendering a delicate piece of work more difficult.

I cover the grafted site with thin dental rubber dam, criss-crossed for drainage if the area is large. I place a small gauze pad over this, securely anchor it on all sides with narrow strips of zinc oxid adhesive plaster to prevent the displacement of the grafts and apply externally a cotton, gauze and bandage dressing. Frequently it will be well to apply a splint or to encase the part in plaster-of-Paris to secure immobilization. In case the grafted locality is on a limb I have it placed on a level with the rest of the body or slightly elevated. A slight degree of pressure will keep the grafts in contact with the part, prevent serum from collecting between the graft and the wound and prevent bleeding. Too much pressure will promptly kill the grafts.

At one time we were taught to keep our skin graft dressings wet with physiologic saline solution. Being valuable for some things, it was supposed to be useful for everything. I discontinued it as being exceedingly troublesome and totally devoid of value for this purpose and began using sterile vaselin and petrolatum as lubricants to prevent the dressings from becoming adherent. Later I adopted the plain dry dressing previously described and have used it for some time without having cause for regret. It possesses the advantages of simplicity and neatness. It lessens the trouble of after care. If the dressing should become adherent it can be easily loosened by soaking it in warm water and removed without disturbing the new epithelium. Ordinarily I leave the first dressing on for a week, and after that the wound often requires but little care. Pus infection in these cases is almost fatal to success and must be guarded against.

I have practiced my method in twenty-three cases without a single complete failure. I have used it principally in the repair of defects caused by burns and lacerated wounds.

In conclusion, I desire to emphasize the advantages of the direct transference of grafts; the substitution of the nail brush for the curette, and the superiority of the dry dressing moored in place by adhesive strips.

THE RATIONAL TREATMENT OF URETHRITIS.*

NOAH E. ARONSTAM, M.D.

Professor of Dermatology in the Michigan College of Medicine and Surgery.

DETROIT.

The rational treatment of this affection depends on the etiologic factors that are responsible for its causation. The non-specific forms demand an entirely different regimen than the specific variety. We must endeavor in all cases to eliminate the cause so far as possible. To dwell at length on the treatment of the various types of the malady under discussion would require more time and space than has been allotted to me. Suffice to state, however, that urethritis dependent on certain dyscrasiæ and diatheses must receive their adequate consideration before we can expect favorable results. To treat any given case of urethritis merely with a hand injection and the internal exhibition of some nondescript "urinary antiseptic," without having recourse to physical, urinary and microscopic examination, if necessary, is just as absurd as to treat the symptoms of a febrile disorder, without taking cognizance of the specific elements which may have precipitated the fever.

Of greater interest to the physician, however, is the treatment of the *gonococcic type* of the disease. Concerning the so-called "aborative plan" the author has nothing good to say. It is an inappropriate procedure and should be condemned by every scientific physician. To destroy the gonococci would necessitate the use of powerful germicidal agents, which undoubtedly injure the intact urethral mucosa and hence are conducive not only to increased suffering, but also to appreciable solutions of continuity therein, damage the canal permanently and eventuate in stricture formation. Its irrationality is apparent at a glance and need not be dilated on. The conservative school of the profession advocates the "expectant plan" of treatment, contending that a gonococcic urethritis is a self-limited affection, uninfluenced by interference of any kind. This is a very reprehensible conception of the real pathology of the malady, is far from scientific and may at times lead to unfavorable sequelæ and not infrequently prolong the duration of the disease indefinitely. This plan is of doubtful propriety and deserves to be ignored as an irrational mode of treatment. Not less reprehensible and still more ridiculous are the remedies in vogue at present, obsolete and obscure methods that have come down to us as a heritage of barbarism or witchcraft from the latter part of the medieval past. I can not refrain from disparaging their employment and shall prove the inefficiency of their highly vaulted therapeutic activity. Their name is legion and to enumerate them all would require a special chapter to be written in the histories of medicine now extant. Prominently among them figure the "alkaline diuretics." The theory is pretty much prevalent, that alkalies, when ingested are absorbed into the circulation and neutralize the normal urine by rendering it alkaline, thus alleviating pain and ardor urinæ, two harrassing symptoms of the acute stage of this disease, simultaneously acting as mild urinary antiseptics. This theory contains much that is futile. When alkalies are absorbed, their identity is completely destroyed as far as the acid radicle is concerned; they are ultimately converted into normal chlorids or salines and not carbon-

* Read before the Wayne County (Mich.) Medical Society, Feb. 26, 1906.

ates, which are known to possess diuretic properties; it is only by the latter virtue that they exercise a beneficial effect on the inflamed urethra, not, however, primarily as alkalies, but as diluents and diuretics. This assertion may not conform to established orthodox doctrines or theories pertaining to this particular phase of the subject, and I, therefore, anticipate being relentlessly criticised for it.

The therapeutic value of boric acid and salol, either alone or in combination which are administered thoughtlessly as a routine measure, with the expectation of disinfecting the urethral tract, is likewise doubtful. The various balsamics, as copaiba, santal oil, gurjun and the oleoresin of cubeb, must be mentioned in order to be condemned not alone as nauseating and repugnant substances, but utterly devoid of benefit in this disease. It is unreasonable to believe that a drug ingested and acted on by the different digestive ferments and fluids found in the gastrointestinal canal, after being absorbed in a modified and chemically altered form, and after being oxidized and in turn converted into simpler products, should act as efficaciously on the urinary passages, as *in vitro* in the chemical and bacteriologic laboratories. The presumably beneficial effects of those remedies as witnessed in practice, are not due to their inherent specific properties, but rather to the intake of large draughts of water proverbially following these antiblennorrhagics, which act not merely as a diuretic, but also as a detergent and diluent, thus allaying painful urination, mitigating as the urinary tenesmus and indirectly acting as a mild antiseptic by virtue of the saline constituents it usually contains.

TREATMENT OF ACUTE STAGE.

The most rational method of treatment of the acute stage of gonococcic urethritis is irrigation, as first introduced by Janet, of France, and extensively used and elaborated in this country by Dr. F. Valentine, of New York. I have, however, utilized a procedure, which for lack of an adequate terminology I have designated the modified Valentine's treatment, and which I will attempt to outline in the subjoined paragraphs. With this method the average duration of an acute urethritis should not exceed three weeks, provided the patient presents himself for treatment within the first three or four days after the entrance of the acute manifestations and his urethra has not been impaired by the previous existence of the same trouble, i. e., provided the patient has contracted this affection for the first time. Recurrent attacks of this disease render it less amenable to this form of treatment and may prove very intractable.

The patient is told to drink plenty of water, and if he be fastidious, he may partake of some of the so-called mineral waters with which the market is teeming, or he may use some of the mildly acidulous beverages, which are abundantly dispensed in confectionaries. All alcoholic and malt beverages must be interdicted, as well as tea and coffee. Condiments of any sort, highly seasoned dishes and nitrogenous foods must be temporarily avoided. Soups are too stimulating and should be taken of sparingly. The anterior urethra is flushed with a normal saline solution by means of the Valentine douche or a similarly devised apparatus with a good valve attachment to regulate the flow. Not more than three pounds pressure should be allowed, or what is the same, the apparatus should not be elevated higher than six feet. A soft rubber catheter encircles loosely the root of the penis, or what is preferable, the fingers of the left hand of the operator gently press the penis at its root, while the right hand manipulates the valve. The latter should be of such a construction so as effectively to regulate the current, which should be continuous and slow. The slight constriction of the root of the penis prevents the fluid from passing the corresponding portion of the urethra and being propelled into the deeper portions of the canal, a very undesirable feature which should be zealously guarded against. The infectious agent during the acute stage is confined to the first two or three inches of the urethra. By allowing a steady stream of normal saline solution to come in contact with the mucosa for about four or five minutes, it not only frees it from detritus and quantities of accumulated pus, but greater resistance is imparted to the cell as well, preventing the extension of the process and at the same time acting as a mild disinfectant. Thus affected, the meatus is dried and 20 minims of a solution of adrenalin (1:1000) is instilled through an ordinary bulb eye-dropper into the canal; the meatus is then compressed and the solution kept there for at least five minutes, after which it is permitted to escape. The suprarenal principle constricts the superficial capillaries and thus removes a prolific source of supply of the pabulum necessary for the multiplication and maintenance of the gonococci, which readily succumb for want of nourishment. Four results are thus achieved with the modified Valentine's treatment, viz.:

1. The removal from the urethra of muco-pus, epithelial débris, etc.
2. Astringent action; constriction of the peripheral vessels and the shutting off of a nutritive supply to the infecting agent.
3. By so doing it acts indirectly as a disinfectant to the urethra.
4. The duration of the affection is decidedly curtailed without endangering the integrity of the urethra.

The effects of the above procedure are very satisfactory, as the discharge is manifestly lessened after a few irrigations, the patient expressing relief from all annoying symptoms. The saline irrigations are continued daily, or what is still better, twice a day, if possible, for ten days, after which period potassium permanganate is substituted in ascending strength, beginning with 1:10,000 and increasing to 1:1,000 by the end of the third week. It will then be noticed that the discharge has come to a standstill and the urethra has been restored to the normal. If there is still a slight serous secretion at times evident at the meatus, we may resort to a prescription composed of zinc sulphate, adrenalin (1:1,000) and colorless fluid extract of hydrastis in distilled water, which, in a short time, will check it completely. Three weeks suffice in the majority of instances to effect a cure, while in favorable cases the disease is brought to an end in ten to fourteen days. This time factor alone bespeaks the advantage of the above treatment as compared with that practiced formerly in a loose, haphazard and empirical manner, when the prognosis as to the time was considered to be from six to eight weeks. This method then has the advantage over the older forms of therapy, that it shortens the duration of the affection, as evidenced by a number of cases on my record book. Specific or gonococcic urethritis under the aforementioned regimen is, therefore, a limitable and abortive disease, and the regimen does not tend to undermine the integrity of the urethral canal, as is commonly the rule with the caustic remedies in vogue during the last two decades, and still used by some under a mistaken conception of the pathology of this disease.

TREATMENT OF THE CHRONIC FORM.

The treatment of the chronic form is more difficult, tedious and complicated than the acute variety, and requires perseverance and patience on part of both physician and patient. Various solutions for injection have been advised, among them the vegetable compounds of silver, alone or in combination with ichthyol and suprarenal principle, either as a hand injection, or, what is still better, applied by the physician himself. We should make it an axiom not to entrust to our patients any mechanical or instrumental method, be it ever so simple. An injection fluid which has found favor with me is a solution of protargol (5 per cent.) together with adrenalin chlorid and Magendie's solution of morphin, if there is tenderness present, with or without hydrastis (the latter in the form of the colorless fluid extract). This is injected either anteriorly, or in case the process has travelled beyond the triangular ligament, which it does in nearly 15 per cent. of cases, through an Ultzman instillator into the posterior urethra. Silver nitrate, which has been extensively used hitherto, has been discarded for the albuminates or nucleates of the same metal, preferably argyrol or protargol. There are cases, however, in which the nitrate acts more favorably than the before-mentioned compounds and is accordingly used by me in preference to them in selected cases. Irrigations with strong solutions of potassium permanganate are likewise useful, either as a recurrent irrigation by the Valentine apparatus, or as a vesicourethral irrigation through a catheter, allowing it to escape by the natural route. Zinc sulphate has also been given a trial and found to be efficacious in those cases where the urethra is the seat of a catarrhal process and where infectious organisms can not be demonstrated microscopically. Ichthyol and belladonna in conjunction have been employed as a retrojection in the chronic form of urethritis. The insertion of sounds for their stimulating effect on the mucosa offers a therapeutic measure of great value, but it is too laxly used by many without knowledge of the indications prompting their employment. As a routine procedure it is not to be advised in all cases. That its intelligent use is followed by marked improvement can not be denied, but as used by some in the unsettled manner already intimated, it must be discouraged. The indications for its use are as follows:

1. In the incipient and formative stages of stricture.
2. In involvement of the posterior urethra without implication of its adnexa.
3. As a powerful stimulant to the urethra in catarrhal conditions affecting its anterior segment, where no gonococci are demonstrable.

The cold sound is the best. It must, however, be thoroughly sterilized with boiling water before insertion and well lubricated to facilitate its passage. The best and most expeditious method of sterilization is to dip the sound in alcohol and immediately ignite it, waiting until it is entirely cool. To be effective the sound must be left *in situ* for at least 10, if not 15, minutes. Various ointments containing minute quantities of ichthyol, silver nitrate and balsam of peru, severally, or in combination, furnish good lubricants, fulfilling a twofold purpose, viz., as an emollient and slightly antiseptic and astringent. Other emollients may be tried if deemed advisable. The introduction of the cupped sound, whereon some ointment of silver nitrate is deposited, is an efficient method in prostatic urethritis of long standing. Our intention is not solely to disinfect the morbid area, but also to stimulate it, e. g., to cause a substitutive inflammation, as well as to dilate the canal. In a number of instances this purpose is readily reached. An acute posterior urethritis, or an exacerbation of the chronic form of greater or less severity is produced. The packing method, recently advanced, must be mentioned in order to advise emphatically against it. Cataphoresis is of doubtful utility, but may be tried. The beneficial results obtained by it are more pronounced in stricture. Massage or centripetal effleurage of the prostate or seminal vesicles per rectum with simultaneous counter pressure by means of a sound in the prostatic portion of the urethra, is a valuable means, but if no improvement be noticed after one week, it should be abandoned as useless.

URETHROSCOPIC TREATMENT.

The most thorough treatment is that afforded by the urethroscope, which reveals not only the actual seat of the trouble, but aids us in the direct application of medicinal agents to the diseased areas. The instrument serves a double purpose: (a) as a means of diagnosis and (b) as a therapeutic auxiliary.

Of course, we must first determine whether the tube can be passed, i. e., whether any bar obstructs its introduction in the form of strictures, polypi, diverticula and other organic obstacles. This ascertained, the posterior urethroscope is passed. The battery is turned on and the field viewed through the fenestrated opening. A great deal of practice is required to differentiate normal from pathologic conditions of the urethra. The possession of a urethroscope means little, to interpret its findings correctly means half of the success gained. It is impossible for me to enter into an exhaustive description of the different states of the urethra, both normal and abnormal, as seen through the fenestra. Long practice and proper recognition of the urethroscopic field are requisite to the correct interpretation of the picture seen. Self-deception and uncertainty may create havoc and thus frustrate our aim. Treatment by the urethroscope is the most rational method of procedure, as applications of divers nature may be made directly to the diseased parts; all ambiguity of treatment and ignorance of the actual existing conditions are thereby thoroughly eliminated. The ordinary slender wooden applicator serves well in urethroscopic work.

The value of internal treatment in chronic gonococcic urethritis is questionable. I have no faith in its efficacy, save for the administration of some urinary sedative after instrumentation, as hyoscyamus, belladonna or urotropin. We can readily dispense with these even if we have our sounds and instruments unscrupulously clean and perfectly sterilized, well lubricated and gently and slowly introduced. No force, except that of a gentle sliding movement, must be used. In patulous canals the sound finds its own way, without much effort on our part.

Treatment also largely depends upon the exact seat of the lesion, which must, in every case, be first determined. The urine must be examined by the three-glass test, to ascertain the probable location of the morbid process; the sound will detect strictures and diverticula, which are by no means so rare as some authorities would suppose. If a stricture is present, its exact side must be made known by the olivary bougie or the bougie a boule. Rectal examination is not merely advisable in some cases, but imperative in nearly all cases of chronic urethritis that come under the physician's observation. Any anomalies of the prostate or seminal vesicles are readily perceived by the palpating finger. Inflammatory states of

these structures, not infrequently give rise to urethrorrhea, which is often mistaken for gleet and unsuccessfully treated for this vague affection. A search must also be instituted for the possible presence of diseased states of the Cowper's glands, as they are equally apt to cause an obstinate urethrorrhea. There is a form of the latter condition that must not be omitted, entitled lacunar urethrorrhea, on account of its being located in the first inch of the urethra, the lacuna magua on the roof of the fossa navicularis, where instruments are not rarely engaged. Again, within the first two inches of the urethra the follicles at its base are more prominent than at other portions of the canal. Folliculitis of the urethral mucosa in its course may induce a muco-purulent discharge. Its exact location must first be discovered prior to the adoption of treatment. A tight meatus is frequently a contributing factor, which must not be overlooked during a urethral examination; the same holds good of a tight prepuce. In the former a meatotomy is indicated before we are enabled to resort to direct medical applications or mechanical interference; in the latter we must have recourse to circumcision. Affections of the bladder, the ureters and pelvis of the kidney or of the kidney itself must attract our attention as possible causes in all ultrachronic cases, where no appreciable cause can be elicited in the urethra and its appendages. Cystoscopy, and if necessary, ureteral catheterization should be performed before definitely arriving at a diagnosis. The possibility of tuberculosis should never be lost sight of. Over-treatment is held to be a potent source for the continuance of a urethral discharge, which ultimately disappears on the discontinuance of injections and instrumentation. Constitutional peculiarities of the individual must also be elicited before beginning treatment, as we are apt to meet with cases that do well on a tonic course of medicine with very little or no topical treatment. In these patients there is depraved health playing an important rôle; either malnutrition, digestive derangements or anemia and other debilitating states may be responsible for the perpetuation of the catarrhal discharge. That these anomalies of the general health must be corrected, goes without saying.

In protracted and persistent cases of posterior urethritis, especially when there is a concomitant prostatic involvement, our last and only resource lies in prostatic drainage, by means of a perineal section. This measure has of late been warmly recommended by some surgeons and the results obtained so far are very promising.

CONCLUSION.

In conclusion, I desire to remonstrate against the vague, unscrupulous and unscientific way of treatment adopted by some practitioners. The routine method displayed must be objected to by everyone who is cognizant of the gravity of gonococcic urethritis. It must not be slighted, for it is a formidable disease and frequently becomes not only a menace to the individual afflicted with it, but also a source of danger to those who are sexually brought in contact with him, who suffer innocently and whose life may be jeopardized, which is, indeed, very deplorable. It may become constitutional and attack the serous surfaces of the body, damage the delicate mechanism of the renal structure and lead to serious after-effects, immediate or remote. The treatment undertaken by the physician must be in conformity with the most modern principles governing it. The author also wishes austerely to censure and rebuke that faction of practitioners which holds itself aloof and is "too good to treat clap," as they deign to express it. Medicine, fortunately, recognizes no aristocracy; it knows of no elite, creed or caste. The only patricians are those, who by ardent endeavor and indefatigable labor, have helped to assuage the pains and heal the ills of suffering humanity, irrespective of whether the disease has been acquired in a moral or immoral sphere.

166 East High Street.

LOCAL AND REGIONAL ANESTHESIA IN RECTAL SURGERY.

A SYNOPSIS OF SEVENTY OPERATIONS.*

A. B. COOKE, M.D.

NASHVILLE, TENN.

One of the most noteworthy advances in the surgery of the rectum during the past decade consists in the development and perfection of the technic which renders it possible to perform the majority of the operations on this organ under local anesthesia. This possibility will be questioned by some, perhaps disputed by others; but theoretical objections are not entitled to weight in the face of facts to the contrary. During the past year and a half I have called attention to this subject on a number of occasions. As my experience with the method has enlarged, I have become more deeply impressed with its value, and in the light of this experience I wish again to bespeak for it the consideration which its many advantages merit.

I have heard other operators, a very few, however, express different sentiments, but so far as my experience qualifies me to speak, general anesthesia remains the bugbear of modern surgery. Refinements in methods of administration and modification of the agents employed have done much to lessen its dangers and discomforts, but little to diminish the popular dread with which it is regarded. I would not exaggerate the popular dread alluded to, nor, on the other hand, do I think it right to belittle it. In past years I have known numbers of patients refuse operation entirely because of their fear of chloroform and ether, while, in pleasing contrast, I have more recently had the satisfaction of operating in at least a dozen instances for patients who eagerly sought relief as soon as they learned that general anesthesia might be avoided.

That adequate means of local anesthesia is to-day one of the most conspicious needs of surgery, is evidenced by the eager avidity with which every announcement of a new method or measure is received. Cocain, eucain, stovain and the various other chemicals of that type, ethyl chlorid, scopalamin-morphin, spinal analgesia and even hypnotic suggestion, each met with enthusiastic welcome, only to be followed by disappointment as its limitations became apparent.

While surgery in general has long felt, and still feels, this need, rectal surgery has suffered especially, and from the writer's point of view, peculiarly, by reason of it. This statement is justified by several considerations. Though abundantly innervated throughout, the terminal two inches of the intestinal tract is practically the only portion supplied with sensory nerve fibers, and rather remarkable to say, this same two inches is more frequently the seat of disease than the whole twenty odd feet above it, or indeed, than any corresponding area of the entire body. But important as these diseases are,

* Read before the Tennessee State Medical Association, Memphis, April 11, 1906.

by reason of their frequency and the pain which attends them, they involve no vital structures and in themselves as a class can not be regarded dangerous to life. Again, when we consider the character of the ordinary operations performed on this part, the conclusion is unavoidable that they properly belong to the domain of minor surgery. Yet the road to relief which the surgeon is accustomed to point out to these sufferers usually begins with general anesthesia and ends some weeks later on emerging from the hospital, a routine which only the exigencies of major surgery should justify. It is not strange that the quack should have flourished and fattened in a field which, productive as it is, the regular profession has cultivated so poorly.

I would not be understood as intimating that rectal surgery has no further need for general anesthesia, nor that such an end is very likely to be attained. On the contrary, such operations as resection, excision, complicated fistulas, strictures, etc., ranking, as certain of them do, among the severest known to surgery, will probably always require for their successful performance those conditions which only the profoundest systemic narcosis can furnish. Happily, such operations are comparatively rarely demanded.

What is claimed, however, is that the great majority of the surgical diseases of the rectum are amenable, under analgesic measures locally applied, to radical operative treatment in which nothing of thoroughness is sacrificed and many real advantages gained. Credit for the method which renders this possible is largely due to Dr. S. G. Gant, of New York, not, strictly speaking, for discovering new principles, but rather for recognizing the value of old ones and by painstaking work, perfecting the technic for applying them in the surgery of the rectum.

Briefly, the principle of the method is pressure analgesia and its mode of application, distension of the area to be operated on with sterile water or a weak solution of some analgesic drug, according to the preference of the operator and the indications in the case. Within the past twenty months I have employed the method seventy times in a series of cases including fistula, prolapsus ani, fissure, and external and internal hemorrhoids. After an experience with the old methods covering a period of some ten years, it is not easy to repress enthusiasm in speaking of the results.

The operations performed by this method may be roughly grouped as follows: Internal hemorrhoids, 38; prolapsus ani, 2; fistula, 5; fissure, 9; external hemorrhoids, 16. It is to be understood that in a number of these cases more than one kind of lesion was found and that in such cases all necessary work was done at one sitting. In internal hemorrhoids, perhaps, the method has seemed most noteworthy. After a record of more than three hundred operations for this malady under general anesthesia, I esteem it among the most gratifying of my professional experiences to have been able to perform the radical operation thirty-eight times with the patients lying perfectly passive and in many instances even laughing and chatting as the work progressed. In only two or three cases was there the slightest complaint of pain and these few were among the earliest attempted by this method.

Faith in a surgical method is best demonstrated by the use one makes of it. In the beginning I employed the local anesthesia method with many misgivings, resorting to it only in selected cases and under most favorable conditions. The extent to which confidence in it and myself has grown, appears in the statement that of my last fifty-seven operations on the rectum, general anesthesia was employed in only thirteen. Six times only in the last thirty-one operations for internal hemorrhoids have I used other than local anesthesia and in each of these six cases something more than hemorrhoids was to be dealt with.

In lesions involving the more sensitive areas, such as fissure and external hemorrhoids, the first and chief object is to anesthetize the overlying integument. For this purpose some modification of the technic is desirable. Here the needle is first entered between the layers of the skin itself, and experience has convinced me that a 0.25 to 0.5 per cent. solution of eucain (beta or betalactate) gives better result than the sterile water alone. By the addition of a few drops of adrenalin solution the anesthetic effect may be prolonged and hemorrhage greatly lessened. The momentary pain caused by the first prick of the needle is the only occasion of complaint in these cases.

At the 1905 meeting of the American Proctologic Society, Pennington, of Chicago, and Tuttle, of New York, reported successful attempts to anesthetize the entire anorectal region for the purpose of operation. A few months later the former published a full description of his method,[1] citing twenty cases in which it had been employed. The possibility of completely anesthetizing a given area or portion of the body by blocking its nerve supply has been recognized for a number of years, the work of Crile, of Cleveland, forming the most notable contribution to the subject, at least in this country. All of us have incised phlegmons, amputated fingers, etc., painlessly by cocainizing the nerves proximal to the site of operation. Crile has even reported an interscapulo-thoracic amputation performed by cocainizing the brachial plexus. To apply this principle successfully in the anorectal region requires accurate knowledge of the location and distribution of the nerves supplying it. The chief nerve supply of this region is derived from the inferior hemorrhoidal which is usually a branch of the internal pudic, being given off from it in Alcock's canal and passing inward across the posterior part of the ischiorectal fossa to supply the external sphincter and the overlying integument. In addition, this region is innervated to a greater or less extent, anteriorly by filaments from the perineal branch of the internal pudic, and posteriorly, by the perineal branch of the fourth sacral and cutaneous branches from the coccygeal plexus. To gain complete control of this field it is only necessary that these several nerves be blocked by depositing the anesthetic solution around them by means of a hypodermic needle. As a rule, this may be accomplished through a single puncture in the median line posterior to the anus, by passing the needle first to one side and then to the other and finally infiltrating the area immediately contiguous to the site of the puncture. In the majority of cases no special attention need be paid to the nerve supply from the perineal branch of the internal pudic, though when necessary this area may be effectively dealt with by a separate introduction of the needle anterior to the anus.

The chief advantage claimed for this method is that it renders possible complete divulsion of the sphincter, when this procedure is necessary, either for curative purposes or to gain access to diseased parts. It has the further advantage of permitting the anesthetization to be completed before the operation proper is begun, thus considerably facilitating the latter. I have only once found it necessary to anesthetize the entire ano-

1 American Medicine, July 29, 1905.

rectal region as described above, though I have succeeded a number of times in blocking limited areas for operation on painful lesions involving the anal margin.

A brief recital of the case referred to will perhaps be of interest here:

Patient.—On Feb. 27, 1906, I was called to see Mr. J. B., aged 23, whom I found in bed.

History.—For several years he had been a sufferer and supposed his trouble was merely the ever-popular "piles."

Examination.—I found three well-developed internal hemorrhoids situated well up in the anal canal, an exquisitely painful fissure with its external "sentinel pile," and, as was to be expected, a spasmodic and hypertrophied sphincter.

Operation.—I advised the patient that a general anesthetic would be necessary. He consented, but his dread of it was so great that I determined first to attempt the operation by blocking the nerve supply of the entire region. This was done on the following day, after the manner outlined above, with complete success, and with practically no pain. The sphincter was divulsed, the internal hemorrhoids ligated and removed, the fissure curetted and incised, and the "sentinel pile" amputated. The patient left the hospital in six days.

The method is certainly a rational one and I shall not hesitate to resort to it in suitable cases.

Following are some of the advantages which, from personal experience, I feel warranted in claiming for local anesthesia in rectal surgery:

1. It is simple, safe and effective.

2. It eliminates the dangers and discomforts of general anesthesia.

3. Pain at the time of operation is usually absent and always so slight as to be easily borne.

4. Postoperative pain is less by far than after the old methods.

5. Time required for the operation is greatly reduced.

6. Confinement to bed is rendered a matter of expedience, rather than necessity.

7. The period of detention from business is diminished fully one half.

8. Under this method the hospital becomes a convenience and luxury rather than a dreaded essential.

9. It is a thoroughly reliable means of affording relief in many cases which would otherwise be unsuitable for operation.

10. It robs these operations of their terrors and makes it possible to reclaim this work from the hands of the "no knife" advertisers.

I hope I will not be misunderstood if, as a final thought in this connection, I say a word or two of caution. The method is simple, but its successful employment demands thorough familiarity with the anatomy of the rectum and anus, discriminating knowledge of the various types of pathology to which they are subject, and no small degree of operative dexterity. Patients afflicted with anorectal diseases are uniformly, perhaps also peculiarly, nervous and apprehensive, and the very thought of operation is sometimes sufficient seriously to embarass even the most skillful efforts in that direction. An air of confidence, gentleness of manipulation and rapidity of execution are of the utmost importance if success with the method is hoped for.

The field of application of the methods above described is, of course, by no means restricted to the anorectal region. I have repeatedly employed them in minor surgical operations, such as excision of superficial tumors, removal of ingrowing nails, amputation of fingers, etc. I am profoundly convinced that it is a duty we owe our patients to spare them general anesthesia whenever it is possible to do so, and that we should welcome and faithfully test all methods looking to this end.

THE SPIROCHÆTA PALLIDA (TREPONEMA PALLIDUM) IN SYPHILIS.*

W. C. ALVAREZ, M.D.

SAN FRANCISCO.

An immense amount of work has been done in the last eleven months on the etiology of syphilis, work that very probably will mark an epoch in our knowledge of that scourge of the human race. It seems worth while to review briefly what has already been accomplished.

HISTORICAL REVIEW.

Lassar calls attention to the fact that more than twenty-five causes of syphilis have been described during the last thirty years. As early as 1837, Donné described a parasite found in syphilitic ulcers and named it *Vibrio lineola.* In 1902, Bordet and Gengou found spirochetes in chancres and throat lesions, but discontinued their researches when they did not find the organisms constantly.

Early in 1905 Siegel observed actively motile flagellate bodies in enormous numbers in the blood of several syphilitics and named them *Cytorrhycetes luis.* Schaudinn had earned a reputation in the study of protozoa, malarial parasites, trypanosomes, etc., and he was appointed by the Imperial Board of Health in Berlin to investigate Siegel's work. He called to his aid Hoffmann, an expert syphilologist, and in April, 1905, they published the description of a very delicate spiral organism which they had found in all of 26 cases of primary and secondary syphilis. The *Cytorrhycetes luis* was not mentioned at all in their reports. Since then a few investigators have found it, many have failed, and some say that it must be an artefact.

Schaudinn and Hoffmann named their organisms *Spirochæta pallida,* and a larger one which they found associated with it they called the *Spirochæta refringens.* This has been found only on the surface of syphilitic lesions, in various other ulcerated surfaces and smegma from healthy men and women.

Hoffmann, in one communication, reports finding the pallida constant in over 300 cases of syphilis, and he has never found it in non-syphilitic material.

LESIONS IN WHICH THE SPIROCHETES HAVE BEEN FOUND.

In the primary sore, the pallida has been found very frequently. Especially in non-ulcerated chancres, and in the upper layers of the lesion there may be very few, so the scraping should be thorough. Many say that the deeper the scraping or section the more the spirochetes. They are also found in the juice from enlarged glands. Smears from mucous patches usually show many pallida, refringens and other spiral organisms, as, e. g., the *Spirochæta Vincenti.* Scrapings and blood from condylomata of the anus and splenic blood show them; but in the peripheral blood of syphilitics with active lesions they are rarely found. Blood and serum from skin lesions occasionally shows the pallida and shows the refringens only when the skin is broken. It has been suggested that the eruption is a true embolic process, the spirochetes being distributed by the blood stream.

The pallida has been found sometimes in enormous numbers, in almost all the organs of congenitally syphilitic children, in macerated fetuses, in a child of 6 and in the fluid of syphilitic bullæ. It is suggestive that the liver, which receives most of the blood coming directly from the placenta, generally contains more spirochetes than any other organ. The pallida has been found in small numbers in the placenta. Pallida and refringens

* Read before the Cooper Science Club, San Francisco, April 2, 1906.

have been found in late secondaries and have been reported found in tertiaries in a very few instances. All the authorities cast doubt on these reports and deny their accuracy, especially when the lesion is ulcerated and the observer inexperienced.

Typical pallida have been found in the primary and secondary lesions in monkeys and apes inoculated from man and from syphilitic monkeys.

Control examinations have been made of material from various venereal and other ulcerating lesions, and most of the observers report not finding the pallida. Kiolomenoglou and von Cube have found in various non-syphilitic lesions, breaking down carcinomata, etc., the pallida, refringens and many atypical forms which can not be classified with either. Schaudinn saw the specimens and admitted the presence of more than two species, but maintained with Hoffmann that all spirochetes found in non-syphilitic conditions can be differentiated from the pallida, either morphologically or tinctorially. Hoffmann has found the refringens in ulcerating carcinoma, and lately Rumpf reports finding spirochetes constantly in carcinoma. He describes these as being coarser and thicker than the pallida, with blunt ends and staining blue with Giemsa. Rosenberger describes many spirochetes in 76 per cent. of specimens taken from the buccal mucous membrane and the tartar of the teeth. Most of these resembled the refringens; some were pale, but a little too thick for the pallida; others resembled the *Spirochæta Vincenti,* and another variety was very delicate, very long, faintly staining and irregular in shape. All had pointed ends. In non-syphilitic lesions, Siebert has seen spirochetes just as delicate as the pallida.

Only the pallida have been found in sections of syphilitic lesions, and it has not been found in sections of carcinomata and other lesions which showed spirochetes in their discharges.

Mercurial treatment does not cause a rapid disappearance of the pallida or the refringens, as was at first reported. Care must be taken that the refringens which only may remain is not mistaken for the pallida.

CLASSIFICATION.

The question very naturally arises, What is the spirochete and what is its relation to other spiral organisms? The clearest answers to these questions can be found in an article by R. Blanchard.[1] He submits the following classification:

I. Spirobacteria: Vegetable in origin.
  Genera: *Spirosoma,* from nose and mouth.
    Vibrio, the comma bacillus, etc.
    Spirobacillus.
    Spirillum, from stagnant water.

II. Trypanosomidae: Protozoa.
  Genera (a) *Spirochæta.*
  Species: *Spirochæta* in stagnant water and tartar of teeth
    Spirochæta Obermeieri.
    Spirochæta of African tick fever and possibly of Texas fever and other diseases of this kind.
    Spirochæta refringens (Schaudinn, 1905).
    Spirochæta pallidula (Castellani) found in paranoi or yaws.
    Spirochæta Vincenti.
    Spirochæta in dysentery.
    Spirochæta constantly found in stomachs of dogs.
    Spirochæta found in surfaces of ulcerating neoplasms.
    Spirochæta in smegma and in ulcers.
  (b) Treponema: (Schaudinn) (syn. *Spirochæta spironema*)
    Species: *Tr. pallidum* (Schaudinn).
  (c) Trypanosoma:
    Species: *Tr. Gambiense* (Dutton) sleeping sickness. There are many other species usually transmitted by insect bites.
  (d) Trypanoplasma: Four species found in fishes.

DESCRIPTION OF THE SPIROCHÆTA PALLIDA.

The *Treponema* or *Spirochæta pallida* is described as being extremely delicate, weakly refractile, spiral or corkscrew-shaped, with three to fourteen bends which are more acute than in any other spirochete, resembling the edge of a saw. Both ends are pointed, which is very important to notice, as it will generally enable one to exclude little shreds of elastic tissue which are often beautifully coiled. The length is 4 to 14 mm.; the breadth immeasurable; it has a rotary motion forward and backward, and it may bend slightly in the middle. A vibratile membrane and flagella have been suspected by many, but as yet have not been clearly defined. The ultramicroscope shows segments and what may be a nucleus. Multiplication is by longitudinal division. It is very refractory to stains, and the pink color obtained with Giemsa is supposed to differentiate it from other spirochetes. Metchnikoff and Roux point out that this can not be depended on and cite an instance. They found in the primary sore of a monkey a delicate pallida, typical in all but that it was stained clear blue. They inoculated a chimpanzee from this monkey, and later obtained spirochetes identical morphologically, but staining a pale rose with Giemsa from the same bottle. The writer has seen in a specimen taken from the gums of a non-syphilitic young man with pyorrhea alveolaris delicate spirochetes with long wavy curves which stained pink with Giemsa. Other thicker spirochetes in the specimen were stained blue.

The refringens is thicker, flatter, the curves are fewer and longer; ends may or may not be pointed; it is also motile, bending on its own axis or stretching out into almost a straight rod, and it may be caught by the fixing agent in any irregular position. It is easier to stain than the pallida and takes the blue of Giemsa.

The *Spirochæta pallida* does not pass through an unglazed porcelain filter, and this may explain the findings of Klingmuller and Baermann, who got no results after inoculating themselves with filtered syphilitic virus. Schaudinn placed the pallida with protozoa after studying two parasites found in the blood of the stone owl. These appear in the stomach of the *Culex pipiens* as trypanosomes and spirochetes.

TECHNIC.

Mucous patches, condylomata, chancres and ulcerating surfaces should first be lightly scraped so as to get a little blood-tinged serum. The scrapings usually show no *S. pallidæ* and may show irregular forms of the refringens. Skin lesions should be well washed with absolute alcohol, a small incision made in the skin and the slide touched only to the drop of blood. Blister fluid may show spirochetes. Flexner finds that the pallida appears only after the vesicant has acted for many hours, and concludes that the spirochetes are not in the lymph spaces or they would appear sooner.

Enlarged glands should be aspirated with a large needle and powerful suction so that small pieces of white gland-substance may be found when the contents of the syringe are washed. These particles may contain spirochetes in enormous numbers. Blood should be taken carefully to avoid contamination from skin lesions and mixed with 10 parts of 0.3 per cent. acetic acid. Centrifugalize, make smears of the sediment and stain. Always make several specimens, as there are often very few organisms and these have a tendency to be all in one place.

Material to be examined unstained should be mixed immediately with a little normal salt solution and the cover-slip may be sealed. The pallida is very difficult to find this way, and the light must be well regulated. So many stains have demonstrated the pallida that I can not begin to describe them here. The Giemsa or azur stain is the surest and is easily used. The other

1. La Semaine Médicale, Jan. 3, 1906.

stains are liable to be erratic, giving good results in one specimen and none in others. The Hastings stain, diluted the same as for blood films and used for 6 to 24 hours, has made the prettiest specimens in my collection; but I generally use the Giemsa in a 1:15 dilution, as its results are more uniform, it acts more quickly and the diluted stain keeps very well. The specimens are first hardened 5 to 60 minutes, in absolute methyl alcohol and then left in the dilute Giemsa 1 to 15 hours.

Goldhorn uses a stain which acts in a few seconds and is said to give beautiful and uniform results. If this be true, it is the stain *par excellence*, as the searching of the specimens is often so tedious that one would gladly save time in the staining.

The Levaditi stain is probably the best for sections and is a modification of Ramon y Cajal's stain for nerve fibers. Several observers have traced their failures in not finding spirochetes in sections to delay in fixing the tissue. They conclude that a specimen is useless six hours after removal. This agrees with the fact that syphilis is so seldom contracted from fomites and cadavers.

PERSONAL OBSERVATIONS.

Ten cases of primary, secondary, tertiary and congenital syphilis and 8 controls have come under my observation. The following is a summary of the primary case:

CASE 1 (by courtesy of Dr. Peck).—Patient was a young man with a chancre on sheath of penis, much indurated and covered with a hard crust. This was softened, scraped, and smears showed no spirochetes after long and careful search. This chancre was excised, sectioned and stained by Dr. Oliver and myriads of pallidæ found. This case demonstrates the value of scraping deeply before taking smears.

The following were secondary cases:

CASE 2.—Man, aged 40, had large condylomata around anus. He had had some treatment. Smears from unwashed surface showed many of the refringens type, no pallidæ. Some spirochetes of pallida type were found, but midway in thickness between pallida and refringens.

CASE 3.—Man, aged 30, had extensive condylomata. Smears taken superficially showed many spirochetes of the pallida type; some of the refringens type. Pallida is frequently bent about the middle.

CASE 4.—Boy, aged 18, had very severe infection, condylomata, mucous patches, large tonsils, extensive skin eruption. Superficial scrapings from condylomata showed few of the refringens type; deep scrapings showed many pallida; mucous patches showed as many as six pallidæ in a field. Twenty injections of mercuric chlorid caused no diminution in the number of spirochetes of either type. The tonsils were removed with the guillotine, and juice from the depths contained no spirochetes of any kind. This was after about thirty injections, and it would be interesting to find if mercury causes a disappearance of the pallida in the tissues when it does not affect those on the surface of the body.

CASE 5.—Man, aged 35, had wart-like condylomata around anus. Few spirochetes of the pallida type were in smears. Ulcer at angle of mouth showed spirochetes of the refringens type and mouth spirillæ. This man had treatment for about four months.

CASE 6.—Woman, aged 25, had large chancroids of vulva, which appeared about same time as secondaries from previous infection. Smears showed spirochetes of both types and long, delicate threads, resembling those found in noma. These occasionally seem to have a tendency to form spirals and loops. Mucous patches in the mouth showed spirochetes of both types.

CASE 7. (by courtesy of Dr. Schmoll).—Superficial smears from mucous patches showed myriads of spirochetes of both types and a few spindle-shaped bacteria, described by some writers as associated with spirochetes.

The following is a summary of a late secondary case:

CASE 8 (by courtesy of Dr. Krotoszyner).—Typical punched out leg ulcers appearing two years after the primary sore. One specimen out of six showed a few typical spirochetes of both types. This case shows that one must take several specimens.

The following is a summary of a tertiary case:

CASE 9.—Patient was a woman. There were typical specific ulcers of legs. No spirochetes of any kind found.

The following is a summary of a case of congenital syphilis:

CASE 10 (by courtesy of Dr. Porter).—Infant, aged 4 months. The mother was syphilitic and the child had a mucous patch on tongue and snuffles. Swab from nose showed pallidæ.

The following were control cases:

CASE 11.—Pus was taken from large ulcerating carcinoma of the jaw. There were myriads of spirochetes as delicate as the pallida but irregularly twisted. Some were very long and straightened out into threads with a curve here and there.

CASE 12.—Epithelioma of hand. Discharge showed a very delicate spirochete resembling the pallida.

CASE 13.—Young man with no history or evidence of syphilis had marked pyorrhea alveolaris. Smears from gums showed at least two varieties of spirochetes, one of which resembled the refringens.

CASE 14.—In stomach contents from case of gastric cancer no spirochetes of any kind were found.

Two chancroids, one of penis and the other of the vulva, a vaccination pustule and pus from tubercular sinus showed no spirochetes.

CONCLUSIONS.

The spirochete was found in 7 out of the 10 cases of undoubted syphilis. Its absence in the smears from the chancres and one condyloma may be due to the smears having been taken too superficially. The tertiary ulcers were entirely negative. This agrees with the findings of other observers. The controls were negative except the carcinoma, epithelioma and pyorrhea alveolaris. These showed what may be several varieties of spirochetes, most of which are very delicate; some as delicate as the pallida, but none of them had the regular sharp bends. Occasionally one is seen which would puzzle an expert. They probably are saprophytes, as they can live in pus. The pallida soon disappears from pus. If the pallida is proved to be the cause of syphilis, doubtful lesions will be examined as sputum is now, but the diagnosis probably will never be as sure, especially in lesions in the mouth, or on the genitalia where other spirochetes are normally found. Even with the circumstantial evidence against the *Spirochæta pallida*, its discovery now in a doubtful skin lesion or genital ulcer would be a good point in the diagnosis. A great deal will depend on the experience of the observer, and to become skilled will take a great deal of time and patience, as the specimens are often few and far between. The *Bacillus lepræ* has been accepted on less evidence than has been brought forward for the *Spirochæta pallida*.

It is dangerous to depend too much on morphology, and it has been suggested that the spirochete is a stage in the life-cycle of a protozoan; perhaps the Siegel flagellate and the *S. refringens* may be another stage of the same organism.

Some of the most significant facts pointing to the pallida being the cause of syphilis are:

1. Its practically constant presence in syphilitic lesions in their various stages.

2. Its constant absence in non-syphilitic lesions, contrary findings being doubted especially when the difficulties in diagnosis are considered; and the fact that the observers are all beginners in this field.

3. Its presence in the organs of congenital syphilities and in the placenta.

4. The fact that only the pallida has been found in the deep tissues of syphilitics.

5. Its presence in syphilitic monkeys and in the secondaries of apes even after passing the virus through these animals.

6. The retention of syphilitic virus by the unglazed filter, showing that the causative organism is not ultramicroscopic.

7. The presence of most spirochetes in the most infectious lesions.

8. The fact that the *Spirochæta pallida* seems to be morphologically more distinct as a species than the other spiral organisms.

9. The fact that it seems to be more highly differentiated as a parasite and soon disappears when removed from living tissues.

It would seem now that there is some analogy between dourine (mal de Cadéras) and syphilis. The former is a disease of horses and asses met with in the Mediterranean countries, transmitted by coitus and caused by the *Trypanosoma equiperdum,* which can pierce a healthy vaginal mucous membrane.

Much work remains to be done especially in the study of sections where there is not the confusion of secondary infections.

We may hope some day to understand the mysteries of hereditary syphilis.

The pallida has not yet been cultivated, and this is not likely to be easy of accomplishment on account of its marked parasitic tendency. It is significant, however, that the trypanosomes have lately been cultivated on human blood with 5 per cent., each, of sodium citrate and sodium chlorid. When this is done, we may hope for immunizing and curative sera which will cause the name of Schaudinn to be placed with those of Jenner, Behring and Pasteur.

City and County Hospital.

Special Articles

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XXIII.

DRUGS ACTING LOCALLY ON THE SKIN AND MUCOUS MEMBRANES.

Local Anesthetics and Anodynes.

The introduction of cocain marked a decided advance in the production of local anesthesia.

Previous to that, freezing the part by immersion in a mixture of salt and snow, or shaved ice, or by spraying with ether or other volatile liquid, was used, and while a procedure of this kind does produce complete anesthesia, the pain experienced during the freezing and thawing greatly exceeds that which would be caused by such a simple operation as opening an abscess or the removal of a small foreign body, such as a splinter or piece of glass, when readily accessible. It is because of the inherent dread which the average person has of the surgeon's knife, that he will undergo suffering akin to that with which he is familiar, rather than endure a lesser one which seems dreadful because it is unfamiliar.

It is also true that the injection of cocain sometimes causes more pain than the operation for which it is given would, and, since surgical operations have become so much more common than they were formerly, many adults willingly bear the brief, sharp pain of a simple incision, rather than resort to cocain, which has come into a certain disrepute because of the abuse of it by its victims, the majority of whom have become such through the use of supposedly harmless nostrums pretending to be valuable remedies for hay fever and other minor affections.

Cocain, which is benzoyl ecgonin, shows a certain chemical analogy to atropin and aconitin, which resemble it somewhat in their action on sensory nerves, and it is also related to phenol through the benzoyl group, since benzoic acid differs from phenol only by having a COOH group in place of the OH of the phenol. The anesthetic action of phenol is second only to that of cocain.

Aside from the systemic effect, which we need not fully detail here, cocain paralyzes sensory nerve endings with which it comes in contact and even nerve trunks when in sufficient concentration; if the solution is sufficiently dilute and the action not too long continued, the nerve endings rapidly return to normal (the nerve trunk more slowly), when the application is discontinued and the cocain removed by absorption into the general circulation, or evacuated.

When a fairly strong solution, 3 per cent., is injected into the area about a nerve trunk, or an even weaker solution, 2 per cent., within the nerve sheath, both sensory and motor paralysis occur in about fifteen minutes, affecting, of course, the entire distribution of the nerve; the effect lasting for some hours after intraneural injection.

Since aqueous solutions are not absorbed from the unbroken skin, they must be injected beneath the epidermis, at least, in order that they may come into actual contact with the nerve ends.

When the solution is injected deeply into the muscular tissue the greater part of it passes into the general circulation and is lost so far as local action is concerned. To avoid this, it is better to inject the solution between the layers of the skin, at the same time limiting the circulation in the part as much as possible by compressing the blood vessels, preferably with a rubber band or other tight bandage.

Practically, the same object may be achieved by the use of a solution of the alkaloid of the suprarenal gland immediately preceding the injection of the solution of cocain. The injection of the solution of suprarenal alkaloid (epinephrin, adrenalin or one of the other trade preparations) causes a local vasoconstriction that in turn prevents the rapid absorption of the cocain solution into the general circulation, and also prevents, for the time being, the excessive hemorrhage that is so objectionable in minor operations. When it is necessary for the solution of cocain to diffuse through a part, a moment should elapse after the injection before applying the constricting bandage.

The combined use of suprarenal alkaloid and of cocain has proved to be of particular advantage in the eye and in the nose. One reason, and probably the most weighty one, is to be found in the fact that normal mucous surfaces have a tendency to absorb cocain very rapidly.

When cocain is applied to mucous membranes, either in powder or in solution, it causes its local effects for a short time and is then absorbed, producing its systemic action. Herein lies one of the chief sources of danger of the many so-called hay-fever remedies, which virtually consist of cocain with some diluent powder, such as sugar of milk, and are intended to induce and to continue the truly terrible cocain habit.

Owing to the brief action and rapid absorption, frequent repetition is necessary to secure relief in "colds" and the user is peculiarly liable to become addicted to the habit which, in its baneful effects, is not exceeded perhaps, in the whole range of drug addiction, not even excepting alcoholism. As a matter of fact, many of the so-called hay-fever nostrums are intended primarily for supplying those who are already victims of the habit and who would find difficulty in buying the drug under its real name. This practice may be said to constitute a disgraceful example of the lack of control of the nefarious nostrum traffic by the law.

We should be particularly careful to warn patients and others against the insidiousness of this type of self medication that our skirts may at least be kept clean in connection with this one phase of the evil.

Cocain in solution is readily decomposed on boiling, but if the solution be made with sterile, cold water there will be little cause to anticipate sepsis from its injection, with the usual precautions. The solution may be sterilized, however, by heat-

ing to 80° C. (176 F.) for half an hour at a time on two successive days, care being taken to eliminate all possible contaminations of even a trace of alkali.

Eucain and stovain have the advantage of resisting decomposition by boiling, but, as just suggested, the disadvantage possessed by cocain is more apparent than real, and the general action of cocain, particularly its possible complications, being well known, that drug, no doubt, will continue to hold first place as a local anesthetic, except where the ubiquitous detail man succeeds in frightening more timid members of the profession into an exaggerated idea of the various dangers attending the proper use of the official article, with a corresponding credulousness concerning the entire harmlessness of the particular substitute in which he is interested.

Cocain, when dropped into the eye, or taken internally, causes an incomplete dilatation of the pupil by stimulating the sympathetic nerve reaction to light being maintained, differing therein from atropin, which abolishes this reflex.

OFFICIAL PREPARATIONS OF COCAIN.

COCAINÆ HYDROCHLORIDUM.—U. S.—Cocain hydrochlorid, the most widely used preparation of cocain, is officially described as the neutral hydrochlorid of an alkaloid obtained from several varieties of coca. It occurs as colorless, transparent crystals of a white crystalline powder. It is soluble in less than one part of cold water and in 2.6 parts of alcohol, but is insoluble in petroleum benzin or in ether.

COCAIN.—U. S.—This is an alkaloid obtained from several varieties of coca, resembling cocain hydrochlorid in many of its properties, but being only slightly (1-600) soluble in water. It is soluble in 5 parts of alcohol and even more soluble in ether or in petroleum benzin. The alkaloid cocain is also soluble in about 12 parts of olive oil and it, or the oleate is to be used in making solutions of cocain in oil.

OLEATUM COCAINÆ.—U.S.—Oleate of cocain contains 5 p. c., by weight, of cocain in a mixture of oleic acid and olive oil.

The liquid preparations of coca, the fluid extract and the wine, are never used externally, although, if applied to the mucous surfaces, or to the abraded skin, their use would not be devoid of danger, from the absorption of the contained cocain, and other coca alkaloids.

Cocain is used locally on mucous membranes to allay irritation and inflammation as in hay fever, but it should be used very guardedly and not be too long continued. It is very much less useful in this condition than was formerly supposed and it has been very largely replaced by the now commonly used alkaloid of the suprarenal gland, which, it is claimed, allays the inflammation equally well and certainly has the marked advantage of not conducing to the possibility of habit formation.

Solution of cocain is very commonly injected hypodermically, to produce local anesthesia during such slight operations as the evacuation of abscesses, the removal of splinters, bullets, and other foreign bodies.

When there is considerable inflammation and extreme tenderness, stronger solutions are required than when a healthy surface is to be incised. In the former case, a syringe having a long, fine needle, is filled with a 4 per cent. solution of cocain hydrochlorid, the needle is then inserted obliquely, or almost parallel with the surface, between the layers of the skin, beyond the zone of increased tenderness, and a small drop of solution is forced beneath the epidermis; a white spot is seen in a moment and the needle is then advanced through that toward the more tender area without removing the point of the needle from beneath the epidermis; with each advance a drop of the solution is injected. When the needle has been passed under the epidermis for its full length, it is withdrawn and the point inserted into the most advanced blanched area; in this way, using a curved needle, a complete circuit may be made of the seat of inflammation. The object of injecting the solution between the layers of the skin is to secure anesthesia with a minimum of absorption into the general circulation.

The psychic effect on the patient of having painless injections made into such an extremely tender region tends to allay the nervous dread of the knife, which is a more important factor, than we, who are accustomed to seeing pain, are apt to realize.

The injection of a solution of cocain into the hand is apt to prove ineffective when the trouble is deep seated, as in palmar abscess, and in such cases it is better to inject a small amount of a 2 or 3 per cent. solution around or into the nerve trunks in the forearm.

The injection of strong solutions into nerve trunks has given rise to much trouble and it is preferable, therefore, to try to secure the effects from weak solutions.

Anesthesia involving all the body below the site of the injection, may be secured by injecting about ten or fifteen minims of a 2 per cent. solution of cocain hydrochlorid into the subarachnoid cavity through a sterilized platinum needle which is inserted at the side of the fourth lumbar vertebra. The patient must be placed in a sitting position, in order that gravity may not favor the passage of the solution up to the medulla.

This method of using cocain (or any other drug), is attended with so much danger that it is not justifiable except when for some reason, general anesthesia is not practicable.

The anesthesia is induced in ten or fifteen minutes, with cocain, but its duration is very variable, lasting from half an hour to five hours.

When the application of a constricting band is not feasible the previous injection of a solution of the suprarenal gland, as previously suggested, will delay the absorption of the solution of cocain into the general circulation. It should be remembered, however, that the use of vasoconstrictor only delays and does not inhibit the absorption of the cocain. When a large amount of the cocain solution is necessary it will probably be preferable to use the infiltration method, as proposed by Schleich. It is difficult here to see what advantage is to be gained by the addition of morphin to a solution that is intended to act locally, instead of directing the injection of the desired amount at once so as to secure its systemic effect. Schleich recommended solutions containing from 0.01 gm. (1/6 grain) to 0.2 gm. (3 grains) of cocain hydrochlorid and from 0.005 gm. (1 12 grain) to 0.025 gm. (1/2 grain) of morphin hydrochlorid in 100 c.c. (3 fluid ounces) of 0.2 of 1 per cent. solution of sodium chlorid to which was added one-fourth of a drop of phenol.

Strong solutions of cocain should not be used in carious teeth, and only small amounts of the weak solution. One or two drops of a 1 per cent. solution often affords relief from toothache.

Cocain is sometimes applied to hemorrhoids to lessen the pain and it may be said that its local use is much more rational than is that of opium, since the alkaloid morphin has no local analgesic or vasoconstrictor action, a fact to be remembered when prescribing urethral injections, and lotions for inflamed surfaces of the skin.

Cocain has also been used, in small doses, to relieve nausea. It may be given alone or with other antiemetics. The following is an example of a combination with cerium oxalate, the latter being used empirically.

R.	Cocainæ hydrochloratis	gr. i	0.06
	Cerii oxalas	gr. xvi	1.0
	Aquæ aurant. flor	f.℥i	30.0

M. Sig.: Shake the mixture and give one teaspoonful every half hour when needed.

Many substitutes for cocain, of greater or less merit, have been brought forward by manufacturers, and while they have been widely heralded as being superior to cocain, they are not free from disadvantages; though the manufacturers have not, as yet, devoted much time or space to the exploitation of these several disadvantages or dangers. Their further consideration, however, does not belong in a treatise on the Pharmacopeia.

THE ATROPIN GROUP.

Atropin, which has been mentioned among the analgesics, acts locally as an anesthetic, its effects resembling those of cocain, but being weaker.

OFFICIAL PREPARATIONS.

ATROPINA.—U. S.—Atropin is officially described as an alkaloid obtained from *Atropa Belladonna* and from other plants of the same family. As it occurs in commerce, it is usually contaminated by a small amount of hyoscyamin from which it can not be readily separated.

Atropin is soluble in 450 parts of water and in 1.5 parts of

alcohol. It is very poisonous, the average dose being 0.0004 gm. (1/160 grain), and, therefore, it should be tasted with the utmost caution and only in dilute solution.

ATROPINÆ SULPHAS.—U. S.—This is the sulphate of the alkaloid atropin. In its physiologic properties and dose, atropin sulphate corresponds closely to atropin. It is soluble in less than one part of water and in about four parts of alcohol.

OLEATUM ATROPINÆ.—U. S.—Oleate of atropin is a mixture of equal parts of oleic acid and olive oil containing 2 per cent. of atropin, in solution.

EXTRACTUM BELLADONNÆ FOLIORUM.—U. S.—Extract of belladonna leaves is directed to be made with a menstruum consisting of two parts of alcohol and one part of water, and should contain, when assayed according to the process given in the Pharmacopeia, 1.4 per cent. of mydriatic alkaloids.

UNGUENTUM BELLADONNÆ.—U. S.—Belladonna ointment contains 10 per cent. of extract of belladonna leaves in a mixture of hydrous wool fat and benzoinated lard.

EMPLASTRUM BELLADONNÆ.—U. S.—Belladonna plaster is now directed to be made by mixing 30 parts of extract of belladonna leaves with 70 parts of adhesive plaster, and corresponds closely with the widely used, commerical, rubber-base plasters. It is further directed that spread belladonna plasters should yield, when assayed by the process given in the Pharmacopeia, not less than 0.38 nor more than 0.42 per cent. of mydriatic alkaloids.

FLUIDEXTRACTUM BELLADONNÆ RADICIS.—U. S.—Fluidextract of belladonna root is directed to be made with a mixture containing four parts of alcohol and one part of water, and should yield, when assayed by the process given in the Pharmacopeia, 0.5 per cent. of mydriatic alkaloids from belladonna root.

LINIMENTUM BELLADONNÆ.—U. S.—Belladonna liniment is virtually a solution of five parts of camphor in a sufficient quantity of fluidextract of belladonna root to make 100 parts.

FLUIDEXTRACTUM STRAMONII.—U. S.—This is directed to be made from the leaves of *Datura Stramonium* with a menstruum containing two parts of alcohol and one part of water. The finished fluidextract is required to contain 0.35 per cent. of the mydriatic alkaloids from stramonium.

EXTRACTUM STRAMONII.—U. S.—Extract of stramonium is made by evaporating the fluidextract to the required consistency, and should contain 1.4 per cent. of mydriatic alkaloids.

UNGUENTUM STRAMONII. U. S. Stramonium ointment contains 10 per cent. of extract of stramonium in a mixture of hydrous wool fat and benzoinated lard.

Atropin and the extracts of belladonna and of stramonium, in the form of ointments, belladonna plaster and belladonna liniment are very commonly employed as local applications for the relief of the various neuralgias. The members of the atropin group are said to be more efficacious in facial than in other neuralgias, but they are also used for the intercostal variety and for lumbago.

Belladonna plasters are very commonly used, particularly by the laity, for a variety of pains, often serving merely to protect the surface or for the retention of body heat.

Suppositories of extract of belladonna are frequently used with benefit in the treatment of hemorrhoids.

They may be directed somewhat as follows:

R.	Extracti belladonnæ	fol. grs. i	0.06
	Olei theobromatis.....	3ii	8.00

M. Ft. Suppositoria No. viii.

Sig.: One every four hours, as directed.

Belladonna ointment may be used for the same purpose. It may be directed to be spread on a little cotton which is placed in contact with the piles and they are then replaced in the rectum. If they still tend to protrude a pad of cotton is placed over the anus and held in position by a bandage. For men the bandage may be attached to the suspenders, both back and front, when the severity of the attack is not such as to compel the patients to lie down.

It must be remembered that the extract of belladonna, whether applied as a suppository or ointment, is rapidly absorbed and the amount so used must not exceed the therapeutic dose.

ACONITE.

Aconite owes its action almost entirely to aconitin, an alkaloid which, like cocain, is composed of a base united to an aromatic acid. Closely resembling aconitin in its local action is veratrin. They both cause irritation when applied to the mucous membrane.

The effect of aconitin when taken by the mouth is very characteristic, the local effect being a tingling and then a disagreeable sensation in the throat which has been variously termed itching or "scratching." Applied to the skin aconitin causes sensory stimulation, which is succeeded by local anesthesia without the production of rubefaction.

Aconitin is much less efficacious than cocain as a local anesthetic, and, of course, its injection is wholly inadmissible, but it is much more useful in the form of a liniment which is to be applied to the unbroken skin, through which aconitin may penetrate to a slight extent.

OFFICIAL PREPARATIONS CONTAINING ACONITIN.

ACONITINA.—U. S.—An alkaloid obtained from the official aconite, the tuberous root of *Aconitum napellus*. There are a number of closely related species of aconite that contain alkaloids which differ widely in their physiologic action and dose. The now official aconitin is the purified crystalline alkaloid of the official root and should not be confounded with the amorphous alkaloid formerly official or with any one of the more potent alkaloids obtained from other species of aconite.

Aconitin is soluble in 3,200 parts of water and in 22 parts of alcohol. On account of the poisonous character of this alkaloid it should never be tasted, except when in very dilute solution.

Average dose: 0.00015 (0.15 mg. 1/400 grain).

FLUIDEXTRACTUM ACONITI.—U. S.—Fluidextract of aconite is directed to be made from the powdered root of *Aconitum napellus* with a menstruum composed of three parts of alcohol and one part of water. It should contain no less than 0.4 per cent. of aconitin.

TINCTURA ACONITI.—U. S.—This tincture now represents 10 parts of the crude drug, instead of 35 parts, as formerly official. It is made with a menstruum containing 7 parts of alcohol and 3 parts of water, and the finished tincture should contain 0.045 per cent. of aconitin.

Veratrin.

Somewhat closely related to aconitin, in its various properties and uses, is veratrin, which is official in several well known forms.

VERATRINA.—U. S.—The official veratrin is a mixture of alkaloids obtained from the seeds of *Asagræa officinalis*. It occurs as a white or a grayish-white amorphous powder that is soluble in about 1,750 parts of water and in 2.2 parts of alcohol.

OLEATUM VERATRINÆ.—U. S.—Oleate of veratrin contains 2 per cent. of veratrin in a mixture of equal parts of oleic acid and olive oil.

UNGUENTUM VERATRINÆ.—U. S.—Veratrin ointment contains 4 parts of veratrin with 6 parts of expressed oil of almonds and 90 parts of benzoinated lard.

LOCAL USES OF ACONITIN.

Aconitin is sometimes used locally in the form of an ointment (from 1 to 100 to 1 to 500), or in the form of an oleate, made similarly to the official oleates of atropin or of veratrin, of 2 per cent. strength, for the relief of rheumatism and neuralgia. Inasmuch as it is absorbed in these forms from the unbroken skin, and much more rapidly from wounds or mucous membranes, it must be used with caution.

For facial neuralgia it may be prescribed as follows:

R.	Aconitini	gr. iij	0.20
	Alcohol q. s. to dissolve		
	Adipis	3iv	15.

M. Ft. unguentum Sig.: Apply a very little of the ointment over the seat of the pain.

The fluidextract of aconite may be further concentrated and used in the form of an ointment, or it or the tincture of aconite may be used as a liniment, applied on cloth, and a hot pad or water bottle laid over the surface.

For muscular rheumatism a liniment composed of equal parts of the tincture, or a corresponding amount of the fluidextract and soap liniment may be rubbed on the surface, or, if desired, this liniment may be further varied by the addition of chloroform liniment, or other alcohol soluble rubefacient in place of the soap liniment.

The following is the formula recommended by Magitot for toothache.

℞ Tincturæ aconiti
Chloroformi, āā.....m. xlv 3
Tincturæ benzoini.....m. cl 10
M. Apply as needed.

Phenol.

Phenol, or carbolic acid, has been considered under the subject of antiseptics.

Applied to the skin, pure or in concentrated solution, it causes tingling and some pain with the formation of a white eschar and a rapidly induced partial or complete anesthesia of the part. It is so prone to absorption when weak solutions are used that its usefulness is interfered with to a great extent.

OFFICIAL PREPARATIONS OF PHENOL.

PHENOL.—U. S.—The Acidum Carbolicum of former pharmacopeias occurs as separate needle-shaped crystals or as a white crystalline mass that is soluble in about 20 parts of water, but is freely soluble in alcohol, glycerin or in fixed or volatile oils. Phenol will absorb or dissolve from 15 to 20 per cent. of water, and then occurs as a colorless or slightly reddish liquid.

PHENOL LIQUEFACTUM.—U. S.—Liquefied phenol should contain not less than 86.5 per cent. by weight, of absolute phenol and about 13.6 per cent. by weight of water.

GLYCERITUM PHENOLIS.—U. S.—Glycerite of phenol consists of 20 parts of liquefied phenol and 80 parts of glycerin, by measure.

UNGUENTUM PHENOLIS.—U. S.—Ointment of phenol is now directed to contain 3 per cent. of phenol, in white petrolatum.

Phenol is rarely if ever used for the production of anesthesia preliminary to incising the skin, but, in the form of the glycerite or, preferably, the ointment, it is very useful in allaying the pain of small ulcers and burns. It may momentarily increase the pain, but this is soon followed by lessened sensibility.

It is, of course, obvious that the use of phenol is not permissible where large surfaces are to be treated.

When antisepsis is not of especial importance the ointment is to be preferred, as the continuous application of even comparatively weak aqueous solutions to the extremities has caused gangrene.

THE AMERICAN MEDICAL ASSOCIATION.

ITS PURPOSES AND OBJECTS HISTORICALLY CONSIDERED.

In the 59 years which have elapsed since the organization of the American Medical Association a number of changes have been made in the original constitution and in the provisions regarding membership, delegates, etc. As few of the present members of the Association know the history of the development of the Association we have thought it advisable to consider them under the heads of the various points involved. We shall, therefore, first discuss the question of membership, later taking up matters relating to qualifications and election of delegates and the relations of county, state and national organizations to each other, as well as some historical points regarding the attitude of the Association toward medical education, proprietary medicines, medical registers, etc.

MEMBERSHIP.

The original plan of organization as adopted in 1847 provided that "members of the American Medical Association . . . should hold their appointment to membership either as delegates from local institutions, as members by invitation, or as permanent members." There are thus created three classes of membership, of which the delegates constituted the bulk and the most important part. They received their appointment from "permanently organized societies, medical colleges, hospitals, lunatic asylums, and other permanently organized medical institutions of good standing." Each appointment was for one year. The basis of representation was one delegate for every 10 regular resident members of the medical society, two for every regularly constituted and chartered school of medicine, two for every hospital containing 100 inmates or more, and one for all permanently organized medical institutions of good standing not included in the above summary. In order to admit of representation from portions of the United States not otherwise represented provision was made for members by invitation. If a physician from sections of the country in which no medical institutions of any sort existed attended an annual session, the Association could constitute him a member by invitation for that session only. He thus became an unofficial delegate for a section that would otherwise be without representation. Thus two classes of members, both, as will be seen, of a purely temporary character and deriving their right of membership either from the organization which they represented, or from the Association which invited them to a seat in its deliberations, constituted the voting membership of the American Medical Association. In order that delegates having once been members of the Association might retain some connection with it after their time as delegates had expired, it was provided that all those who had served in that capacity and such other members as might be appointed by the Association, by unanimous vote, might be made "permanent members." They were entitled to attend the meetings and to participate in the affairs of the Association, without the right to vote. It was, therefore, recognized from the time of the first preliminary convention in 1846, that the right to vote should be limited to the duly elected and qualified delegates of local medical societies, colleges and hospitals, who came bearing credentials of their election as such.

It is evident that by 1850 the provisions regarding members by invitation were being somewhat abused and that many men were proposed at each meeting who, it was thought, were not entitled to this distinction, inasmuch as Dr. Ware of Massachusetts, at the third annual session at Cincinnati, offered a resolution providing for the appointment of a committee, on the first day of each session, to which should be referred all nominations for membership by invitation. At the same session Dr. Hooker of Connecticut and Dr. Evans of Kentucky offered resolutions providing for the repeal of the section of the Constitution relating to members by invitation.

The year following, 1851, at the Charleston session, a minority report was brought in from the committee on amendments of the Constitution, recommending that permanent members be allowed the privilege of voting. According to the official minutes, "the vote being then taken on allowing permanent members the right of voting, it was lost by a large majority."

It will thus be seen that the principle was recognized and steadfastly adhered to from the beginning, that the Association was a delegated body, representing societies in affiliation. No further change of any importance was made until the session of 1869, at New Orleans, at which an amendment was adopted which emphasized the fact that continued membership in a county or state society, where one existed, was essential for eligibility to membership in the American Medical Association, and that continued membership in local societies was necessary for continued membership in the American Medical Association. This applied to permanent members, as well as to delegates and members by invitation.

THE CONSTITUTION REVISED.

In 1874, at the twenty-fifth session at Detroit, Dr. N. S. Davis submitted a report from the committee on revision of the Constitution, which was adopted. The clause regarding delegates, as recommended, provided only for delegates from "permanently organized state medical societies and such county and district medical societies as are recognized by representation in their respective state society and from the medical department of the Army and Navy of the United States."

Later on the United States Marine-Hospital Service was given representation on the same basis as the Army and Navy.

It will thus be seen that the American Medical Association was, from the very moment of its organization, a delegated

body; that only properly elected delegates with credentials from the bodies which they represented were entitled to vote, and that the Association repeatedly refused the privilege of voting to any others except delegates.

In 1881 provision was made for a fourth class of members, viz., members by application. It was provided that members of state or county societies certified to be in good standing by the president and secretary of said society, might make application for admission as members by application. Such members were entitled to receive THE JOURNAL and to attend annual sessions, but without the right to vote. (JOURNAL of the A. M. A., Vol ii, 1884, page 702.)

These provisions regarding membership remained in force up to the St. Paul session, in 1901, at which time the committee on reorganization, appointed the previous year, brought in its report, which was adopted at this session. No change of any importance was made, so far as the provisions regarding membership were concerned, except that county and district societies were now united to form state societies, which were the only ones recognized by the American Medical Association. To-day, as always, membership in an "affiliated" society is required for membership in the American Medical Association. Members of county and state societies do not and never have voted directly, but solely through their duly elected representatives. Two changes were made by the new Constitution adopted at the St. Paul meeting, one being to change the basis of representation from one delegate to every 10 members, to that of one delegate to every 500 members. This change was found necessary on account of the enormous increase in membership, in order to reduce the number who sat as delegates to such a size as would make efficient work possible. Previous to the St. Paul session the proportion of delegates to members was so large that practically every one attending the meeting could and did go as a delegate. The revision of the Constitution reduced the number of delegates to 150, leaving the bulk of the members free to attend the scientific and social features of the session. The other change made was giving this delegated body the specific name by which it is now known, viz., the House of Delegates of the American Medical Association.

It will, therefore, be seen that historically the House of Delegates is the legitimate successor and direct outgrowth of the delegated body known as the American Medical Association.

BODIES ENTITLED TO REPRESENTATION.

Closely related to the matter of membership is that of the bodies entitled to send delegates to the annual sessions of the American Medical Association. In February, 1846, the following resolution was adopted by the Medical Society of the State of New York, the body which issued the call for the preliminary convention: "Resolved, That the preamble and resolutions passed by this society at its annual session, Feb. 6, 1845, did not contemplate the appointment of delegates to the national convention by county or merely local societies in these states, where delegates are appointed by a regularly organized state society." (Proceedings, vol. i, pp. 9-10.) The principle is here clearly recognized that the Association consisted of delegates appointed by state societies, and that delegates from county or district societies were only to be admitted in such states as had no regularly organized state society.

In the first Constitution adopted, as has been seen, it was provided that the American Medical Association should consist of duly elected delegates from medical societies, medical colleges, hospitals and insane asylums. In 1874 representation from hospitals and asylums was abolished. In 1872 the adoption of a new Constitution abolished delegates from medical colleges and provided for delegates from medical societies alone, with the exception of a representative of the medical service of the United States Army and the United States Navy. Later on a representative from the Marine-Hospital Service was added.

SUMMARY.

Summarizing the history of the American Medical Association for the last 59 years, we note: 1. The American Medical Association was from the beginning and always has been a delegated body. 2. Primarily only those persons elected as delegates could become members. Various classes of membership were gradually added, for the reasons enumerated above. Up to the time of the establishment of THE JOURNAL, the only way in which membership could be obtained was by attending an annual session of the Association, either as a delegate or by being elected as a member by invitation. 3. Membership by application was devised to allow members of county and state societies to become members of the American Medical Association without being elected a delegate, or attending an annual session of the Association. 4. The original basis for delegates was one to every 10 members of a state or local society; the present basis is one to every 500 members. With more than 50,000 members of constituent state associations as at present, the House of Delegates on the old basis might include 5,000 members, a number so large as to make the transaction of business absolutely impossible. It is now limited by the Constitution to 150 members, of whom 15 represent the sections and government services. Whenever the number of delegates exceeds this number a reapportionment on a different basis is provided for.

OTHER LINES OF WORK.

The American Medical Association was organized primarily for the purpose of raising the standard of medical education. This question and the relation of the Association to medical schools was discussed at nearly every session of the Association. In 1847, when the Association was organized, there was not a single licensing or examining board in existence in any state in the Union. A diploma from a medical college carried with it the license to practice medicine. It is to the credit of Dr. N. S. Davis that he persistently fought for the establishment of the principle that the licensing body which confers legal right to practice medicine should be entirely and absolutely divorced from the educating or degree-giving body. This question came up every year and resolutions were repeatedly adopted asking different state societies and members of the Association to work for the enactment of a law in every state providing for the organization of a licensing board which should examine all candidates for the right to practice medicine, or at least pass on diplomas presented by them. It is not too much to say that the influence of the American Medical Association more than any other one factor has been responsible for our present system of state examining boards and licensing bodies.

MEDICAL COLLEGES.

Regarding medical colleges themselves, efforts on the part of the Association to improve them extends over practically the entire existence of the Association, and would require too much time for detailed presentation. It is sufficient to say at this time that the Association has continuously and persistently worked for two things: First, the raising of the standard for admission in medical colleges, in other words, the improvement of preliminary education; and, second, the betterment of the courses offered to medical students. Owing to the lack of effective organization up to a short time ago, the work of the Association had been largely limited to the adoption of resolutions and the exercise of personal influence. The Council on Medical Education established recently by the House of Delegates is the first real effective measure inaugurated. It is hoped that it will be able to undertake positive reformatory work along the lines of medical education.

PHARMACEUTICAL REFORMS.

On account of the prominence that has been given in the last year to the work of the Council on Pharmacy and Chemistry and the agitation against nostrums and proprietary preparations, many members of the Association, as well as many physicians not in close touch with the work of the past, labor under the impression that such work on the part of the Association is of comparatively recent origin. An inspection of the transactions of the Association since its organization does not bear out this assumption, however. On the contrary, we find that one of the first questions which came before the preliminary convention in 1847 was the regulation of pharmaceutical matters and of "patent" and proprietary remedies.

The following resolution was offered by Dr. John B. Johnson of Missouri and adopted:

WHEREAS, Numberless and important evils result from the almost universal practice of allowing persons, wholly ignorant of drugs and medicines to engage as apothecaries and still greater evils result from the universal traffic in patent and secret medicines, therefore be it

Resolved, That the Committee on Education inquire into the expediency of establishing a school or schools of pharmacy in the respective states for the special purpose of preparing persons for the business of apothecaries, and also the expediency of adopting a rule that no physician ought to patronize a druggist or apothecary who deals in patent and secret remedies, and report at the next annual meeting of the Association.

DRUG ADULTERATION.

The adulteration and substitution of drugs and pharmaceutical preparations were also considered at the subsequent meeting and committees appointed to work for the enactment of laws prohibiting the adulteration of medicinal preparations. At the session of 1849, Dr. Thomas Wood presented the following resolution, which was universally adopted:

Resolved, That the Committee on Medical Science for 1849 be instructed to inquire into the expediency of establishing a board to analyze the quack remedies and nostrums foisted on the public and to publish the results of their examinations in a newspaper to be published for that purpose, and, further, to append such plain views and explanations thereto as will enlighten the public in regard to the nature and dangerous tendencies of such remedies.

This resolution, adopted fifty-seven years ago, outlines exactly the object and scope of the present Council on Pharmacy and Chemistry, which has been denounced in the last few months as a dangerous innovation and something entirely outside of the original purpose of the founders of the Association. For the present, however, the work of the Council in investigating nostrums advertised exclusively to the public is only incidental, its main work now being directed to the investigation of proprietary preparations advertised to physicians. The only reason why the work was not prosecuted at that time was that the infant association was without the funds for the successful undertaking of such a work. That social conditions were much the same fifty years ago as they are to-day is shown by the following resolution offered by Dr. Phelps of New York in 1850:

WHEREAS, The clerical profession, even though perhaps sometimes unwarily, yield their extensive influence in the community in giving credence to quackery and quack medicines, therefore be it

Resolved, That this subject be referred to the Committee on Hygiene to consider and report at the next annual meeting of the Association.

Dr. Lawson of Ohio offered the following amendment to the resolution:

Resolved, That this Association regard it as contrary to its system of ethics for medical journals to advertise nostrums or secret remedies, even though their composition may have been made known to the editor.

Both of these resolutions were adopted.

(Transaction, vol. iii, pp. 42 and 43.)

In 1879, Dr. William Brody of Michigan presented the following resolution:

WHEREAS, Of late years many drugs and combinations of drugs bearing copyright names, have been placed on the market and especially introduced to the notice of physicians, and

WHEREAS, Such drugs and combinations of drugs, having copyright names, are advocated in the medical journals of the country. Be it

Resolved, That the use of articles thus protected by copyright and the promoting of their use by advertising them in medical journals is a distinct violation of Section 4, Article 1, of that portion of the Code of Ethics treating on the duties of physicians to each other and to the profession at large, and also of Section 4, Article 1, of that portion of the Code of Ethics, treating on the duties of the profession to the public and of the obligations of the public to the profession. (Transaction, vol. xxx, 1879, p. 45.)

It will thus be seen that the regulations and control of pharmaceutical products has been one of the questions prominently before the Association ever since its organization; that the Association has repeatedly expressed itself as opposed to the exploitation of proprietary products having a secret formula; that it even went so far at one time as to establish a committee for the investigation of these preparations and the publication of their findings to the profession and to the laity; that the only reason why this work was not done years ago was the absence of proper organiation and the lack of a sufficient fund for the prosecution of this work.

OFFICIAL REGISTER OF PHYSICIANS.

The publication of a register of American physicians, which so far as possible, should oe of an official nature, was one of the subjects on which the newly organized Association expressed itself at the preliminary convention in 1847. The following resolution was offered by Dr. J. L. Pierce of Michigan, and was adopted:

Resolved, That the delegates of this convention be requested to ascertain as far as may be practicable and report at the next annual meeting the number of practitioners of medicine in their respective states, designating the number who may have received diplomas from a medical college, the number who may have been licensed by a medical society (a practice then in vogue), and the number who practice medicine without any authority whatever.

AMERICAN MEDICAL DIRECTORY PROPOSED IN 1849.

In 1849, Dr. Bacheldor offered a resolution providing for the publication by the several counties and districts represented in the Association of all the physicians and surgeons of such districts who are recognized as regularly educated practitioners. In this connection, it is worthy of note that the phrase, "regularly educated practitioners," refers to physicians who were graduates of medical colleges as distinguished from those who had no training whatever. In 1856, Dr. Denton of Michigan offered the following resolution:

Resolved, That a committee of three be appointed whose duty it shall be to enlist some enterprising publishers to aid in collecting and arranging material for an American Medical Directory. (Trans. vol. ix, p. 41.)

In 1868, Dr. S. D. Gross, then President of the Association, said in his President's address, "The necessity of having an annual register of the members of the regular profession of the United States has long been felt and generally acknowledged. The issuance by the association of such a publication or an expression of its belief in its necessity and usefulness would go far in securing its early appearance and its steady reissue afterwards." (Trans., vol. xix, p. 66.)

The same year the following resolution was adopted, evidently inspired by Dr. Gross' remarks:

Resolved, That a committee be appointed to report next year in regard to the subject of an annual register of the regular profession in the United States and in the meantime to take necessary measures to carry the plan into effect. The following committee was appointed: Dr. John H. Packard, Pa., Dr. Walter E. Gibbon and Ellsworth Elliott, New York. (Trans., vol. xix, 1868, p. 35.)

The following year Dr. Packard, as chairman of the committee, reported progress, and on motion of Dr. Mussey of Ohio, it was resolved that each state medical society be requested to prepare an annual register of all the regular practitioners of medicine in their respective states, giving the names of the colleges in which they may have graduated and the date of diploma or license . (Trans., vol. xx, p. 20.)

The following year, 1870, on motion of Dr. John H. Packard, chairman of the committee, it was:

Resolved, That the Committee on a National Medical Register, appointed in 1868, be discharged and that the whole matter of registration of physicians be referred to the various state medical societies; and

Resolved, That this action of the Association be communicated by the permanent secretary of the said societies that the recommendation that some system be adopted by each so that lists as complete as possible of the practitioners of medicine in the state may be procurable. (Trans., vol.xxi, 1870, p 49.)

It will thus be seen that the matter of a compilation and publication of a register which would be based on official information, as far as possible, has been in the minds of the leaders of the Association ever since its organization. At various times in the last fifty years, local, state and national directories have been published by private parties. As the amount of profit from sales of such a work is necessarily limited, the publishers have been forced to supplement the subscription receipts by carrying advertisements, in many cases of an objectionable nature, and especially by offering, as a special inducement to subscribers, or on payment of a small bonus, the publication of the name of the subscriber in conspicuous type, or the addition to his name of a large amount of extra information. Such methods, perfectly legitimate and unobjectionable from a business standpoint, have necessarily lowered the value of the directory from a professional point of view, inasmuch as the men who are the most eager and willing to pay for prominence and notice are not necessarily the most prominent and worthy members of the profession. No directory heretofore published has made any attempt to confine its entries to legally qualified physicians or to verifying data furnished by individuals by comparison with the official records. The profession needs, and has needed a directory

compiled from official records in which all would be treated alike, regardless of subscription or the payment of a bonus; in other words, a directory published for information, not for profit.

THE ASSOCIATION JOURNAL.

The only remaining factor in the history and development of the Association which we shall consider at this time is the establishment of THE JOURNAL and its effect on the Association. Up to 1882, the proceedings of the Association were published in a volume of transactions which was distributed free to all members of the Association. The membership at that time was less than 2,000, and as the annual dues were $3.00, the financial transactions of the Association amounted to from five to seven thousand dollars in a year, the greater part of which was spent in publishing and distributing the transactions. An examination of the treasurer's reports for the thirty-five years from 1847 to 1882, shows that there was, most of the time, a purely nominal surplus. At one time, however, the cost of publication of the transactions exceeded the amount of receipts from dues so that, in 1866, the treasurer reports as follows: "The difficulties which have been alluded to in these reports have resulted, as therein foretold, in the bankruptcy of the Association. The permanent members of the American Medical Association will not purchase the volume of transactions, although local agencies have labored in the most important cities in the country and circulars have been sent to individual members and publication made in the leading medical journals. The fact has been again and again demonstrated that the members of the American Medical Association do not consider the volume worth the cost of its production." (Trans., vol. xvii, p. 49.) At this time the treasurer also reported a deficit in the treasury of the Association of $404.02.

THE ASSOCIATION IN DEBT.

The following year, 1867, Dr. D. H. Storer, of Massachusetts, "rose to a privileged question, the honor of the Association. It was in debt and he proposed to levy a tax of $2.00 on each member present to liquidate the debt." (Trans., vol. xvii, p. 33.)

The members of the Association were inclined to be remiss in paying their dues. In fact, many of them refused to pay any dues whatever unless they attended an annual session, and, as it was necessary for a member to be three years in arrears before he lost his privileges of membership, it was only necessary for a permanent member to pay $3.00 every three years, or an average of $1.00 a year, in order to retain membership in the Association. The organization was consequently without funds, without any definite or permanent membership, without any home, without any officers who could afford to devote any time to looking after its affairs. In fact, it was practically nothing but an annual mass-meeting, made up of delegates from the various societies throughout the country, many of which had no mutual bond whatever between them. The amount of funds at the command of the Association were so limited as to make any practical work for the improvement of the profession or the public impossible. For instance, in 1868, the report of the treasurer showed a balance for the year of $83.90. (Trans., vol. xix, p. 53.)

JOURNAL FIRST PROPOSED.

The matter of the establishment of a journal to be the property of the Association was proposed as far back as 1852, when Dr. J. B. Flint of Kentucky proposed to amend the Constitution so as to provide for the establishment and maintenance of a quarterly journal. (Trans., vol. v, p. 44.)

The matter was agitated at various meetings of the Association, but no definite action was taken until the session of 1881, at which Dr. Hodgen, President of the Association, warmly advocated the establishment of THE JOURNAL, following which the following resolutions were adopted:

> WHEREAS, In the words of our president, it seems tolerably certain that if for the present bulky, little read and productive volumes of Transactions there could be an active, progressive weekly journal with a large income, such as would naturally come to it from its advertising sheet, there would be in such a change the earnest, rapid and improved growth in the influence and usefulness of the American Medical Association; therefore be it
>
> *Resolved*, That the president appoint a committee of five members, whose duty it shall be to digest and report in detail, as early as possible a plan for the publication of THE JOURNAL etc. (Trans., vol. xxxii, p. 479, 1881.)

The following year, in discussing this proposition, the committee, of which Dr. N. S. Davis was the chairman, reports that after investigating the matter, they are of the opinion that if 3,000 physicians should become members of the Association, paying $5.00 per year for membership, which would entitle them to THE JOURNAL, such membership to be limited to members of county and state societies, that the resulting fund of $15,000 would be sufficient to support the new JOURNAL. They therefore recommended that a journal, to be known as THE JOURNAL of the American Medical Association be issued. (Vol. xxxiii, p. 39, 1882.) This was accordingly done. Dr. N. S. Davis became the first editor of THE JOURNAL. The subsequent history and growth of the Association is known to practically all of the present membership. That the establishment of THE JOURNAL accomplished all the results expected of it is also well known. Its earnings have not only paid its known running expenses, but those of the Association as well, and there has also accumulated a surplus which has enabled the Association, besides gradually increasing the size and attractiveness of THE JOURNAL, to obtain a permanent home, a printing plant adequate for all the needs of the Association, and which now makes it possible, at this late day, to take up the plans and purposes of our professional forefathers and begin, actively and effectively, the work of raising the standard of medical education, investigating the preparation and composition of the drugs and pharmaceutical preparations furnished us, compiling and publishing an official register of the members of the profession, and of doing many things for the betterment of medicine that would not have been possible otherwise. That these movements will be of great value to the profession, both to those who are non-members as well as members of the organization, hardly admits of question. The physician of the future must be a better trained man than his predecessors have been. Both the public and the profession must be protected on the one hand against quacks and charlatans and on the other against frauds and impositions imposed on them for commercial purposes. These are the things for which the Association has been striving throughout the fifty-seven years of its existence, and which are now becoming, not theories, but actualities, which can be realized in the near future.

Clinical Notes

THE UMBILICAL CORD.

A METHOD OF DRESSING.*

A. L. BELT, M.D.

GILMORE CITY, IOWA.

When the first stage of labor is nearing completion it is my custom to procure a common glass tumbler, in which 1/2,000 or 1/3,000 solution of bichlorid of mercury with sterile water is prepared, and into this several pieces of sterile gauze and three strong braided silk ligatures are placed. A pair of shears and a compression forceps are then put in a sterilizer or basin on the stove to boil.

The second stage of labor completed, I tie the cord at two points about six inches from the child's body, cut between and pass the child to the nurse to wash while I care for the mother.

When ready to dress the cord, the hands being sterile, I wash the child's abdomen and the cord with a piece of gauze taken from the bichlorid solution previously prepared, carefully cleansing the base of the cord and the omphalic folds.

This done, I examine the cord for possible congenital hernia, and not having found it, or having reduced it if found, I place the compression forceps on the cord as nearly on a level with the margin of the umbilicus as feasible and make firm pressure for the space of a minute. Removing the forceps, with the third prepared ligature I now tie securely in the path of the forceps just removed. In this way pressure is so applied to the walls of the umbilical artery that there is no danger from hemorrhage "when the cord shrinks."

* Read before the Sioux Valley (Iowa) Medical Society, Jan 18, 1906, at Sioux City, Iowa

I next cut the cord one-half inch from the ligature with sterile shears, thus removing the end of the cord handled by the nurse in washing the child, and with one of the remaining pieces of bichlorid gauze press out all the contents of the cord possible above the ligature, by this method removing all the dead tissue possible. The stump is then covered with some good antiseptic powder.

Then I take an ordinary vaccination shield, fill it either with sterile cotton or dry sterile gauze, on which more of the same powder is dusted, and placing it over the cord secure it in place with a couple of strips of adhesive plaster placed transversely and apply the band.

Already the attention and the admiration of every one in the room, even to the old grandmother, has been attracted by this dressing, and when I admonish them to allow the dressing to remain for six or eight days and then remove it I have no trouble in the carrying out of my orders, and they will promptly report to me if the dressing slips or comes off.

This dressing is particularly valuable in the country, for often we do not see either mother or child for six months or a year after confinement, and some form of a permanent antiseptic dressing is a very desirable thing.

In conclusion, the benefits of this method of cord dressing are: 1, absolute cleanliness; 2, simplicity of application; 3, permanency; 4, freedom from danger of hemorrhage either from (*a*) shrinkage of the cord or (*b*) the tearing or pulling of the cord when it becomes attached to band by drying of its exuded contents in the ordinary method of dressing; 5, the minimum danger of infection. (a) primary or (b) by the removal of the original dressing and the application of a new one by some unskilled attendant; 6, diminished danger of umbilical hernia.

REPORT OF A CASE OF FRACTURE OF THE ATLAS VERTEBRA, WITH COMPLETE RECOVERY OF PATIENT.*

ARTHUR HOLDING, M.D.

ALBANY, N. Y.

Patient.—Male, aged 68, was referred to the Roentgen ray laboratory of the Albany Hospital by Dr. W. G. MacDonald, Albany, N. Y. Previous occupations, dectective, soldier in Confederate army. Present occupation, broker.

Family History.—Father, mother, two brothers and two sisters died of tuberculosis.

Past History.—He uses stimulants. Three years ago he was hit on the head with a brick; the blow rendered him unconscious for a few minutes, but beyond the swelling of the scalp, it did not injure him.

Present Illness.—Nov. 16, 1905, when near the top of a flight of stairs composed of eight steps, while turning to one side to allow some ladies to pass in descending the stairs, he remembers losing his balance and beginning to fall backward; he made a futile grasp at the banister, but fell, landing at the bottom on the back of his head, neck and shoulders. He was under the influence of liquor at the time of the accident. He received several cuts in his scalp over the vertex of the skull. None of them extended to the skull. The patient was placed in bed, and was evidently not thought in a serious condition, as no physician was summoned until two days afterward. At that time the patient was conscious, acted as though recovering from intoxication, complained of stiffness of the neck as well as considerable pain, which was eased by hot packs, and did not require morphin. On the sixth day after the accident slight delirium developed, the pain and stiffness of the neck increased, and Dec. 4, 1905, he was removed to the Albany Hospital. On admission to the hospital, he could not move his head or neck and complained of feeling as though the back of his head had been cut off and hot irons were being applied to the edges of the wound. With the back of his neck on hot-water bags and lying flat on his back he was comfortable, but as soon as he raised his head or tried to sit up the burning sensations returned in his occiput.

Examination.—Posteriorly in the median line the spinous processes could be palpated as high as the fifth cervical; above this point there was an area of muscular spasm, thoroughly masking all bony prominences to a point one inch below the external occipital protuberance. This area of induration or muscular spasm extended laterally as far as the sternomastoid muscles and suggested the sensation frequently felt over deep-seated inflammatory processes. The transverse processes of the vertebræ could not be mapped out without using more violence than was permissible considering the nature of the case. The trachea was freely movable; the tongue protruded in the median line; the pupil reacted directly and concentrically to light and accommodation. He could not distinguish the ticking of a watch held two inches from the ear. He stated that he was deaf before the accident. On palpating the posterior wall of the pharynx with the finger, on a level with the hard palate there could be felt a distinct hard protuberance beneath the mucous membrane, with an estimated elevation of one-fourth inch and with broad sloping sides. Gentle pressure on this eminence elicited no tenderness or fluctuation.

Over the right parietal region he failed to distinguish heat from cold, saying that a test-tube containing hot water felt cold; otherwise there was no impairment of tactile, temperature and painful sensation in the head or neck. He has an impediment of speech, which he states developed forty years ago. There was no difficulty in swallowing, articulating or breathing. He could rotate, flex and extend the head and neck.

Treatment.—This consisted of elevation of the head of the bed with extension applied to the head with weight and pulley, the neck resting on hot-water bags. One month after admission to the hospital the weights were removed and the patient was allowed to sit up. His improvement was steady and uneventful.

Result.—On Jan. 15, 1906, he was discharged as recovered. He has a slight forward tilt of the head, a slight induration of the soft parts over the first, second and third vertebræ (cervical), and all motions of the head are slightly restricted in all directions. Otherwise he is completely cured. He walks as well as ever and is able to carry on his business as well as he could before the injury. He has had no burning sensation in the occipital region since Jan. 15, 1906.

* Presented before the Albany County Medical Society, Feb. 12, 1906.

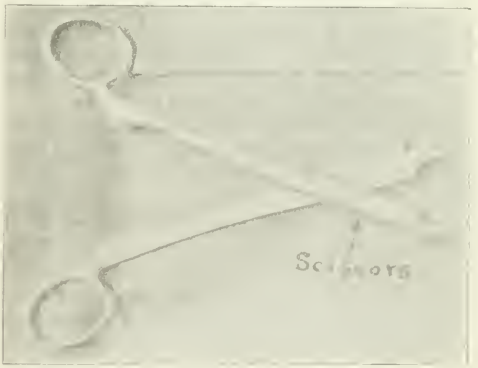
New Instrument

COMBINED NEEDLE-HOLDER AND SCISSORS.

HENRY FLACK GRAHAM, M.D.

BROOKLYN, N. Y.

The accompanying illustration shows a combined needle-



holder and scissors, which I am informed is a new combination. It is intended for office, accident ward and ambulance work, especially, but can be used with advantage in certain conditions in the operating-room. It is the same size as the Abbe needle-holder.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, JUNE 2, 1906.

THE MEDICAL LIBRARY AGAIN.

There are in this country several very large medical libraries, some of them as complete as any in existence. Thus the most complete medical library is that in the office of the surgeon-general of the U. S. Army, at Washington. Naturally, the other large libraries are located in large cities, the so-called medical centers of the country, although it is true that certain universities, whose homes are in smaller towns, have fairly extensive collections of medical books.

A few years ago a wave of agitation in favor of better and more medical libraries passed over the country, the influence of which is yet felt, especially in certain cities in which the desire to establish medical libraries seems to have taken firm hold. There has been organized, too, an Association of Medical Libraries which, in addition to holding an annual meeting, renders tangible service to its members by means of a bureau for exchange of books and journals. Then there is the *Medical Library and Historical Journal,* now in its third year and certainly an influential exponent of the cause of the medical library and of medical history, especially American.

There are now, it seems to us, two definite and distinct ways for enlarging the scope and the influence of the medical library movement, namely (1), continuation with renewed vigor of efforts looking to the establishment of real, growing libraries in the large cities, e. g., Detroit, Indianapolis, St. Louis, Omaha, Kansas City, Seattle, as well as in many other places now without the direct advantage of so essential a factor to local medical progress as the medical library; and (2) a larger use on part of medical men of existing libraries.

The time for discussing "The Need of a Medical Library" is passed long ago. Daniel Drake, the great pioneer physician of the Mississippi valley, in 1852, wrote: "Our own rising cities . . . should have their library associations, and collect those stores of scientific aliments, which are not less necessary to the mind's growth and activity, than daily observation at the bedside of the sick." The local conditions vary greatly, of course, and in some cities much may be accomplished by proper co-ordination of institutions of various kinds already in existence, in other places it may be necessary to start anew. In all cases, the outcome depends largely on the wisdom and energy of those in charge. There is no question but that if a small group of active, unselfish and intelligent physicians determine to secure for their city a useful medical library, they will certainly succeed.

The charge is undoubtedly true that comparatively few physicians make adequate use of the medical library. Many never delve deeper into medical literature than the text-book. Contracting the text-book habit during student days they remain content ever afterward with receiving information, so to speak, at second hand, and never think of going directly to the first sources of medical knowledge, namely, original articles in medical journals, complete sets of which, together with the *Index Medicus* and the "Index Catalogue" constitute the most valuable asset of the medical library. While there are many who seek not those stores of scientific aliments that Dr. Drake believed essential to the mind's growth and activity, every effort must be made to bring home to physicians the value and importance of medical libraries. The best time to begin is during the period of undergraduate medical study, and it is gratifying to note that in our best schools to-day the library is regarded as an essential part of the necessary equipment. It was Virchow who said that all scientific work is literary, which has been interpreted to mean that inasmuch as all progress in our knowledge is the result in reality of a continuous development, he who would understand thoroughly the present state of our knowledge on any subject must study the development of that knowledge, and this is possible only through access to collections of journals, monographs and special works, not usually in possession of individuals.

The treasures of the richest medical library can be brought within the reach of any physician by means of loans from the surgeon-general's library in Washington. Against an adequate deposit and on payment of express charges to and fro, this library sends books and journals all over the country. Local libraries can and do perform a most useful service by obtaining loans of this kind for their readers, and where desirable this function might be performed very well also by local medical societies, particularly if the *Index Medicus* and the "Index Catalogue," the indices to the current and accumulated medical literature of the world, were at hand. In this way, the medical society may aid its members materially and unquestionably to great advantage to the character of its own scientific work.

ANTITUBERCULOSIS ORGANIZATION.

The meeting of the National Association for the Study and Prevention of Tuberculosis, at Washington during the present month, and the reports of certain features of its proceedings in the newspapers, will direct renewed attention to the question of the further organization of the movement against tuberculosis which, up to the present time, has proved so encouraging. More and more those outside of the medical profession are becoming interested in the effort to suppress the great white plague of the North, and very naturally it is to physicians that

they turn for guidance in the matter of initiating and increasing the efficiency of public regulations and popular education that will help in this beneficent modern crusade. For those who wish to obtain data at once practical and up to date to reply to such questions we know of nothing better than the recent annual report of the Pennsylvania Society for the Prevention of Tuberculosis, which has just been issued and which includes details of this organization's work down to May 1, 1906.

It may not be generally known that this was the first society for the prevention of tuberculosis organized and that its organization furnished an example which was followed by most of the civilized countries and by the other states of the Union. A short history of its fourteen years of existence is to be found in the president's address, published in this report. Some of the achievements of the society are dwelt on with pardonable pride. It is pointed out, for instance, that until recent years the Eastern Penitentiary of the State of Pennsylvania, located in Philadelphia, which was built with the idea of enforcing solitary confinement to the utmost degree, constituted the awful example of how inevitably tuberculosis would work its ravages among such prisoners. Owing to the activity of one of the members of the Pennsylvania Society for the Prevention of Tuberculosis, however, this has all been changed and the Eastern Penitentiary is no longer a horrible example. This of itself constitutes the most encouraging lesson of how much can be accomplished for the prevention of tuberculosis even under unfavorable circumstances.

Perhaps the most interesting phase of the Pennsylvania society's work consists in the distribution of tracts which are meant to convey in popular language the most important details of present knowledge with regard to tuberculous prophylaxis. These tracts bear such practical titles as: 'How to Avoid Contracting Tuberculosis," "How Persons Suffering from Tuberculosis Can Avoid Giving the Disease to Others," "How Hotelkeepers Can Aid in Preventing the Spread of Tuberculosis," "How Storekeepers and Manufacturers Can Help to Prevent the Spread of the Disease."

With the long and successful experience that the Pennsylvania society has had, it will perhaps be a surprise to most persons to find that its president considers that the problem of tuberculosis sanatoria will probably have to be solved by private beneficence rather than state aid. He points out that in nearly every one of the middle states, in spite of the good will of the people and the passage of favorable laws by the legislatures, there have been serious difficulties in the management of state sanatoria because of political complications. These have proved sufficient to hamper materially the good work of such institutions. The existence of state-aided sanatoria has given to many wealthy persons who would have subscribed to the movement for the eradication of tuberculosis the ready plea that they are supporting state institutions for this purpose by the payment of taxes. The whole report for its suggestive quality is worth careful reading by those who have been interested in the tuberculosis movement and especially by such as now wish to take a more active part in what is probably the most promising field of social endeavor now open.

A FURTHER CONTRIBUTION TO THE STUDY OF UNTOWARD SERUM REACTIONS.

A few weeks ago[1] we referred to the so-called serum disease, in which annoying complications and sequels varying from slight local erythema to troublesome urticaria, joint pains and edema, are encountered with a frequency that has placed obstacles in the way of a wider use of curative serums, and engendered in some a prejudice against them.

Just issued from the Hygienic Laboratory of the Public Health and Marine-Hospital Service[2] is a noteworthy publication by Director M. J. Rosenau and Assistant Director John F. Anderson dealing with an elaborate experimental study of a newly identified poisonous action of blood serum. This investigation concerns itself with the guinea-pig and the reaction of this animal to horse serum in particular, both fresh normal horse serum, old serum, dried serum, antitoxic (diphtheric) serum, and the so-called "refined and concentrated" antitoxin obtained by precipitating and dialysing antidiphtheric serum. The authors have amplified and correlated observations already familiar to those engaged in the production of curative serums, to the effect that severe symptoms or even death occur in guinea-pigs once treated with horse serum, and, after a proper interval, subjected to a second injection of the same agent. They show by a series of brilliant experiments that this toxic action of horse serum bears a direct relation to the sequence of the injections and the interval between the first and second dose, which "incubation period" must not be less than ten days.

A primary injection, either subcutaneous or intraperitoneal, even in considerable amount, is absolutely innocuous; and if daily doses, or at least several doses, be administered during the critical period, harmful effects are avoided. Indeed, repeated injections with an interval of one or two days induced an immunity against the toxic substance in question. But if guinea-pigs are given a single large or small dose of horse serum, they become sensitized during the ten days or more, and when subjected to a second dose after this time has elapsed toxic phenomena indicating a profound effect especially on the respiratory mechanism appear, either with a rapidly fatal outcome or with symptoms of variable intensity leading to death or to recovery.

Emphasis is justly laid by Rosenau and Anderson on the fact that this phenomenon is in no way peculiar to ordinary diphtheric antitoxin. It is not evaded by antitoxin "refined" by the Gibson method, and is as readily provoked by normal horse serum, fresh, old, or dried.

1. THE JOURNAL, April 7, 1906, p. 1034.
2. Bulletin No. 29.

Much stress is attached to the statement, "Diphtheria antitoxin plays no part in this poisonous action and is in itself harmless." However, that the instructive experiments which are set forth in detail in their monograph have a bearing on the question of accidents in serumtherapy in man is concluded by these investigators, though they do not assume that the reaction studied by them satisfies all the conditions met in human beings, and they agree that factors like "individual susceptibility" and status lymphaticus are not entirely ruled out of consideration. In any event, these researches bring us a step nearer to the solution of the problem of serum complications and sequels, and along with a similar fact brought out by von Pirquet and Schick indicate at least one point which can be applied in practice; that is, so to time the injections of curative serums as to avoid the possible danger of sensitizing a human being. In other words, in beginning serum treatment, one should either inject a massive single dose to allow of slow absorption and consequent immunity or repeat a smaller dose several times during the ten days constituting the "incubation" or critical period.

EXPERT MEDICAL TESTIMONY.

It is a familiar fact that at the present time and under the system of practice now in vogue our courts are prevented from using expert medical knowledge in such a way as to secure directly, and to the fullest extent, the assistance that such knowledge is capable of giving to the administration of justice. The fundamental difficulty is that the final decision of complex, technical medical questions must be given by persons who lack the technical knowlege necessary, namely, the court and the jury; and this they must endeavor to do on a basis of more or less contradictory facts and opinions that are brought before them in a most confusing and cumbersome manner, to wit, by the so-called battle of experts.

It is evident that in many cases involving problems of a purely technical medical nature the persons best able to adjudicate with justness the medical questions at issue are those who, in addition to a sense of fairness and justice, possess expert technical knowledge and training. Who are better able definitely to decide, for instance, such questions as whether an accused is sane or insane; whether a dead woman had been recently pregnant or not; whether death resulted from poisoning or not; whether a claimant for damages is or is not injured, and, if injured, whether permanently and to what extent, and other questions of analogous nature—a jury composed, let us say, of intelligent, fair-minded but non-medical persons or a commission of equally fair-minded experts in the particular branch of medicine concerned? The answer is so obvious that our wonder is excited as to what the reason may be that Americans, who commonly are regarded at home and abroad as peculiarly gifted with the valuable faculty of doing things in a direct and practical way, have not long ago instituted reforms in the procedure of their courts of law. Surely our legal machinery is not rooted and fixed so irrevocably in constitutional regulations and precedents that adoption of some better system than the present of deciding important medicolegal problems, now passed on by persons without adequate knowledge and consequently incompetent to decide intelligently, is wholly out of question.

The present system of privately retained experts who appear as witnesses in our trials might well have been replaced long ago by the system of nominated experts in use in other countries, perhaps modified better to suit our conditions, whose opinion, derived from consideration of all the facts, should be final and constitute the basis for adjudication of questions that require for intelligent solution technical, expert knowledge. Naturally the fees of such experts should be fixed by legal tariffs. Only in some such way as this will it be possible for the administration of justice to obtain the greatest and most direct aid from expert knowledge in the various departments of medicine.

MENTAL DISEASES AND GENERAL PRACTICE.

Statistics show a great increase during the last few decades in the number of patients suffering from mental diseases. This increase is not only relative and due to the increase of population, but it is absolute in the sense that the number of insane people to the population is proportionately greater than before. There is little doubt that the reason for this greater frequency of mental affections is that the strenuous life in our large cities almost inevitably leads to a loss of mental equilibrium in those who are of inadequate mental caliber. The better hygiene as a consequence of the enforcement of sanitary regulations and advancement in medical science have led to the preservation of a great many weaker individuals who would have fallen victims either to the various infantile diseases in childhood or a little later would have succumbed to the infectious diseases which used to be such effective agents in removing the less fit from among the population. It is these less vital individuals whose minds especially prove incapable of standing the strain put on them by our modern life and who live to be the increasing population of our insane asylums.

There is no doubt but that these factors which are at work in the production of more frequent mental affections will continue to exert their influence. Hygiene and sanitation will persist in their beneficent work. There is no likelihood, however, of any let-up in the strenuous life. The present state of affairs would seem to demand that there should come a special development in present methods of studying and caring for the insane. It is extremely important that the beginnings of mental diseases should be recognized as early as possible, partly for the sake of the patient himself, because in this way a violent access of mental disturbance may be avoided, and partly for the sake of friends and relatives in order that there may be fewer of the sad attempts, only too often successful, at suicide or homicide. Every

general practitioner, therefore, should have definite knowledge of at least the ordinary and more frequent types of mental diseases, and especially of their early symptoms and of the possibility of serious development as regards violence or other infractions of law and order.

The time has come for the general practitioner to have a better understanding of mental diseases than has been thought necessary in the past.

One of the most important things regarding mental affections is that patients suffering from them should be brought as soon as possible under the influence of suitable surroundings. At present, owing to the lack of definite knowledge by many general practitioners, this most important element in the therapeutics of these diseases is likely to be neglected. Friends, because of their wish to avoid, if possible, the stigma of asylum confinement, are deterred from being urgent in the matter of care for such patients unless something serious seems actually impending. There is besides, unfortunately, under present circumstances the law's delay by which during the process of preparation for proper disposition, patients are often kept for some days under extremely unsuitable conditions.

If there were wards in general hospitals in which patients suffering from mental diseases could be cared for for a few days most of these difficulties would disappear. Friends would be willing to have patients taken to hospitals early, with the idea that careful observation should be made in order to determine the precise condition and to apply as far as possible suitable treatment. At present, the attitude of suspicious fear with which patients in beginning mental diseases are regarded by those at home is quite sufficient of itself to cause further deterioration of the mental condition. Many cases of mental diseases are sure to improve. The prognosis as to the improvement, however, depends to a large extent on how far the physical condition of the patient has suffered, and then the degree to which mental symptoms have been allowed to proceed before proper arrangements for treatment have been made. If early in the cases of beginning mania and melancholia patients could be placed under the firm, careful management of nurses trained properly to care for them, there would often not be the serious outbreaks of mental disturbance that eventually develops under present conditions.

It has been pointed out that it would be considered unpardonable in the present state of our knowledge if typhoid-fever patients had to be kept for several days under observation in unsuitable conditions. The same is true of mental diseases. Undoubtedly, many a patient is rendered much worse than would otherwise be the case by the neglect of his physical health consequent on lack of care, but still more on lack of knowledge of the necessities of his condition on the part of those who wish him well enough, but are too timorous and anxious properly to provide for him. Most of these unfortunate circumstances could be remedied at once by the establishment of psychopathic departments in connection with general hospitals. Many objections, of course, can be urged against this, but they do not seem of sufficient weight to overbalance all the advantages for the patients and the community that would accrue from it. This seems to be a definite advance demanded by the increase of mental diseases.

GERMS FROM MUMMIES.

In a rather curious monograph a French authority credits the spread of consumption in Europe to the archeologic investigations of the time of the first Napoleon in Egypt, when the mummies of the Pharaonic period, laden, as he says, with the germs of tuberculosis, were first sent out wholesale to the museums of Europe. He claims, it is said, that experiments made in Paris have demonstrated that these 3,000-year-old bacilli, in spite of the antiseptic methods employed by the Egyptian embalmers, are far more deadly than the active living ones of to-day, and that the opening of a mummy case is a perilous undertaking for those who have it in hand. This is news that we can not accept too implicitly. It seems much like the popular notion that the seeds of ancient Egyptian cereals found with the mummies are always ready to germinate under proper conditions, a notion which, we believe, botanists do not accept. Even if tuberculosis germs could exist and could still retain their vitality after 3,000 years, it would hardly be necessary to invoke their agency for the causation or even the exacerbation of tuberculosis in Europe 100 years ago. We suspect that if any reliable sanitary statistics could be obtained it would be found that there was no need of imported mummy tuberculosis at that time; affairs were bad enough as they were. It is just one of those sensational speculations which, while interesting and possibly even a little suggestive, are not helpful.

THE PURE-FOOD BILL.

At the present writing it looks very much as if the opponents of the Pure-Food Bill would win out again. For some weeks this measure has been the special order in the House of Representatives; but there it is blocked. Whether it will come up during this session, unless some special effort is made by its advocates outside of Congress, is now a little doubtful. There is no organization to represent the people, except the American Medical Association, to bring pressure on those who have the matter in charge; but there are any number of organizations to represent those who are opposing the bill. Aside from the whiskey trust, the "patent-medicine" association, the various manufacturers who are putting out misbranded or fraudulent foods, there are many others whose financial interests are at stake, and all these, collectively and individually, are continuously active in various ways. Gentlemen have been sent to Washington from all parts of the country to see their congressmen about the matter, and a little personal talk from an influential constituent often has considerable weight. If we are rightly informed, considerable of this influence has been forthcoming during the last few weeks. It is

well known that there is a goodly majority in the House in favor of the measure, especially if we count those who have to appear to be in favor of it to please their constituents, and if the bill comes to a final vote its passage is almost sure—hence, the keeping of the bill in committee until it is too late to act on it. Furthermore, amendments of various kinds are in readiness both to delay and to weaken the measure if they are adopted. So, altogether, the outlook is not encouraging for this session, and the next is a short one, which means that there will be a good excuse not to push it then. But it is not worth while to be discouraged or to give up. The people are in earnest in their demand for the law, and there are more who are interested and who are demanding it year by year. The awakening of public opinion in regard to this matter during the last two or three years is remarkable, and it will not become dormant until satisfactory legislation is enacted.

MOSS AS FOOD.

A Norwegian authority, Dr. Hansteen of the agricultural school at Aas, according to the London dispatches, has made the discovery that moss, probably of the succulent Arctic variety, is a palatable and nutritious food for man and that it will become an important addition to our food resources. It has long been known that certain forms of mosses or lichens can serve as dietary adjuncts or as food in emergencies, but any very extensive dependence on them has not been ordinarily thought possible. The human species is not even claimed by the vegetarians to be a strictly herbivorous or grazing animal, but Dr. Hansteen's alleged discovery would very nearly make him such. If Hansteen is correct, the Arctic plains will become regions of plenty and the almost annual starvation periods of the dwellers in those regions have been needless. The discovery is one that can be taken with some allowances.

Medical News

ALABAMA.

Physicians Fined.—Drs. William W. Ransom and Wallington P. McAdory, Birmingham, were each fined $1, May 10, in the police court, on the charge of failure to report births to the city health officer.——T. B. W. Brooks, Montgomery, was convicted on the charge of practicing medicine without a certificate in Marion County and fined $25 and costs.

State Medical Association.—The Medical Association of the State of Alabama held its thirty-third annual meeting in Birmingham, April 17, 18, 19 and 20, under the presidency of Dr. Eugene D. Bondurant, Mobile. The association was welcomed on behalf of the Jefferson County Medical Association by Dr. Lewis C. Morris, Birmingham, president. Hon. Henry B. Gray delivered the address of welcome on behalf of the city of Birmingham. In his annual address the president referred to the advances made in the treatment of various diseases, and especially to the work of the quarantine officers in keeping yellow fever out of the state of Alabama. He commended the anti-tuberculosis campaign and recommended that the association publish and own a medical journal to be devoted strictly to its interest. He advised that the county boards of examiners be done away with and that the basis of representation in the state convention should be the membership of the subordinate organization. The senior vice president in his report noted a large increase in the membership of the county medical societies and stated that of the 1,005 legal physicians in the state 821 were members of the association. The papers read during the session were of unusual interest. The address of Surgeon James H. White, United States Public Health and Marine-Hospital Service, New Orleans, on the "Sanitary Needs of the Cities of the South," was of especial interest. He stated that the crying need of the southern cities is for drainage, sewage, pavements and water supply, and that when the necessary aridity has thus been obtained, the seacoast cities of the South can carry on commerce with their natural tributaries in the tropics with as much impunity as do New York and Boston, and with a great deal more convenience to themselves and tributaries. The board of censors recommended the creation of an anti-tuberculosis committee to consist of nine members and to be empowered to act independently or in cooperation with the state officers or organization. It also endorsed the recommendation for the establishment of an inebriate institution and also for a state hospital for epileptics. It endorsed a state journal for the association, but suggested further consideration. The following officers were elected: President, Dr. George T. McWhorter, Riverton; vice-presidents, Drs. Louis W. Johnston, Tuskegee, and Andrew J. Coley, Alexander City; state health officer, Dr. W. H. Saunders, Montgomery; secretary, Dr. J. Norment Baker, Montgomery (re-elected); treasurer, Dr. Henry G. Perry, Greensboro; censors, Drs. Dyer F. Talley, Birmingham, and John R. G. Howell, Dothan; orator, Dr. Toulman G. Gaines, Mobile, and councilors, Drs. William R. Jackson, Mobile, Edwin B. Ward, Selma, Allan A. Greene, Anniston, J. D. S. Davis, Birmingham, Enoch J. Conyngton, Decatur, and Jacob U. Ray, Woodstock. The association adjourned to meet in Mobile in 1907.

COLORADO.

Personal.—Dr. Ella A. Head has been appointed city physician of Greeley.——Dr. Francis B. Rothrock, Colorado Springs, has returned from Europe.

Again Found Guilty.—George A. Rietzel, alias Dr. George Elliott, who recently completed a sentence in the state penitentiary for criminal malpractice, was convicted in Denver, May 18, of sending improper matter through the mails, and was remanded for sentence.

Health Report of Colorado Springs.—During April 45 deaths occurred, equivalent to an annual death rate of 16.87 per 1,000. Of the deaths 17 were due to tuberculosis. The births of the month numbered 31. No typhoid fever, measles, smallpox nor diphtheria was reported during the month.

Commencement.—Denver and Gross College of Medicine celebrated its annual commencement exercises May 19. Judge Ben B. Lindsey made the address to the students, and Chancellor H. M. Buchtel of Denver University conferred degrees on a class of 26. The annual banquet was held at the Savoy after the exercises. Dr. Melville Black presided as toastmaster and toasts were responded to by Chancellor Buchtel, and Drs. Leonard Freeman, Claude E. Cooper and Robert B. Porter.

CONNECTICUT.

Diphtheria.—North Canton has several cases of diphtheria, one patient being the son of the postmaster. The village school has been closed by the health authorities and the post-office has been moved temporarily.

Personal.—Dr. William W. Brackett has been appointed health commissioner of New Britain, vice Dr. William P. Bunnell.——Dr. J. W. Ives has been appointed medical examiner for the town of Milford, vice Dr. Elias B. Heady.

April Deaths.—During April 1,414 deaths were reported, equivalent to an annual death rate of 17 per 1,000. The deaths from infectious diseases were 17.8 per cent. of the total mortality. Pneumonia was the cause of 210 deaths; diseases of the nervous system, 163; heart diseases, 152; consumption, 120; accidents and violence, 83; bronchitis, 46, and influenza, 34.

Infectious Diseases.—During April 24 cases of smallpox were reported in one town only, Putnam; 681 cases of measles from 76 towns; 169 cases of scarlet fever from 40 towns; 10 cases of cerebrospinal meningitis from 5 towns; 120 cases of diphtheria from 32 towns; 143 cases of whooping-cough from 17 towns; 46 cases of typhoid fever from 20 towns, and 49 cases of consumption from 17 towns.

Want a Hospital.—Forty Roman Catholic physicians of New Haven met May 9 and considered a proposition for the establishment of a Roman Catholic hospital in New Haven. Dr. John F. Luby presided and Dr. Thomas A. O'Brien was secretary of the meeting. A committee was appointed, consisting of Drs. Matthew C. O'Connor, John F. Luby and Stephen J. Maher, to make a thorough inquiry into this question and report at a subsequent meeting.

GEORGIA.

Personal.—Dr. Stewart R. Roberts has resigned his professorship of physiology in Emory College and will practice in Atlanta.——Dr. Charles H. Hall, Macon, is seriously ill.

Cornerstone Laid.—The cornerstone of the new building of the Atlanta School of Medicine was laid May 11 with appropriate ceremonies. The new building will cost about $70,000.

Pasteur Institute.—Dr. James N. Brawner, physician in charge of the Pasteur Institute, Atlanta, reports that since the foundation of the institute in 1900, 387 patients have been treated, of whom only two have died.

County Physicians Exonerated.—Drs. Everard D. Richardson and John W. Hurt, county physicians of Fulton County, who were recently indicted by the grand jury for neglect of prisoners in the custody of the county, after full investigation, have been exonerated by the Fulton County commissioners.

Society Meeting.—At the annual meeting of the Troup Medical Society, May 10, the following officers were elected: Dr. Joseph S. Horsley, West Point, president; Dr. A. J. Tuggle, La Grange, vice-president; Dr. Henry W. Terrell, La Grange, secretary and treasurer (re-elected), and Dr. Isaac H. Lane, La Grange, censor.

INDIANA.

Diphtheria Closes Schools.—Two school houses in Marion have been closed on account of the prevalence of diphtheria.

Physician Burned.—Dr. Marion F. Parrish, Munroe, suffered severe burns on the face, hands and arms in an explosion of chemicals, May 19.

Personal.—Dr. Roy W. Earhart, Mulberry, has sailed for Colon.—Dr. Thomas A. Kearns, Muncie, has left for Vienna.——Dr. George W. McCaskey, Fort Wayne, has returned from a trip to Europe.——Dr. Nelson D. Brayton, Indianapolis, has been appointed interne in the Medical Department of the Canal Zone.

Favors One Medical School.—The Daviess County Medical Society, at its meeting May 11, adopted resolutions endorsing the action of the several medical colleges of the state in merging their faculties and equipments and forming the Medical Department of Purdue University, and protesting against the movement being made to organize a medical school in connection with the State University.

Stemen Leaves Fort Wayne.—Dr. Christian B. Stemen, chief surgeon of the Wabash System, has resigned on account of removal. Dr. Stemen has also resigned as dean of Fort Wayne Medical College and as trustee of Purdue University. A luncheon was given by the physicians of Fort Wayne, May 14, in honor of Dr. Stemen, who has accepted a chair in the Medical School of Kansas University, Kansas City. Dr. Kent K. Wheelock acted as toastmaster.

Commencement.—The graduating exercises of the Medical College of Indiana, Department of Medicine of Purdue University, took place in Lafayette, May 13, when a class of 122 received diplomas. The graduates, faculty and friends came from Indianapolis on a special train. President W. E. Stone delivered the introductory address on "Education and Efficiency." Prof. George E. Vincent of the University of Chicago delivered the doctorate address. The dean, Dr. Henry Jameson, Indianapolis, presented the class to the president of the university, who conferred the degrees.

Sickness and Death in Indiana.—The State Board of Health reports tonsillitis as the most prevalent disease in the state during April. Then follow rheumatism, pneumonia, bronchitis, influenza, scarlet fever, whooping-cough, intermittent fever, remittent fever, measles, pleuritis, diarrhea, typhoid fever, erysipelas, diphtheria, cerebrospinal meningitis, typho-malarial fever, smallpox, cholera morbus, puerperal fever, dysentery and cholera infantum. Smallpox occurred in three counties, Adams having 15 cases, Allen 20 cases, and Miami 15 cases. The deaths of the month were 2,976, equivalent to an annual mortality of 13.2 per 1,000. This compares unfavorably with the rate of 12.1 per 1,000 in 1905. Of the deaths, 31 per cent. were of individuals of 65 years and over, and 14.1 per cent. of infants under one year. Tuberculosis caused 415 deaths; pneumonia, 386; cancer, 126; violence, 124; cerebrospinal meningitis, 42; typhoid fever, 34; influenza, 28, and whooping-cough and diarrheal diseases, each 27. Of the 124 deaths from violence 28 were suicides and 2 homicides. Of the suicides, 7 were due to gunshot wound, 5 to asphyxiation and 12 to poison.

KANSAS.

New Hospital for Emporia.—The new hospital which is being erected in Emporia will be completed and ready for occupancy about June 1.

Smallpox.—Two smallpox patients in Iola have broken quarantine and departed for parts unknown.——Hutchinson has had five cases of smallpox in the last four weeks.

Graduation.—A class of 18 was graduated at Kansas Medical College, Topeka, April 18. James A. Troutman delivered the general address, Dr. Herbert L. Alkire the faculty address, and Dr. William S. Lindsey conferred the degrees.

Charter Revoked.—The charter of the Kansas State Medical and Surgical Institute, Kansas City, a mail-order medical establishment, was revoked May 13, on recommendation of Dr. George H. Hoxie, editor of the *Journal of the Kansas Medical Society*.

Contract for Medical Building Awarded.—The contract for the construction of the new laboratory and administration building of the University Medical School, Rosedale, was awarded by the board of regents to the Urban Construction Company, Kansas City, May 5, for $16,824.

Supports Pure-Food Bill.—The committee on public health and legislation of the Shawnee County Medical Society presented a resolution at the meeting of May 7, supporting the original pure-food bill and instructing the secretary to send a copy of the resolution to the Kansas congressman.

Personal.—Dr. Franklin P. Hatfield, Grenola, has been appointed a member and secretary of the State Board of Medical Registration and Examination.——Dr. W. H. Robinson, Ubera, is suffering from paralysis of the right optic nerve.——Dr. C. E. McClung, dean of the Kansas University Medical School, was seriously injured by an explosion of dynamite, May 19.

Vital Statistics for 1905.—The report of Dr. S. Jay Crumbine, secretary of the State Board of Health, shows that the total number of deaths reported during 1905 was 3,005. Consumption caused 965 deaths; pneumonia, 780; typhoid fever, 397; diphtheria, 251; cholera infantum, 195; dysentery, 120; influenza, 99; scarlet fever, 70; whooping-cough, 58; smallpox, 38, and measles, 27. During the year 744 deaths from violence were reported; of these 116 were from suicide, and of the suicides 34 chose poison and 31 firearms as the route of death. The deaths from tuberculosis amounted to 63.7 for each 100,000 of population. There were 4,116 cases of smallpox reported during the year, with only 33 deaths, an average of less than 1 per cent.

State Society Meeting.—The fortieth annual meeting of the Kansas Medical Society was held at Topeka, May 9, 10 and 11, the president, Dr. Charles E. Bower, Wichita, in the chair. Prof. W. H. Carruth, Lawrence, delivered an address on the relation of Kansas University with the Kansas Medical Association, and Dr. Jeptha Dillon, Eureka, read an interesting article on organization. A committee of three was appointed to prepare several amendments to the laws now on the statute books relative to the illegal practice of medicine. The following officers were elected: President, Dr. Lyman L. Uhls, Osawatomie; vice-presidents, Drs. William F. Sawhill, Concordia, John P. Kaster, Topeka, and Paul S. Mitchell, Iola; librarian, Dr. Samuel G. Stewart, Topeka, and editor, Dr. George H. Hoxie, Kansas (re-elected). The meeting next year will be held in Kansas City.

MARYLAND.

Baltimore.

Bequest.—Mr. E. Greenbaum left $500 to the Hebrew Hospital.

Suicide.—There were two cases of death from suicide last week, making 33 since January 1.

Commencement.—At the commencement of the Baltimore Medical College, held May 22, 96 candidates received degrees. The diplomas were conferred by the mayor.

Personal.—Dr. Henry M. Wilson left for Europe, May 22, on account of the illness of his daughter there. Others who expect to leave for Europe shortly are Drs. John C. Hemmeter, Randolph Winslow, J. Mason Hundley, Hiram Woods and Gordon Wilson.——Dr. E. Miller Reid has resigned from the faculty of the Baltimore University, in which he has held for about 20 years the chair of nervous diseases, throat and chest.——Dr. Herbert Schoenrich left Baltimore May 22 for New York City, where he becomes assistant to the pathologic department of the Presbyterian Hospital.——Dr. Edward A. Smith has been nominated as captain and assistant surgeon, Fourth Infantry, M. N. G.

The Typhoid Fever Epidemic.—The prevalence of typhoid fever in the northern section of the city has caused much alarm there this week. The city water supply is claimed to be pure, but many houses in that section are not supplied with it, and pumps and wells which are known to be con-

taminated are used. The streets, yards and alleys are said to be in a dreadful condition, clogged with refuse and reeking in filth and bad odors. On May 26, by mutual understanding, the people turned out and gave the section a thorough cleansing, giving up the half-holiday for that purpose. The city authorities gave their assistance. More than 130 cases of typhoid fever are said to have occurred in this part of the city.

MICHIGAN.

The Afflicted.—Dr. Festus F. Pitcher, Battle Creek, has been adjudged insane and committed to the State Hospital, Kalamazoo.——Dr. W. Clay Bastar, Benton Harbor, was operated on in Chicago, May 15.——Dr. Albert L. Walker, Salem, suffered a cerebral hemorrhage May 13.

Communicable Diseases.—Marinette still has three cases of smallpox, which the health officer claims did not originate in the city.——Diphtheria is said to be raging at Lincoln Lake, where eight families are under quarantine, two schools have been closed, and church services have been prohibited for the time being.——Five cases of smallpox and two of varioloid are reported from Greenville, Mich.

Personal.—The Alumni Association of the Detroit College of Medicine presented a silver loving-cup to Dr. Theodore A. McGraw, May 11.——Dr. Josiah L. Ambrose, Bay City, has been appointed city physician.——Dr. Gilbert S. Field, Detroit, sailed for Europe from Montreal, May 7.——Dr. Wilber S. Henderson has been elected city physician of Port Huron.——Dr. Zelpha C. Walker has been made a member of the Benton Harbor board of health.

Alumni Election.—At the annual meeting of the Detroit College of Medicine Alumni Association, May 17, 400 were present. The following officers were elected: Dr. Louis J. Hirschman, Detroit, president; Dr. Richard C. Buchanan, Green Bay, Wis., vice-president; Dr. John C. Dodds, Detroit, secretary and treasurer; Dr. E. C. Rumer, Davison, Mich., historian, and Drs. H. Wellington Yates and Richard E. Mercer, Detroit, members of the executive committee.

Commencements.—The thirty-eighth annual commencement exercises of the Detroit College of Medicine were held May 17. For ten days preceding that date the annual clinics for the alumni of the institution were in progress, at which Drs. James P. Tuttle, New York City, and Dr. Howard Kelly, Baltimore, took part. A class of 82 was graduated. Dr. Frank B. Walker delivered the faculty address, and President Sidney Miller of the board of trustees conferred the degrees.——The Michigan College of Medicine and Surgery, Detroit, held its annual commencement exercises May 11. Prof. William A. Hackett presided. Rev. Dr. Whelan, Port Huron, delivered the address, and Dr. Hal C. Wyman, dean of the faculty, conferred degrees on a class of 22.

MISSOURI.

Sentenced for Criminal Operation.—Dr. Edward J. Hogan, St. Louis, was fined $250 and sentenced to six months in the workhouse, May 25, for performing a criminal operation.

Smallpox.—Dr. L. J. Dandurant reports seven cases of smallpox in Willowtown, south of St. Joseph, and one in Hyde Valley, and complains that the patients do not respect the quarantine. He was authorized to take such means as might be necessary to enforce rigid quarantine.

Personal.—Dr. Downey S. Harris, assistant to the chair of pathology in the Medical Department of St. Louis University, has been appointed city bacteriologist of St. Louis.——Dr. Max A. Goldstein, St. Louis, will sail for Europe in a short time.——Dr. Heine Marks, St. Louis, has been elected chairman of the joint committee of the municipal assembly to make plans for the reorganization of the board of health.——Dr. Ira C. Young, St. Louis, has returned from a vacation trip to Southern California.——Dr. Daniel D. O'Gorman, St. Louis, has been appointed supreme medical director of the Catholic Ladies and Knights of America.——Dr. and Mrs. Omar Morgner, St. Charles, left for Europe, May 16.

Commencement Exercises.—The medical department of St. Louis University held its annual commencement exercises May 19, when a class of 91 was graduated. The address was made by the dean, Dr. Young H. Bond, and Dr. R. C. Atkinson delivered an address on "The Needs for Greater Clinical Facilities," and Dr. C. M. Jackson spoke on "Two Desirable Reforms."——The commencement exercises of the Medical Department of Washington University were held May 24, when a class of 55 was graduated. Dr. Maurice H. Richardson delivered the address of the evening on "The Ideal Surgeon."

State Association Meeting.—The forty-ninth annual meeting of the Missouri State Medical Association was held in Jefferson City, May 15, 16 and 17. The address of welcome was delivered by Governor Folk. On the first evening the warden of the state penitentiary entertained the association at a supper at the institution, where the regular ration for prisoners was served the guests. The secretary made a report which showed the association to be in good financial condition, there being a balance of $4,000 in the treasury. He reported that 95 of the counties in the state had been organized on the standard plan. The council is to be enlarged by adding 10 more districts, to be 28 instead of 18 in the state, each district being composed of three to five counties. The election of officers evolved a considerable degree of excitement. Eventually Dr. Charles H. Wallace, St. Joseph, was elected president, the other candidate being Dr. C. R. Woodson, superintendent of the State Hospital for the Insane No. 2, St. Joseph. Dr. Wallace declined to enter on the duties of his office until after investigation into the alleged charges of consulting with and accepting a fee from a quack had been made. The other officers elected were: Vice-presidents, Drs. F. W. Allen, Callao, William G. Cowan, Sedalia, C. J. Orr, St. Louis, E. H. Thrailkill, Kansas City, and Dr. H. L. Reid, Charleston; secretary, Dr. C. M. Nicholson, St. Louis; treasurer, Dr. A. Franklin Wells, Salisbury, and chairman of the committee of public health and legislature, Dr. Frank J. Lutz, St. Louis. The house of delegates, among other matters, took under consideration the movement to change the statute of limitation from five years to one year as regards the possibility of suits for malpractice.

MONTANA.

Diphtheria in Anaconda.—Diphtheria has prevailed in Anaconda for several months and at present appears to be on the increase. The health authorities now propose to make a thorough examination of all suspects, and to inaugurate a system of isolation and quarantine in the hope of stamping out or at least checking the progress of the disease.

State Association Meeting.—The twenty-eighth annual session of the Montana State Medical Association was held at Butte, May 9 and 10, with the president, Dr. Donald Campbell, Butte, in the chair. Of the 175 members 63 were present, so that this meeting of the society was the most fully attended of any in its history. The different sections of the state were better represented than heretofore, and great interest was manifested in the proceedings. The president's address dealt with medical progress of the past year, and he paid especial attention to the publicity given the nostrum question. One of the most interesting papers of the session was that read by Dr. H. T. Ricketts of the University of Chicago on spotted fever, or the tick disease. Dr. Ricketts came to Montana as an original investigator in the hope of discovering the cause of the spotted fever which has existed so long in the state. He found eight cases in the western part of the state and seven of the patients died. The most common theory of the cause of the disease is the tick fever. This is combated by the inhabitants, because many people who are bitten by ticks do not get the disease. Dr. Ricketts strongly urged the appointment of a legislative committee to investigtae this matter and the appropriation of sufficient money by the legislature to carry on the investigation. The following officers were elected: Dr. O. Y. Warren, Warm Springs, president; Drs. Thomas D. Tuttle, Billings, Lawrence R. Packard, Whitehall, and Edgar F. Dodds, Missoula, vice-presidents; Dr. Grace Wilson Cahoon, Butte, secretary (re-elected); Dr. W. W. Taylor, Kalispell, treasurer, and Drs. George W. King, Helena, Edward W. Spottswood, Missoula, Thomas J. Murray, Butte, W. W. Williams of Northeastern Montana, J. H. Irwin, Great Falls, Elmer L. Southerland, Sheridan, and Fred F. Addix, Lewistown, councilors. The society will meet next year in Billings.

NEBRASKA.

Alumni Meetings.—The alumni banquet of Creighton Medical College was held May 14, at which over 80 alumni were present. Dr. T. J. Dwyer served as toastmaster.——The special alumni clinics of the University College of Medicine, Omaha, were held May 23 and 24. The alumni meeting was held May 23 and the annual alumni luncheon, May 24.

Hospital Cornerstone Laid.—The cornerstone of the new Methodist hospital, Omaha, was laid by Bishop John W. Hamilton, May 24. The new hospital will cost about $100,000.——The building fund of the new Clarkson Hospital now amounts to about $22,000, and the committee is confident that the $13,000 additional required will be secured within the year.

Commencement.—The Omaha Medical College, University of Nebraska College of Medicine, held its annual commencement exercises May 24, when a class of 7 was graduated. The address of the evening was delivered by Dr. James Carroll, United States Army, on the "Microscope in Medicine." Dr. Alexander S. von Mansfelde, Ashland, delivered an address on the "History of Medicine in Nebraska," and Dr. William F. Milroy, Omaha, spoke on the history of the college.—Creighton Medical College, Omaha, graduated a class of 39, May 15.

NEW HAMPSHIRE.

Dartmouth Alumni Meet.—At the annual meeting of the Dartmouth Medical College Alumni Association, held in Concord May 17, the following officers were elected: President, Dr. William A. Mcgrath, Louden; vice-presidents, Drs. Roy V. Baketel, Methuen, Mass., and David P. Goodhue, West Springfield, N. H., and secretary and treasurer, Dr. Howard N. Kingsford, Hanover.

Military Surgeons Meet.—The annual meeting of the New Hampshire Military Surgeons was held in Concord, May 17. It was voted to hold an adjourned meeting on governor's day at the Grand Army encampment at The Weirs this summer. Dr. Granville P. Conn reported progress on his history of New Hampshire military surgeons, which will make a book of about 500 pages. Dr. Ezra Mitchell, Lancaster, was elected president; Dr. Granville P. Conn, Concord, secretary, and Dr. Ferdinand A. Stillings, Concord, treasurer.

New Hampshire Medical Society.—The one hundred and fifteenth annual meeting of the New Hampshire Medical Society was held in Concord, May 17 and 18, under the presidency of Dr. Ferdinand A. Stillings, Concord. One of the principal subjects for discussion was the question of the taking of contract work by members of the profession and society, but no definite conclusion was reached. The following officers were elected: President, Dr. Ira J. Prouty, Keene; vice-president, Dr. John H. Neal, Rochester; treasurer, Dr. David M. Currier, Newport; secretary, Dr. D. Edward Sullivan, Concord, and necrologist, Dr. Eli E. Graves, Penacook. At the annual banquet Dr. Forrest L. Keay, Rochester, presided as toastmaster.

NEW MEXICO.

State Association Meeting.—The New Mexico Medical Association convened for its twenty-fifth annual session at Albuquerque, May 2 and 3, under the presidency of Dr. Percy G. Cornish. The mayor of Albuquerque welcomed the association to the city, and the members were the guests of the Bernalillo County Medical Society at a banquet on the first evening, over which Dr. P. G. Cornish presided as toastmaster. The following officers were elected: President, Dr. Thomas B. Hart, Raton; vice-presidents, Drs. Samuel M. Lane, Silver City, William T. Joyner, Roswell, and Daniel H. Carns, Albuquerque; secretary, Dr. E. R. McBride, Las Cruces; treasurer, Dr. Harry M. Smith, Las Vegas; councilor, Dr. Samuel D. Swope, Deming (re-elected); editor-in-chief of the *Territorial Medical Journal*, Dr. G. L. McLandress, Albuquerque, and associate editors, Drs. Francis T. H. West, Las Vegas, James H. Wroth, Albuquerque, William W. Phillips, Roswell, and R. E. McBride, Las Cruces. Las Cruces was selected as the next place of meeting.

NEW YORK.

Clairvoyants Licensed.—An ordinance was recently enacted in Buffalo requiring clairvoyants to pay an annual license fee of $100. This is equivalent to the recognition by the city of parasites to rob the ignorant and poor.

Recovers Damages.—Dr. Edward McGuire, Buffalo, recovered $200 damages and costs in the municipal court for damages sustained to his automobile, which was wrecked by colliding at night with a pile of coal on which there was no danger signal.

Personal.—Hon. D. S. Lockwood, Buffalo, a member of the state commission in lunacy, is seriously ill.——Dr. William Gaertner, Buffalo, has been elected president of the local branch of the German-American National Alliance.——Dr. Frederick Preiss, Buffalo, who recently underwent a serious operation at the Sisters' Hospital, is progressing toward recovery.——Dr. J. F. Munson, a graduate of the University of Michigan, for two years an assistant to Prof. Victor C. Vaughan, has been appointed resident pathologist at the Craig Colony for Epileptics, Sonyea.

Buffalo Health Report.—Health Commissioner Greene submitted his annual report, which shows the death rate was only 14.14 per 1,000 for 1905. The rate for children under 6 years old was 4.05. Dr. Greene rehearses what the department has done to preserve the health of the city, and makes various recommendations looking toward better sanitation. He also asks for additional milk inspectors to inspect the milk supply at its source in the country.

Alumni Arrangements.—The executive committee of the alumni of the Medical Department of the University of Buffalo has arranged for a four-day meeting of the association, to be held at Buffalo, May 29, 30, 31 and June 1. Clinics will be held at all the hospitals and dispensaries of the city. Dr. Denslow Lewis, Chicago, is to give an address on "The Social Evil." On May 29 the resident alumni will entertain the visiting alumni at luncheon at the University Club. On May 30 the teaching staff will entertain the alumni at luncheon at the University Club, and a luncheon will be given to alumni at the Saturn Club on the following day.

Increase in Insane.—An increase of 547 in the total insane persons cared for in institutions over any previous year in the history of the state is shown in the annual report of the State Charities Aid Association to the state commission in lunacy. The number of insane in 1905 was 27,408, or one demented for every 294 of population, while in 1900 there was one for every 305. As a mitigating circumstance the report points out that while the total of insane cared for last year was larger than ever before, the increase in new cases was the smallest of the last 15 years. The number recorded in 1905 is accounted for by the improvements in the care of the health of insane persons by which many lives are declared to have been spared which would formerly have been lost. In 1904 the state hospitals showed more than 3,000 patients over their certified capacity, while in 1905 the excess was but slightly over 1,600.

New York City.

Sanatorium for Hebrew Children.—The twenty-eighth annual report of this institution announces that the new wing will be opened this summer. During the last season 2,023 children were cared for, and also many nursing mothers.

Sea Breeze Home Opens.—The summer season of this home has begun, and while it is unable to care for all the needy mothers and babies in New York, it has sent invitations to hospitals, clinics, dispensaries, schools, physicians and employers, asking them to inform it of those in need.

For Seaside Hospital.—Mrs. Andrew Carnegie has given the Seaside Hospital for Crippled Children $10,000 toward the new hospital. This brings the Association for Improving the Condition of the Poor within $44,000 of the $125,000 which must be raised in order to secure the $125,000 offered by John D. Rockefeller.

Spotted Fever More Fatal.—The records of the health department show that while cerebrospinal meningitis is less prevalent since the weather has become warmer, the fatality has increased. In the ten weeks after the middle of March 369 cases were reported, with 285 deaths. From the beginning to the middle of May there were 96 new cases and 97 deaths from the disease.

Physician Held for Performing Autopsy.—Dr. I. O. Woodruff, Jr., head of one of the babies' pavilions at Bellevue, has been charged with performing an autopsy without consent of the next of kin on the body of a seven-months-old baby who died of typhoid fever. Dr. Woodruff claimed that the undertaker gave him permission, and thought as only three cases of this disease in infancy had been reported in medical annals, an autopsy would be helpful to science.

Red Cross Hospital.—The cornerstone of the American Red Cross Hospital was laid May 22 by William T. Wardwell, who gave the land on which the building is erected. The hospital is not new, though it has had to close its doors during the erection of the present building. The site is valued at $100,000, and the new building, which will be ready for occupancy in August, will cost $120,000. It was stated that the hospital would eliminate not only beer, but all alcoholics, which might be used as a regular part of hospital diet.

Health in the Schools.—This was the subject discussed at the regular meeting of the New York Academy of Medicine on May 24. Dr. J. J. Cronin, assistant chief sanitary inspector, read a paper on "Health of the New York School Child from the Point of View of the Department of Health." Dr. Maxwell stated that no child should be allowed to attend school until 7 years of age. Dr. Abraham Jacobi thought the money expended for the military and pensions might be used to better advantage for the schools. Dr. J. G. Freeman hoped that the time would come when a midday meal would be provided for the schools, as was done in Paris. Dr. Henry Dwight Chapin said that physicians were generally agreed that the large majority of New York children were under-developed.

More sleep and better hygienic surroundings were needed. He hoped the time would come when the teeth of the school children would be attended to, as the eyes, noses and throats are at present.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended May 19, 1,252 cases of measles, with 37 deaths; 383 cases of tuberculosis, with 193 deaths; 370 cases of diphtheria, with 54 deaths; 305 cases of scarlet fever, with 28 deaths; 37 cases of whooping-cough, with 5 deaths; 31 cases of cerebrospinal meningitis, with 32 deaths; 15 cases of typhoid fever, with 4 deaths, and 83 cases of varicella, making a total of 2,476 cases, with 353 deaths.

Personal.—Dr. Stephen G. Cook, for 20 years police surgeon and for many years president of the board of police surgeons, has applied to be retired on account of failing health. ——Dr. Austin Flint, one of the oldest medical instructors in the country, received a silver loving-cup from the class of 1909, Cornell University Medical School, on the occasion of his resignation of the professorship of physiology, which he held continuously since 1861.——Dr. and Mrs. Charles T. Poore and Dr. and Mrs. Thomas E. Satterthwaite sailed for Europe on the *Finland* on May 26.

OKLAHOMA.

Many Insane.—The report of the superintendent of the Territorial Insane Hospital, Norman, shows that on May 7, 504 patients were registered at that institution, the highest mark in its record.

Convicted of Manslaughter.—Dr. John B. Irvin, Kaw City, because of killing Alpha Mann, a halfbreed Kaw Indian, has been found guilty of manslaughter, the penalty for which is not less than four years.

County Society Secures Home.—The Oklahoma County Medical Society has leased rooms in the new Martin Building, Oklahoma City, as its permanent headquarters. A room has been set aside for a medical library and pathologic museum.

Personal.—The governor has reappointed Dr. Benjamin F. Hamilton, Shawnee, and has appointed Drs. R. Hall, Pawhuska, and Edward F. Davis, Oklahoma City, as members of the commission to examine the Territorial Insane Hospital.—— Dr. Lewis T. Gooch has been elected alderman of the Third ward in Lawton.

OREGON.

Hospital News.—The new St. Mary's Hospital, Astoria, was dedicated with proper ceremonies by Architect Christie, Portland, April 29.

Alumni Election.—At the annual meeting of the alumni of Willamette University, Medical Department, Salem, May 1, Dr. Elza D. Johnson, Portland, was elected president; Dr. W. W. Allen, Jefferson, secretary.

Diphtheria in Portsmouth.—Diphtheria is so prevalent in Portsmouth that the investigating committee has recommended that the school children of the city be examined each morning for two weeks and that in all suspicious cases special examination of the throat shall be made; that the school be thoroughly fumigated and disinfected once a week and that special officers be detailed to enforce quarantine regulations.

State Health Association Formed.—The Oregon State Health Association was organized at Portland, May 16. It is composed of state, county and city health officers, with county judges, mayors of incorporated towns and members of the service as honorary members. Dr. Edward P. Geary was made first president of the association; Dr. Esther C. Pole, vice-president, and Dr. Robert C. Yenney, secretary and treasurer, all of Portland.

County and City Society Meeting.—At the annual meeting of the Portland County and City Medical Society, May 17, Dr. Robert C. Yenney was unanimously elected president; Dr. Luther H. Hamilton, vice-president; Dr. Allen W. Smith, secretary; Dr. Joseph A. Pettit, treasurer, and Drs. Katherine C. Manon, Ernest F. Tucker and Arthur H. Johnson, councilors. In the annual report of the retiring president he dwelt especially on the admission into the society of 72 new members.

Commencements.—The forty-first annual commencement exercises of Willamette University, Medical Department, Salem, were held May 1, when a class of 14 obtained degrees.——The University of the State of Oregon, Medical Department, Portland, graduated a class of 16, April 30. Dr. Andrew C. Smith delivered the annual address on "The Duties of the Medical Citizen," Dr. George F. Wilson the charge to the graduates, and President P. L. Campbell of the University of Oregon conferred the degrees.

State Association Meeting.—The thirty-second annual meeting of the Oregon State Medical Association was held in Portland, May 15 and 16, under the presidency of Dr. George F. Wilson, Portland. Dr. Harry Lane, mayor of Portland, delivered the address of welcome to the visiting physicians, and Dr. Wilson in his presidential address devoted especial attention to organization, urging that physicians organize along broad and practical lines. The resolutions introduced by Dr. J. P. Tamiesie, recommending the establishment of state and national sanitoria for tuberculosis, were adopted with modifications. The following officers were elected: President, Dr. E. Barton Pickel, Medford; vice-presidents, Drs. John A. Reuter, The Dalles, H. M. Shaw, Ashland, and Edna D. Timms, Portland; treasurer, Dr. Amelia Ziegler, Portland; secretary, Dr. Luther H. Hamilton, Portland; delegate to the American Medical Association, Dr. Henry W. Coe, Portland; alternate, Dr. George F. Wilson, Portland, and councilors, Drs. Andrew C. Smith, Portland, and William J. May, Baker City. The Portland City and County Medical Society entertained the association at a banquet May 16, over which Dr. Henry W. Coe presided as toastmaster. The association adjourned to meet in Astoria in July, 1907.

PENNSYLVANIA.

Philadelphia.

Money for Hospital.—An entertainment given by patronesses of the Bryn Mawr Hospital, May 25, at the Merion club, realized $2,000 for the institution.

Antiquack League.—An antiquack league is in process of formation in this city, directed against irregular physicians, "patent-medicine" dealers, and all forms of quacks and charlatans. The league is headed by Drs. S. Solis-Cohen, Persifor Frazer and Henry Beates.

Personal.—Dr. John H. Brinton, professor of surgery in Jefferson Medical College, has tendered his resignation, to take effect at the end of the present college year.——Dr. Charles A. Groff was thrown from a trolley car May 23 and sustained a fracture of the left fibula.——Dr. Martha G. K. Schetky sailed for Europe May 24.——Dr. W. W. Keen was elected president of the American Baptist Missionary union at the meeting held in Dayton, Ohio, May 22.

Hospital Site Purchased.—At a meeting of the board of trustees of the Frankford Hospital May 25, announcement was made of the purchase for $37,000, of a new site at Frankford avenue, Franklin and Wakeling streets, covering an area 220 by 240 feet. A stone three-story house on the property will be used as an administration building. To this additional wings will be added. The report of the hospital shows that 1,300 cases have been treated in the institution in the last fifteen months.

Women Physicians Banquet.—The alumnæ of the Woman's Medical College held a banquet May 24, the largest in the history of the college. Graduates were present from San Francisco and Pasadena, Cal., Ontario, Seattle, Wash., and Manhattan, Kan. Dr. Mary Butler was toastmaster, and the following responded to toasts: Dr. Elizabeth Keller, Boston; Dr. Frances Baker, Media, Pa.; Dr. Mary Griscom, Philadelphia; Miss Agnes Repplier; Dr. Alice W. Tallant; Dr. Elizabeth Harden, Baltimore; Dr. Mary Evans, Pottstown; and Dr. Frances Bartlett, Philadelphia.

Coroner to Probe Illicit Drug Trade.—The coroner has taken steps to expose persons who sell drugs of a habit-producing character. This is done as a result of a death being reported to his office of a young woman, a victim of the cocain habit. It was learned by the deputy coroner that in certain sections of this city cocain, morphin and opium are sold, disguised as catarrh cures, and other proprietary remedies. The deputy purchased these materials, without difficulty, in half a dozen different stores, and examination by the coroner's physician revealed them to be composed of practically unadulterated cocain and morphin. As a result of the investigation several arrests have been made.

Health Report.—The total number of deaths reported for the week reached 519. This is a decrease of 48 from last week and an increase of 119 over the number in the corresponding period of last year. The principal causes of death were: Measles, 4; scarlet fever, 3; pertussis, 5; diphtheria, 10; meningitis, 2; consumption, 54; cancer, 29; apoplexy, 23; heart disease, 47; acute respiratory disease, 68; enteritis, 35; cirrhosis of the liver, 6; Bright's disease, 34; appendicitis, 7; suicide, 4; accidents, 23; and marasmus, 3. There were 381 cases of contagious disease reported, with 47 deaths, as compared with 428 cases and 48 deaths in the previous week. There were 255 cases of typhoid fever reported, with 33 deaths; in the previous week 309 cases of typhoid fever, with 48 deaths were reported.

Medical Inspections for April.—The report of the division of medical inspection of the bureau of health shows that the number of inspections made, excluding the schools, during the month, aggregated 6,295. The inspectors ordered 1,089 fumigations and examined 40 patients for special diagnosis. They made 4,921 visits to the schools throughout the city and excluded 786 children from attendance. They performed 479 fumigations, administered 224 injections of antitoxin, and collected 168 cultures for examination. During the month 5,775 inspections of milk were made, comprising 112,430 quarts. Of this number 170 quarts were condemned. Four of the examinations were chemical and 859 were microscopic. The division of disinfection of the bureau of health shows that the number of fumigations performed were for smallpox, 3; scarlet fever, 174; diphtheria, 333; typhoid fever, 176; tuberculosis, 213; miscellaneous, 1,417, and schools, 31.

Scientific Sewage Disposal.—A meeting of the water commission recently appointed by the mayor was held May 21, and plans to do away with the use of water ways, as open sewers, by the construction of a system of sanitary sewage disposal along modern scientific lines, were discussed. The commission's conference is preliminary to the action to be taken by the council's survey committee, which has before it the draft of an ordinance providing for a special sewage commission of five members, to be named by the mayor. Plans for such a system were drawn some years ago by Chief Webster of the survey bureau. He advocated a system of sewage-disposal independent of a system for surface and storm-water drainage. The plan is to construct intercepting sewers along the banks of the Delaware and Schuylkill rivers, with basins at the junction of the sewers in the southern part of the city, where the sewage is to be treated chemically and rendered bacteria free. In view of the great cost of the installment of such a plan, and the present expenditure of $25,000,000 for water filtration, the project will not be instituted until the completion of the filtration system and the repletion of the city's funds. It is thought that the adoption of plans herein set forth will pave the way for the compulsion by the state of the adoption of similar systems in all towns draining their sewage into the city's water supply.

SOUTH CAROLINA.

State Association Meeting.—The annual meeting of the South Carolina Medical Association was held in Columbia, April 17, 18 and 19. Dr. Paul B. Barringer of the University of Virginia gave the public address on "The Drugs that Enslave," and Dr. W. T. English, Pittsburg, delivered an address on "Subsidiary Contributions to Medical Success." Drs. James L. Napier, Blenheim, and William M. Lester, Columbia, were re-elected, and Drs. William L. Mauldin, Greenville, and Harry H. Wyman, Aiken, elected members of the State Board of Medical Examiners. Dr. Paul M. Barringer of Virginia was made an honorary member of the society. The following officers were elected: President, Dr. T. Prioleau Whaley, Charleston; vice-presidents, Drs. W. P. Timmerman, Edgefield, Henry Holbeck, Columbia, and Michael G. Salley, Orangeburg; secretary, Dr. Walter Cheyne, Sumpter; treasurer, Dr. Charles P. Aimar, Charleston; councilors, Drs. Theodore G. Croft, Aiken, F. H. McLeod, Florence, Hugh R. Black, Spartansburg, James H. McIntosh, Columbia, and William B. Cox, Chester; associate editor of the *State Medical Journal*, Dr. J. Wilkinson Jervey, Greenville; delegate to the American Medical Association, Dr. J. H. Hamilton, Union, and delegate to the Medical Society of the State of North Carolina, Dr. William C. Black, Greenville.

TEXAS.

Northwestern Association Meeting.—The Northwest Texas Medical Association and the Wise County Medical Society met in joint session in Decatur, May 8. The following officers were elected: President, Dr. John A. Embry, Decatur; vice-president, Dr. Wade H. Walker, Wichita Falls, and secretary and treasurer, Dr. L. H. Reeves, Decatur. The next meeting will be held in Decatur in October.

Hospital News.—One of the new buildings of the North Texas State Hospital, which will accommodate 200 patients, is completed, and the other two buildings, which will accommodate 300 additional patients, will be ready in 60 days.——Arrangements have been made with the Sisters' Hospital, Waco, for the care of injured or sick employés of the M., K. & T. System. Emergency or branch hospitals are to be established at Smithville and Greenville.——The Baptist Memorial Hospital, Dallas, which is being erected at a cost of $250,000, will, it is expected, be ready to receive patients in November.——The sanitarium of Drs. Arthur C. Scott and K. R. White, Temple, is to be enlarged by the erection of a two-story addition designed especially for surgical cases.

State Association Meeting.—The thirty-eighth annual convention of the State Medical Association of Texas was held in Fort Worth, April 24, 25 and 26, under the presidency of Dr. J. Edward Gilcreest, Gainesville. Mayor W. D. Harris delivered an address of welcome on behalf of the city, and Dr. Bacon Saunders, president of the Tarrant County Medical Society, welcomed the association on behalf of that organization. Dr. Gilcreest responded to the addresses of welcome. Among the important papers read in the section on state medicine were those by Dr. William S. Carter, Galveston, on "Education and Sanitation; Dr. John S. Lankford, San Antonio, on "Medical Supervision of Public Schools," and Dr. Frank Paschal, San Antonio, on "The Tuberculosis Problem in the State of Texas." The house of delegates discussed the question of desirable legislation for the protection of public health and endorsed the proposed anatomic bill. The president in his annual address spoke of the need of state medical inspection for public schools and of the better regulation of the licensure of physicians in the state. The annual oration was delivered by Dr. Milus M. Morely, Greenville, on "Diversion Is Essential for the Healthy Active Mind." Dr. E. C. Dudley, Chicago, presented a paper on "The Preservation of the Functions of the Broad Ligaments in Connection with Other Pelvic Operations," and Dr. George V. I. Brown, Milwaukee, a paper on 'Surgical Treatment of Hare-lip and Cleft Palate." The members of the Tarrant County Medical Association entertained the state association at a barbecue at Handley in which nearly a thousand physicians participated. The following officers were elected: Dr. Garland B. Foscue, Waco, president; Drs. F. P. Miller, El Paso, D. Stuart Wier, Beaumont, Andrew B. Small, Waxahachie, vice-presidents; Drs. Stephen T. Turner, El Paso, J. W. McCarver, Brownwood, Hatch W. Cummings, Hearne, Joseph H. McCracken, Mineral Wells, and Millington Smith, Sulphur Springs, councilors; Drs. J. T. Wilson, Sherman, Charles E. Cantrell, Greenville, Arthur C. Scott, Temple, Stephen T. Turner, El Paso, and Frank Paschal, San Antonio, delegates to the American Medical Association; Drs. John S. Turner, Terrell, Benjamin M. Worsham, Austin, Thomas F. Kittrell, Texarkana, M. L. Graves, Galveston, and Robert W. Knox, Houston, alternates; Dr. Samuel C. Red, Houston, trustee, and Dr. William S. Carter, Galveston, orator. A vote of thanks was tendered to Dr. George R. Tabor, state health officer, for his work in keeping the state free of yellow fever last year, also for limiting the spread of smallpox. The association adjourned to meet in Mineral Wells in 1907.

UTAH.

Personal.—Dr. and Mrs. Everett O. Jones, Murray, left May 10 for a trip to Europe, and may return by way of the Pacific.——Dr. William R. Calderwood, Salt Lake City, has been appointed assistant physician of Salt Lake County, vice the late Dr. James Osterman.

Will Establish Medical School.—At a special meeting of the board of regents of the University of Utah, April 13, it was decided to establish a medical school as a regular part of the institution. Prof. R. V. Chamberlain was elected dean and the regents authorized the establishment of a faculty of 15.

County Medical Society.—At the annual meeting of the Utah County Medical Society, May 2, in Provo, the following officers were elected: President, Dr. Robert E. Steele, Lehi City; vice-president, Dr. George E. Robinson, Provo; secretary and treasurer, Dr. Frederic Clift, Provo (re-elected), and censors, Drs. Westwood, John W. Aird and Fred W. Taylor, of Provo.

Warning Against Spotted Fever.—Dr. Theodore B. Beatty, Salt Lake City, secretary of the State Board of Health, on May 11 instructed the health officers of Bingham and Murray to isolate patients suffering from cerebrospinal meningitis. Several deaths from the disease are reported to have occurred recently in Salt Lake City, and Dr. Beatty considers that extra precautions should be taken to prevent the spread of the disease.

State Society Meeting.—The Utah State Medical Association convened for its twelfth annual meeting at Salt Lake City, May 8, under the presidency of Dr. Emerson F. Root, Salt Lake City. About 250 were in attendance. The president in his annual address gave a retrospective view of the medical conditions in Utah during the days when it was a territory, and laid stress on the present conditions existing, the large number of hospitals and medical institutions in the state, and predicted that a second medical college would soon be needed. The following officers were elected: Dr. Frederic Clift, Provo, president; Drs. Augustus C. Behle, Salt Lake City, and Edward M. Conroy, Ogden, vice-presidents; Dr. Walter S. Ellerbeck,

Salt Lake City, secretary, and Dr. James N. Harrison, Salt Lake City, treasurer. Drs. John W. Aird, Provo, and Philo E. Jones and Ira A. E. Lyons, Salt Lake City, were chosen as trustees. The association voted $200 for the relief of physicians in San Francisco and $50 for the N. S. Davis memorial. It was decided that a committee should be appointed for the purpose of revising the constitution and by-laws to conform to the plan recommended by the American Medical Association. The association voted to accept the proposition of the *Utah and Denver Medical Journal* for the publication of the transactions of the organization. The Cache Valley Medical Society was recognized as a component branch of the association. In the evening a banquet was given to the association by the local members, at which Dr. Eugene W. Whitney presided as toastmaster. It was decided to hold the next meeting in Salt Lake City.

GENERAL.

Supplement.—A loose supplement accompanies this issue of THE JOURNAL, containing a photograph of Dr. W. J. Mayo, the president-elect of the American Medical Association.

Vacancies in the Army Medical Corps.—A preliminary examination of applicants for appointment in the medical corps of the Army will be held at various military posts throughout the United States on July 31, 1906. Full information in regard thereto may be obtained from the surgeon general of the Army. Applications must be filed prior to June 30. Thirty years is the prescribed maximum age, and individuals whose age exceeds that limit are not eligible for examination.

Does Not Want to be Governor.—The newspapers of Kentucky have been urging Dr. J. N. McCormack for governor of Kentucky, and for a while it appeared to be a foregone conclusion that he would be the next nominee of the Democratic party, which would mean election. But it seems that the doctor's name was used without his authority, for he has published a statement to the effect that he is not a candidate, and will not be. The following is from the Kentucky newspapers:

> Almost constant absence from the state for several months has prevented me from giving earlier attention to the kind statements by newspaper friends in many sections of the state that I would probably be a candidate for governor before the next convention or primary. It may seem unnecessary and somewhat indelicate to decline an honor which has never been tendered me, but I am receiving so many inquiries on the subject that it seems proper for me to speak. I not only will not be a candidate for this or any other office, but am absolutely without political aspirations not connected with medical and public health work.
>
> The rapid development in the field of preventive medicine, and the knowledge that almost half of the sickness and deaths in Kentucky every year are due to domestic pestilence, consumption, typhoid fever, diphtheria, scarlet fever, dysentery, cholera infantum and other communicable diseases, is arousing more and more popular attention every year, and will soon make the state board of health one of the most important and useful branches of the state government, and I have long since decided to devote the remainder of my days to this life-saving work. I am not the less grateful to my friends all over the state, in whose confidence and partiality this suggestion originated, and ask them to give their support to one better trained and qualified to succeed our great young governor."

Health Report of the Isthmus for April.—In his official report for April Dr. Gorgas calls attention to the constantly decreasing hospital sick rate among the employés. During the month there was an entire absence of any quarantinable disease, either smallpox, yellow fever or plague. There has been no case of plague since last August, no case of yellow fever since last December, and no smallpox during the preceding year. Among the civil population, not employés of the canal commission, the showing is equally as good. The death rate among 5,000 whites was 14 per 1,000, and among 22,000 negroes was 33 per 1,000; 6 white and 62 negro employés having died during the month. Pneumonia was by far the heaviest cause of death among the employés, 32 having died from this disease; of these 2 were whites and 30 were negroes. Malarial fever caused 7 deaths, a very much smaller number than any former month. All the deaths from malarial fever were among the negroes. Dysentery caused 6 deaths, 2 among the whites and 4 among the blacks. Of employés from the United States only 3 died, 1 from pneumonia, 1 from dysentery and 1 from accident. There has recently been criticism of the water furnished by the commission, and Dr. Gorgas calls attention to the small number of water borne diseases this report shows among the employés, namely, 6 from dysentery and 2 from typhoid fever. In the civil population, outside of employés, there were 2 deaths from typhoid fever, 8 from dysentery and 19 from other intestinal diseases. This, considering the fact that the Isthmus is a tropical country, and the large proportion of the population who are children in the towns of Panama and Colon, is not a bad showing. This report, Dr. Gorgas states, is the most favorable one that the health department has been able to make since its establishment.

CALIFORNIA.

Books, Instruments, Etc., Needed.

In behalf of the physicians of San Francisco, we again make an appeal to our readers for books, instruments, etc. From private letters and from personal conversation with those who have been there and know actual conditions, we do not hesitate to say that there has never been a time when there was greater need for a practical illustration of fraternalism between physicians than there is at present. Most physicians have duplicate copies of books in good condition, books for which they have no use, bound volumes of journals, etc., which they can contribute without any self-sacrifice whatever. There need be no fear of getting too many copies of one book for there are at least 500 physicians, besides the libraries, among whom to distribute such volumes. The plea for surgical instruments of all kinds is still being repeated. While THE JOURNAL will be glad to receive books, etc., to be forwarded, it will probably be just as satisfactory if those who have anything to contribute will send direct to the chairman of the committee on collection of books, instruments and medical supplies, Dr. Philip King Brown, Lane Hospital, corner of Clay and Webster streets, San Francisco.

The California Relief Fund.

As will be noticed below, the contributions to the San Francisco relief fund now exceed $10,000; but it ought to be $100,000, and would be if those who are able to give realized the actual need of financial help at this time by the physicians of San Francisco. From information received we know that many societies are in course of collecting funds yet to be forwarded. While we are asking for "more" in behalf of the California physicians, we extend thanks for what has already been received.

Pennsylvania Fund.

The following additional subscriptions have been received for the Pennsylvania fund since last week:

Center County Medical Society	$15.00
Gardner, J. H., Stoystown	1.00
McKinley, H. C., Somerset	1.00
Northampton County Medical Society	50.00
Reber, Wendel, Philadelphia	5.00
Unaccounted	5.00
Wayne County Medical Society	5.00
Wilson, Henry	1.00
	$83.00
Previously acknowledged	$1,916.50
Total	$1,999.50

The following additional contributions have been received at THE JOURNAL office to Tuesday morning at 9 a. m.:

Academy of Medicine of Toledo and Lucas County	$100.00
Bardin, Z. M., Lynchburg, S. C.	2.00
Bridgham, S. D., Walla Walla, Wash.	5.00
Crawford County Medical Society	6.00
Dodge, F. A., Le Suer, Minn.	5.00
El Paso County (Colo.) Medical Society	60.00
Fairfax, H. R., McComas, W. Va.	5.00
Gage, Homer, Worcester, Mass.	10.00
Howe, H. A., Chicago, Ill.	1.00
Kerr, Abram, Ithaca, N. Y.	5.00
Lincoln County Medical Society	10.00
Lundgren, C. E., Harris, Minn.	2.00
Mayer, L. H., Johnstown, Pa.	2.00
Monongalia County Medical Society	50.00
Morris, W. E.	1.00
Perkly, A. B., Morenci, Ariz.	5.00
Roberts, T. M.	1.00
Scott County Medical Society, Davenport, Iowa	25.00
Simpson, A. W., Washington, Ga.	5.00
Smith, F. C., New York City	5.00
Teschan, Rudolf C., Milwaukee, Wis.	5.00
Thompson, Harry French, Buffalo Center, Iowa	10.00
Thorn, J. W., Cllo, Ark.	2.00
Tupper, A. M., Rockport, Mass.	5.00
Tuthill, A. M., Morenci, Ariz.	5.00
Washington, J. N., Van Buren, Mo.	2.00
Welst, Sard, Longmont, Colo.	5.00
Lafayette County (Wis.) Medical Society, $2.00	
Birkbeck, S.	$1.00
Lehnkering, C. F.	$2.00
Lawrence County (Ind.) Medical Society, $12.00	
Berns, J. D.	$1.00
Sherwood, W. C.	$1.00
Dines, W. H.	1.00
Shrum, Riley	1.00
Dynemn, J. R.	1.00
Smith, W. H.	1.00
Emery, C. H.	1.00
Stipp, F. E.	1.00
Hunter, F. S.	1.00
Walls, G. W.	1.00
Kelly, J. C.	1.00
White, G. W.	1.00
Pottawatomie County (Okla.) Medical Society, $11.00	
Anderson, R. M.	$1.00
Rowland, V. D.	$1.00
Bradford, W. C.	1.00
Sanders, T. S.	1.00
Douglas, G. R.	1.00
Sanborn, G. H.	1.00
Ellis, J. B.	1.00
Scott, J. H.	1.00
Feigg, J. M.	1.00
Walker, J. A.	1.00
Rice, E. F.	1.00

St. Louis County Medical Society, $95.00:

Ayers, G. T.	$5.00	Knauff, M. K.	$5.00
Bray, C. W.	5.00	Keyes, C. R.	3.00
Bagley, W. R.	1.00	Lyman, F.	2.00
Boyer, S. D.	1.00	Linnerman, N. L.	1.00
Braden, A. J.	5.00	McCoy, M.	1.00
Collins, H. C.	5.00	McCuen, J. A.	5.00
Coventry, W. A.	2.00	Magie, W. H.	5.00
Davis, H. S.	5.00	Oredson, O. A.	3.00
Davis, G. W.	2.00	Parker, O. W.	5.00
Deslauriers, A. A.	1.00	Pare, L. T.	2.00
Greeley, L. Q.	2.00	Sewell, R. J.	2.00
Graham, D.	5.00	Taylor, A. C.	5.00
Hirschfield, M. S.	3.00	Walker, A. E.	1.00
Hoode, H.	3.00	Walker, H.	5.00
Jern, J. H.	2.00	Weston, J. B.	3.00

Shawnee County (Kas.) Medical Society, $13.00:

Alkire, H. L.	$1.00	McVey, W. E.	$1.00
Andrews, A. S.	1.00	Powell, L. M.	1.00
Chamberlain, D. E.	1.00	Righter, W. H.	1.00
Eastman, B. D.	1.00	Taylor, N. J.	1.00
Lewis, J. P.	1.00	Wehr, W. A.	1.00
Lindsay, W. S.	1.00	Yates, W. W.	1.00
Minney, J. E.	1.00		

Buchanan County (Mo.) Medical Society, $35.00:

Bansbach, J.	Kenney, W. L.
Campbell, O. B.	Leonard, P. J.
Carpenter, S. F.	MaGill, W. J.
Dandurant, L. J.	Morton, Daniel.
Doyle, Thos. H.	Paulette, A. W.
Doyle, T. M.	Potter, T. E.
Dunsmore, J. M.	Sampson, C. M.
Elam, W. T.	Sampson, J. H.
Fassett, C. W.	Spencer, Floyd H.
Forgrave, L. R.	Smith, B. H.
Geiger, Jacob.	Timerman, A. R.
Geiger, G. G.	Todd, L. A.
Gleaves, O. G.	Wallace, C. H.
Good, C. A.	Walker, H. L.
Gray, A. L.	Wallis, William.
Heddens, J. W.	Willman, R.
Kessler, S. F.	Woodson, C. R.

Cabell County Medical Society, $17.00:

Bloss, J. R.	Hawes, C. M.
Brown, C. M.	Hicks, W. D.
Brown, J. D.	LeSage, I. R.
Bruns, W. F.	Moore, T. W.
Buffington, E. S.	Price, S. D.
Crary, A.	Sanns, H. V.
Enslow, C. R.	Swann, P. H.
Geiger, J. C.	Vickers, R. E.
Guthrie, J. A.	

Whitman County (Wash.) Medical Society, $45.00:

Benson, John.	Holzer, D. A.
Bumgarner, C. S.	Johnston, Wilson.
Greene, H. M.	Post, C. M.

Total	$ 570.00
Additional Pennsylvania contributions	83.00
Previously acknowledged	9,531.40
Grand total	$10,184.40

FOREIGN.

Queensland Leper Lazarette.—The government has decided to remove the lazarette from its present position near Dunwich, on Stradbroke Island, to Amity Point. The *Australasian Medical Gazette* states that it is probable that the lazarette on Friday Island will be closed, and the inmates removed to Amity Point. The new lazarette will be in two establishments, one for whites and the other for colored patients.

Damages for Roentgen Ray Burn.—Prof. G. Holzknecht of Vienna is one of the leading authorities and experts in Roentgen ray work, and has long been the official Roentgen ray medicolegal expert for the courts of Austria and director of the Roentgen ray department of the Vienna General Hospital. A cable report states that he was sued for damages of $7,500 on account of a serious *x*-ray burn resulting from his therapeutic application of the rays in 1902 in treatment of a cutaneous affection on the back of a male patient. There was no insinuation as to carelessness or neglect, but the court awarded the plaintiff the damages asked.

Syphilis of the Lungs.—Stoicescu and Bacacoglu of Roumania assert that syphilis of the lungs is liable to simulate tuberculosis of the lungs or pneumonia, pleurisy, chronic bronchitis or bronchiectasia. It probably is often mistaken for one of these affections, but mixed specific treatment is liable to do wonders. The trouble is usually a gumma which in time, untreated, entails a cavity and sclerosis. It is liable to develop in children with inherited syphilis as well as in adults. The treatment found most promptly effectual was daily inunctions with 4 gm. of blue ointment and administration of potassium iodid in progressive doses of 4 to 12 gm. a day. An abstract of their original article in a Roumanian paper is published in the *Munch. med Wochft.* for March 27, No. 13.

Insurance Fees and Lodge Practice

The Recent Reduction in Fees.

UNION P. O., LA., May 22, 1906.

To the Editor:—The question of fees for life insurance examinations is up for discussion and final settlement, and it should be settled right once for all, so that it may not be continually bobbing up in the future as a half-finished question.

Whether or not life insurance is now an honest enterprise may well be considered debatable. That it was so at one time may be allowed, but the recent probing into the *modus operandi* of these large corporations has demonstrated beyond all reasonable doubt that the original purpose for which they were brought into existence has lapsed or been lost sight of, and that they are now nothing more or less than immense aggregations of capital, that are being manipulated for the benefit of those who may obtain control of the management.

Mr. Lawson's advice in regard to the other large industrial enterprises might well apply to these, and it is doubtless true that the general public has ceased to invest in their stock as extensively as in the past. Whether or not the investment in a policy of any life insurance society under the existing régime is sound business would seem rather doubtful, and if no one purchased life insurance these corporations would of necessity soon go out of business. Mr. Lawson's statement that the promoters of industrial corporations, organized for the sole purpose of fleecing the general public, would cease to be when there was no longer a market for their fictitious wares becomes a self-evident proposition.

As a side light on this question is the medical examination fee which the various companies have suddenly discovered must be curtailed 40 per cent. in line with other proposed economics. If the interests of the policy-holders were being considered as is now the main contention, then their interests have been daily neglected, lo these many years, for the necessity seems to have arisen quite recently. The New York Life began economizing with its medical staff of examiners some years ago in the same way that is now proposed by the others, yet its policy-holders not only did not benefit thereby, but fared worse.

I venture the following statement, with full understanding of its import: I would not, as a simple business proposition, leaving out many other equally weighty considerations, invest money in a life insurance corporation that could not employ and pay full prices for the best medical talent to make its examinations; that did not always require a full urinary examination, and that did not use every means that medical science places at its disposal to secure favorable risks. The last place to economize for the benefit of the policy-holders is in the pay of those who stand between the unfavorable risk and the treasury of the company.

That medical men will be found to make examinations for $3, $2 or even $1, and in job lots at 50 cents each, is probable, but that any legitimate business enterprise can be conducted in this way is very unlikely.

There are in every community some physicians who reach out for everything available, by fair means or foul. They do fake work, cut prices, take any kind of questionable business that comes along, just so long as there is a dollar in it, and would drag the medical profession down into the mire, if it were not for counteracting influences. But these are not the men whom the respectable element of society or those with valuable business interests usually employ when in need of counsel.

I trust that the American Medical Association, at its next meeting, will take the stand for a flat examination fee of $5.

B. A. COLOMB, M.D.

Reduction in Fees an Injustice to the Physician.

CRESCENT CITY, CAL., May 23, 1906.

To the Editor:—I have been much interested in the communications recently published by you in relation to the examination fees for life insurance, and I think abundant argument has been adduced to convince any fair-minded person that any reduction in fees from the old scale is both unjust to the physician and detrimental to the best interests of the policy-holders.

Thirty years ago I received my degree and entered the practice of medicine and surgery, which I have continued until the present time; not a year having passed that I have not had more or less examining to do for nearly all the old-line companies. In fact, during a part of the first three years I traveled with one of the best life-insurance agents on the Pacific coast and did nothing but examine. I have given the matter of life-insurance work special study, and think I am fairly competent to say what a reasonable fee is for the professional knowledge and skill required in an intelligent and honest examination.

It seems strange to me that physicians not in sympathy with the reduction (and there certainly can not be many who are), are waiting for medical organizations to say whether or not they will submit to the cut. The consciousness of being right and reasonable should be all any high-minded physician, who scorns the idea of being a "cheap John" man should need to prompt him in at once to refuse to submit to the reduction.

When I was notified several years ago by one of the leading eastern companies that thereafter I would be allowed only $3 for an examination, I promptly notified them to revoke my commission. They very promptly replied, saying that owing to my past services and our very satisfactory relations in the work, they would make an exception in my case, and that I should continue as their examiner at the old rate of $5. I have done considerable work for the company since and my bills have been paid without a protest.

Recently I have been notified by circular letters by other companies to the effect that they would make a grading of fees from $3 up, according to the size of the policy applied for. In response to them I simply advised them that my minimum fee for examination is $5, and if that is not satisfactory to them they may erase my name from their list of examiners. I have not heard from them since.

We are not a labor union that must be organized to strike, nor do we want to be considered as such and shut out arbitrarily by a few arrogant insurance nabobs. It is well enough for medical societies to pass and to adopt resolutions protesting against arbitrary dictation of insurance companies, but there is a large percentage of practicing physicians throughout the United States who do not belong to any society, and I appeal to the manhood and professional dignity of those men and ask them to act independently in refusing to accept a "picayune" fee for a high-grade service.

GEORGE J. BROWN, M.D.

"An Effort to Repress the Evils of Contract Practice."

A correspondent writes: "The Niagara Falls Academy of Medicine is circulating a petition which is to repress the evil of contract and lodge practice which so belittles and degrades the profession. It is to be hoped that this degradation to commercialism in medicine will be effectually checked in Niagara Falls, New York and elsewhere. It would be well for the profession in larger cities, especially those in which there is a large foreign element, to follow the example of Niagara Falls, Let there be no honorable place in the medical profession for one who will so far degrade himself as to sell himself into bondage for a *per capita* price of from 75 cents to $1 per lodge member and signify his willingness to answer all calls. No conscientious well-educated physician can afford to accept such a contract. No freeman can ask from our profession such worthless services."

Societies Take Action.

DOCTORS' CLUB OF CHARLOTTESVILLE.

CHARLOTTESVILLE, VA., May 21, 1906.

To the Editor:—I inclose a blank to be used by our members in pursuance of a resolution adopted by the Doctors' Club of this city. I am happy to say that only one man has declined to live up to it and we hope he will reconsider the matter. The Piedmont Medical Society, composed of the most prominent physicians in four or five adjoining counties, has passed a similar resolution. Dr. McCormack is doing a good work for the honor and dignity of our profession.

To the ..... Life Insurance Company.

Gentlemen:—At a meeting of the Doctors' Club of Charlottesville, Va., on April 27, 1906, the following resolution was adopted:

Resolved, That it is the sense of the Charlottesville Doctors' Club that its members shall examine no applicant for Life Insurance for a less sum than $5, his fee to be paid direct by the Company—and that any member who examines for less stands expelled from the society without further action on the part of the society. This resolution does not apply to industrial insurance nor to companies not requiring a physical examination.

In compliance with the above resolution I hereby respectfully tender my resignation as examiner for your company after thirty days from date, unless I receive communication from the company, instructing me to make your examinations at the uniform rate of five dollars for the examination. Very respectfully, —— M.D.

J. H. BROWNING, M.D.

NORTH DAKOTA MEDICAL ASSOCIATION.

At the annual meeting of the North Dakota Medical Association at Fargo, May 16-17, 1906, the following resolution was unanimously adopted:

Resolved, That we endorse the action of the physicians of the Sixth District Medical Society in adopting a schedule of fees commensurate with the time required in such examinations; and

Believing that the duties of insurance medical examiners require a high degree of professional skill, absolute integrity and special attention to the interests of the insurance companies, we do hereby pledge ourselves to exercise skill and care in all examinations and to make no discrimination in examinations or fees to different companies, and further agree to be governed by the following schedule of fees:

$5.00 for each ordinary examination, including urinalysis.

$10.00 for each examination where microscopic examination of urine, sputum or other secretion is required.

$3.00 for each certificate of health for renewal of lapsed policy.

SCREVEN COUNTY (GA.) MEDICAL SOCIETY.

At a meeting of this society, held March 21, the following resolutions were passed:

WHEREAS, The Screven County Medical Society, after due deliberation, finds that a fee of less than $5 for life-insurance examinations is not commensurate with the work done; therefore be it

Resolved (1), That we, the members of the Screven County Medical Society, refuse to make any more life-insurance examinations for less than $5.

(2) That a copy of this resolution be sent to THE JOURNAL of the American Medical Association for publication, and also that a copy be sent to each of the old-line insurance companies.

OTHER COUNTY SOCIETIES.

At a meeting of the Troup County (Ga.) Medical Society, May 10, a resolution was adopted making the minimum fee for life-insurance examinations $5.

Similar resolutions were passed by the Fayette County (Pa.) Medical Society and the Cochise County (Ariz.) Medical Society.

At a regular meeting, held in Camden, April 3, the Medical Society of the County of Wilcox (Ala.) unanimously adopted a resolution making the fee for each life insurance examination $5, and deciding that under no circumstance would this rule be deviated from.

Correspondence

Cheaper Antitoxin.

CHICAGO, May 21, 1906.

To the Editor:—The statements in THE JOURNAL, May 12, page 1449, that the Memorial Institute for Infectious Diseases is said to be supplying antitoxin to the city for $1.50 per 3000 units as against $5.25, the sum charged by the alleged antitoxin trust, is misleading, as it compares the purchasing price of the Memorial Institute with the retail price to the general public of the other producers of antitoxin. The statement was not taken from the Chicago *Health Department Bulletin*, nor did the statement come from me.

The correction of the above statement in THE JOURNAL for May 19, page 1533, gives our purchase and selling prices correctly, $1.50 and $2.25 per 3000 units, and states that other firms have offered the Department of Health antitoxin at practically the same price. This latter statement is true also, but there is a story behind it. All the large producers about the first of the year 1904 doubled the price of antitoxin, not only to the public, but to the Department of Health of Chicago. They offered "Board of Health Serum" after a time at a low figure, but this "Board of Health Serum" had been branded by one of the high price firms as "inferior," and of course we could not consider the use of this antitoxin, as nothing but the

best can find a market in the Department of Health of Chicago. Not until within a few months has any of the high-priced firms offered to sell us the high grade product at the reduced price—not until we secured two ample sources of supply—the New York Department of Health, and the Memorial Institute for Infectious Diseases.

That there may be no further misunderstanding among physicians as to what I said in the Annual Report of the Department of Health on the subject of antitoxin, from which newspapers have quoted, and in some instances conveyed the wrong meaning, I wish you would publish the article entire, as this is all I have said on the subject at any time or place. It reads as follows:

The control of diphtheria and the saving of life depends largely on the early and liberal use of antitoxin. The almost prohibitory price of antitoxin established by the commercial houses has been and continues to be responsible for many deaths from this cause. Numerous examples which go to prove this assertion have been observed. A man earning by hard work $2 a day with seven in family to feed, house, clothe and school, finds three of his children complaining with sore throat. He calls a doctor, who suspects diphtheria. The father is told that it is best to give antitoxin at once and not wait for proof by microscopic examination. The cost of the first dose for the three children is $15, besides the doctor's fee. The doctor is not able to say positively at the moment that the cases are diphtheria and the man hesitates to pay out $15 on an uncertainty. The doctor is dismissed and goes away with a tortured mind. Two days later another doctor is called. The diagnosis is easy now. Antitoxin enough to use up the earnings of a month's labor is used, but too late—death claims two of the neglected children. If antitoxin were sold at a reasonable price such instances as just related would be exceedingly rare. When I related this instance to the agent of one of the high-priced producers of antitoxin, he replied that "the remedy is cheaper than coffins." And so we learn that the price of antitoxin is governed not by the cost of production, but by the price of coffins. The Department of Health will furnish anyone antitoxin at half the manufacturers' present price and if need be furnish the remedy free, but many do not know this, and others with a self-supporting though meager income hesitate to receive charity, and while they hesitate to seek the aid of charity or to pay two prices for a life-saving remedy, diphtheria is doing its deadly work on the innocent.

We can hardly blame a hard-working man who has a large family and a small income if he hesitates to pay $5 a dose for antitoxin when there is a doubt about the diagnosis, as often there is in the early stage of diphtheria. It is the difficulty of early diagnosis and the high price of antitoxin combined which delays the administration of the remedy and is responsible for many needless deaths from this disease. Antitoxin should be as cheap and as free as vaccine. Diphtheria, like smallpox, has been robbed of its terrors by science, but without the intelligent application of the remedies deaths from these diseases will be recorded as before the discoveries were made. Commercialism can be justly charged with the crime of delaying the application of one of these remedies. The public good is paying tribute to private greed.

What is the remedy? It is plain to the sanitarian for he has learned that a life lost is money lost. It is plain to the sanitarian that it would be true economy for a state or a city to establish and maintain laboratories for the production of antitoxin and vaccine to be distributed free to the people for protective and curative purposes. It is difficult for the sanitarian to demonstrate to law makers the wisdom and economy of spending money for saving human lives, but if these diseases were menacing the lives of hogs or cattle there would be less trouble in securing attention from such bodies. The law-making assemblies of this country have spent more time, money and thought on methods and means for saving from disease animals having a commercial value than they ever have for safe-guarding human life. The farmers of this country, through the teachings of the Department of Agriculture, understand animal dietetics and are taught how to prevent and cure diseases in marketable animals. They are taught little from any source how to protect themselves from disease or premature death. The burden of teaching people how to observe the laws of health and hygiene falls on the medical profession—the only body of men in the world that constantly and without regret works against its own financial interests. The physician unceasingly works to keep away epidemics and by advice and warning and by the discovery and application of remedies contributes materially to the health and longevity of the human race.

There is nothing unreasonable in calling on the city or state to aid in applying the remedies discovered and freely given to the people by the physicians. The physicians are reaping no pecuniary reward from the use of vaccine or antitoxin; on the contrary, their visits to the bedside of smallpox and diphtheria cases would be increased manifold if these two remedies were not known. Then why should commercial houses be permitted to reap a harvest from the discoveries made by physicians who have given them without price for the benefit of humanity? Antitoxin and vaccine could be produced at the state university at a minimum cost, which would be far less than is now paid to commercial houses. Not alone money but lives would be saved by placing the price of antitoxin within easy reach of all. Let Illinois keep pace with New York and Massachusetts and begin the manufacture of antitoxin and vaccine at once. It has been demonstrated during the last five years that vaccine properly used renders a person absolutely immune to smallpox. More than 2,000 exposures to smallpox were made at the Isolation Hospital without a single case resulting, thus demonstrating the complete protection from this disease afforded by vaccination when the remedy is properly used. Antitoxin, when early, freely and intelligently used, will render diphtheria practically harmless. The proper application of the remedy awaits the action of the city or state to free us from prohibitory prices.

HEMAN SPALDING, M.D.,
Chief Medical Inspector Chicago Department of Health.

The McBurney Incision in Appendicitis with Abscess.

NEW YORK, May 22, 1906.

To the Editor:—In THE JOURNAL, May 19, 1906, Dr. J. E. Summers says, on page 1510: "I have done the McBurney incision in hundreds of patients, a few of these being pus cases, but it is a dangerous incision for this latter class, even in the hands of the most experienced." My own experience has been so directly at variance with this statement that it seems best to go on record in the matter. For some years I have employed the McBurney incision almost exclusively in all sorts of appendicitis work, pus cases, general septic peritonitis and all the complications that one commonly runs across. If one uses a short McBurney incision in his pus cases, working rapidly by touch instead of by sight, avoiding gauze packing and all drains except a small wick, avoiding counter-openings and other unnecessary procedure, "leaving his patient as nearly alone as possible," and making it a rule to have the entire operation completed in from five to fifteen minutes, I think that he can keep his death rate within 5 per cent. in cases in which infection has invaded structures beyond the appendix. There are very few fields in abdominal surgery in which I can keep the death rate and the hernia rate lower than in appendicitis with abscess in my own practice, and I count the McBurney incision as one of the prime factors. ROBERT T. MORRIS, M.D.

616 Madison Avenue.

Bats as Bedbug Carriers.

PASADENA, CAL., May 18, 1906.

To the Editor:—The editorial in THE JOURNAL, March 17, 1906, page 804, on "Bedbugs and Disease Possibilities," interested me greatly. The reference to small animals as their source of food supply reminds me that when I resided in New York City a small bat that came into my rooms was covered with genuine bedbugs. These were especially numerous under the wings. It seems to me that this little animal could be a very great source of danger as a carrier of disease, as he has free access to our bedrooms, frequently coming directly from the worst lofts or hovels, or even pesthouses. Since this bug-infected bat came to me I have looked on these animals as a sure means of spreading bedbugs themselves. If these bugs are able to transmit infectious diseases, it causes a little animal otherwise not only harmless but in several ways useful to be a great source of danger. I have not seen any mention of the bat being a possible carrier of disease.

EDWIN R. CHADBOURNE.

The Country Doctor.

WARE, MASS., May 24, 1906.

To the Editor:—In the article on "The Country Doctor," in THE JOURNAL, May 19, the author, Dr. John G. Wilson, in my opinion, has overshot the mark; while recognizing a vein of truth in what he says, I consider that some of his statements certainly need qualifying.

The man does not live who has the time and the ability to do good work in surgery, bacteriology, chemical analysis and refraction and attend to a general practice of any size at the same time. The physician who is dependent on his practice for a living must first attend to that part of his work which brings in some adequate return for time spent, and this is more than can be said for most chemical and bacteriologic work as done by the general practitioner. The results of such work are as often negative as positive in the hands of even the most expert. The average patient does not appreciate and will not pay for hours spent in the laboratory, especially if no definite knowledge is gained thereby. While the careful scientific physician is delving in his laboratory his showy, smooth-tongued neighbor is making calls and pocketing two dollars to his one.

The claim that any physician who is capable of making a diagnosis of appendicitis should also be capable of operating is not well founded to say the least. Pray, are years of constant and almost exclusive study and practice of surgical technic to count nothing? It is continuous practice which enables one to do really good work in surgery; and this is well nigh impossible for the general practitioner remote from

hospitals to have. I am a country doctor. I do the minor surgery that comes my way, and in emergency a laparotomy or an amputation. I am fairly well equipped for bacteriologic work and chemical analysis of stomach contents, and can do both. I have a first-class static machine and *x*-ray equipment for skin work, skiagraphy, etc., and have had good results, but not more than one-tenth of my income is derived from all of these combined. So much for my experience. I should be glad to hear from others.

It may be that this community is less favorable for such work than others. I am inclined to think that this is the case.

M. W. PEARSON.

Association News

Extension of Return Limit to Pacific Coast and Mexico.

The Trunk Line Association announces that by deposit of ticket in person by original purchaser with validating agent not later than June 18, and payment of fee of $1 at time of deposit, an extension of return limit may be obtained to leave Boston to July 31.

Lake Transportation Between Detroit and Buffalo.

All rail tickets reading between Detroit and Buffalo over the Michigan Central, Grand Trunk and Wabash railways are optional for transportation between Detroit and Buffalo via the Detroit & Buffalo Steamboat Company. Those who wish to take advantage of this can secure reservations by applying to A. A. Schantz, Detroit, general superintendent Detroit & Buffalo Steamboat Company.

NEW MEMBERS.

List of new members in the American Medical Association from May 1 to May 28, 1906:

ALABAMA.

Jenkins, L. A., Cardiff.
Thorington, Chilton, Montgomery.
Upchurch, H. B., Carrollton.
Williams, J. H., Columbiana.

ARIZONA.

Flinn, John William, Prescott.

ARKANSAS.

Cunning, John R., Lonoke.
Corrigan, Michael B., Monticello.
Gaddy, L., Atkins.
Gray, Oscar, Little Rock.
Mount, M. F., Hot Springs.
Parker, James, De Valls Bluff.
Pate, C. N., Ft Smith.
Pettus, C. S., El Dorado.
York, Wm. W., Ashdown.

CALIFORNIA.

Munger, Curtis Boyd, San Francisco.
Power, W. B., Redlands.
Sherrard, E. E., Los Angeles.
Turner, Wm. D., Pasadena.

COLORADO.

Beggs, Wm. N., Denver.
Broman, Oscar Francis, Greeley.
Hick, Lawrence A., Delta.
Knox, Chas. Randall, Boulder.
Nelson, Geo. E., New Windsor.

CONNECTICUT.

Coyle, William J., Windsor Locks.
Dart, F. H., Nantis, P. O.
Enelish, H. M., Danbury.
Hammond, H. L., Bayville.
Hills, Laura H., Willimantic.
Lawson, Geo. N., Middle Haddam.
Lewis, D. M., New Haven.
Porter, Wm., Jr., Hartford.
Rice, Watson E., Stamford.
Travis, Catherine H., New Britain.
Welsh, Frederick W., Rockville.
Welch, W. C., New Haven.
Whitney, C. E., Norwich.

DELAWARE.

Brinton, H. W., Wilmington
Buckmaster, H. G., Wilmington.
Cochran, M. F., Wilmington.
Pearson, G. Burton, Middletown.
Sprouance, J. H., Wilmington.
Tybout, R. Raymond, Wilmington.
Wales, J. P., Wilmington

DISTRICT OF COLUMBIA.

Anderson, John F., Washington.
Heitmuller, Geo. H., Washington.
Kean, J. R., Washington.
Rogers, Jos. D., Washington.

GEORGIA.

Chisholm, J. F., Savannah.
Crane, C. W., Augusta.
Hammond, L. P., Rome.
Hogg, A. R., Senoia.
Longino, T. D., Atlanta.
Moore, G. Y., Cuthbert.
Pattillo, Geo. R., Culverton.
Turner, H. A., Lindale.
Underwood, J. M., LaFayette.
Watts, James C., Rome.
Webb, F. L., Macon.

IDAHO.

Rains, Jesse L., Grangeville.
Reynolds, J. L., Albion.
Monroe, Jas., Hagerman.

ILLINOIS.

Ballinger, J. R., Chicago.
Barryte, Evan L., Chicago.
Bingley, M. A., Chicago.
Burr, A. H., Chicago.
Davis, David John, Chicago.
Dodge, W. E., Chicago.
Edwards, Frank H., Evanston.
Fischer, W. D., Chicago.
Garwood, J. P., Princeton.
Griswold, W. C., Princeton.
Hoff, Weller H., Paris.
Howe, Harriette A. Chicago.
John, F. D., Chicago.
Jones, Martin D., Chicago.
Lane, R. N., Danville.
Lee, W. George, Chicago.
Murphy, N. A., Paris.
Patton, C. L., Springfield.
Sedlonik, Frank H., Bremen
Van Derslice, J. W., Chicago.
Yopata, W. J., Chicago.
Whitmer, L. W., Chicago
Wood, H. W., Sheldon
Worthington, H. C., Oak Park.

INDIANA.

Buxton, E. J., Rockport
Cox, N. D., Spencer
Crumpacker, C. B., South Bend
Doolittle, R. L., Ft Wayne.
Dowden, C. W., West Baden.
Elliott, R. M., Needham.
Gardner, Fletcher, Bloomington
Gibbson, John S., Burns City
Hicks, Leora F., Stilesville.
Kreider, Martin K., Goshen.
Lemon, H. K., Goshen.
Monsen, J. D., Lafayette.
Moore, E. P., South Bend.
Troutman, Rodney E., Logansport.
Yencer, Martin W., Boston.

INDIAN TERRITORY.

Hilsmeyer, F. E., Weleetka.
Jones, W. E., Potean.
Vance, B. J., Checotah.

IOWA.

Besore, A. L., Carson.
Bliss, C. S., Renwick.
Chesebrough, Samuel, Atalissa.
Clark, S. W., Oskaloosa.
Croy, C. C., Bonaparte.
Daly, W. T., Cresco.
Hauck, S. L., Ottumwa.
Killeen, M. A., Dubuque.
McCrea, F. M., Eddyville.
Robb, J. B., Russell.
Sheafe, E. A., Ottumwa.
Wright, W. T., Denison.

KANSAS.

Beckner, E. J., Selden.
Brown, M. D., Lebo.
Buck, L. A., Peabody.
Chambers, H. L., Lecompton.
Fisher, C. E., Lyons.
Gnlnn, J. H., Arkansas City.
Hughes, J. F., Hartford.
Lutz, E. J., Salina.
Lagerstrom, F. G., Lindsborg.
Rader, J. A., Caney.
Searl, O. R., Belvue.
Shelton, W. L., Woodlawn.
Skoog, A. L., Parsons.
Tinder, C. R., Englevale.
Van Horn, C. B., Topeka.
Van Velzer, C. A., Ft. Scott.
Yandell, W. H., Piedmont.

KENTUCKY.

Bushart, R. L., Fulton.
Scott, W. D., Georgetown.
Skinner, C., Louisville.

LOUISIANA.

Landrum, Jacob H., Eros.

MAINE.

Allen, J. H., Portland.
Bennet, E. H., Luber.
Black, Laura M., Saco.
Bumps, Wilbur A., Dexter.
Caldwell, J. C., Buckfield.
Davis, Gilman, Portland.
Doughty, J. W., Parker Head.
Downs, A. A., Fairfield.
Gilson, A. S., Portland.
Hagerthy, G. R., Bar Harbor.
Hale, L. L., Chebeague Island.
Hardy, T. E., North Vassalboro.
Hutchins, J. G., Stonington.
Kelley, D. H., Old Town.
Mansur, J. M., Mars Island.
Marston, E. P., Monmouth.
Oakes, W. K., Auburn.
Phillips, G. A., Bar Harbor.
Rice, Wm. E., Bath.
Russell, E. W., Lewiston.
Sawyer, W. G., Madison.
Silsby, E. B., Rockland.
Simmons, W. H., Bangor.
Skofield, E. R., Brunswick.
Snow, H. E., Bucksport.
Stilson, E. F., Damarscsotta.
Sturtevant, A. H., Augusta.
Sturgis, B. P., Auburn.
Wakefield, R. W., Bar Harbor.
Walker, J. E., Thomastown.
Wardwell, M. A., Penobscot.
Warren, S. P., Portland.
Wescatt, C. E., Deer Isle.
Weidman, S. Y., Rockport.
Weld, G. Gilmore, Old Town.
Whittier, F. N., Brunswick.

MARYLAND.

Greenbaum, H. S., Baltimore.
Latimer, G. W., Hyattsville.
McCurtt, H. D., Baltimore.
McDonald, W. B., Baltimore.
Owens, C. L., Cumberland.
Rytina, A. G., Baltimore.

MASSACHUSETTS.

Adams, W. H., Northampton.
Allen, W. H., Mansfield
Ames, J. J., Boston.
Bacon, J. E., Brockton.
Baldwin, H. C., Boston.
Boardman, W. E., Boston.
Bond, W. L., Somerville.
Brown, F. H., Boston
Brown, W. P., North Adams
Bruce, D. A., Quincy.
Carleton, D., Springfield.
Cavannagh, T. F., Holyoke.
Chapin, F. W., Springfield.
Cheever, D. W., Boston.
Chisholm, M. D., Westfield.
Churchill, J. D., Plymouth.
Cleaves, J. E., Medford.
Cogswell, Wm., Boston.
Cockett, Marguerite S., Boston.
Coffin, A. B., Boston.
Colburn, H. H., Boston.
Connor, C. F., New Bedford.
Coolidge, Algernon Jr., Boston.
Cumston, C. G., Boston.
Curry, E. F., Fall River
Daniel, Vivian, Watertown.
Davis, Bessie D., Cambridge
Derby, Hasket, Boston.
Dewey, C. G., Boston.
Donoghue, J. C., Boston.
Dow, G. F., Reading.
Drake, Wm. A., North Weymouth.
Duckering, Florence W., Boston.
Dunbar, F. H., Boston.
Durell, T. M., Somerville.
Durgin, S. H., Boston.
Dutton, S. L., Chelmsford
Ellis, E. K., Boston.
Eveleth, C. W., Salem.
Field, M. T., Salem.
Flon, E. W., Dedham.
Fonteen, E. R. P., Waltham
Frazier, J. C., East Weymouth.
Gabler, G. L., Holyoke.
Gale, H. A., Winchester.
Goldsborough, M. W., Cambridge.
Granger, F. B., Boston.
Guild, E. H., Springfield.
Hanson, W. C., Cambridge.
Harkins, D. S., Boston.
Harriman, C. H., Whitinsville.
Haskell, Nelson L., Amherst.
Hatchett, W. J., Somerville
Hill, G. S., Marblehead.
Howard, Amasa, Chelmsford
Howe, Oliver Hunt, Cohasset.
Hunter, N. M., Hudson.
Hurley, J. J., Boston.
Jackson, O. H., Fall River
Jones, L. A., North Adams
Jouett, F. R., Cambridge.
Kearney, J. H., Fitchburg.
Keenan, H. J., So. Boston.
Kelley, D. J., Worcester.
Kennedy, E. A., Palmer
Kerr, Isabelle D., Boston.
Knapp, P. C., Boston.
Lawrence, Nellie L., Boston
Leahey, G. H. A., Lowell.
Leary, C. J., New Bedford.
Longfellow, H. N., Boston
Loring, R. P., Newton Center
Lovell, C. E., Whitman.
Lowell, H. H., Boston.
McCaulay, A. A., Boston.
McDonald, J. A., Boston.
McGauran, G. D., Lawrence
Mains, C. F., Boston.
Miller, E. P., Fitchburg.
Mullins, E. N., Baldwinville
Musgrave, Percy, Boston.
Nason, A. C., Newburyport.
Nickerson, G. W., Stoneham
Nolen, W. F., Boston.
Noyes, Margaret L., Boston.
O'Brien, J. J., Dorcehster Center
O'Brien, J. J., Dorchester Center
O'Day, G. F., Worcester.
Ordway, Mabel D., Boston.
Oviatt, G. A., South Sudbury
Parcher, Geo. C., Saugus.
Perry, H. B., Northampton
Pierce, F. R., Haverhill.
Pike, F. F., Melrose.
Pinkham, J. G., Lynn.
Pomeroy, H. S., Boston.
Prescott, H. D., New Bedford.
Provandee, J. H., Melrose.
Putnam, Ralph, Winchester
Quinby, S. F., Gloucester.
Record, Wellington, Wollaston.
Rice, A. H., Boston.
Rich, Chas. E., Lynn.
Roble, W. F., Baldwinville
Rodgers, C. W., Boston
Russell, W. P., Springfield
Salsbury, G. K., Brookline.
Sanger, G. E., Arlington
Sargent, G. A., Boston.
Sawyer, F. L., Boston.
Scofield, W. W., Dalton
Sears, J. S., Boston
Shores, H. T., Northampton
Smyth, R. S., Boston
Stacey, C. L., Boston
Starbird, F. P., Boston
Stetson, F. E., New Bedford
Stevens, Sara F., West Roxbury
Swan, R. W., Worcester
Sweetsir, C. S., Lowell
Sylvester, A. W., Pittsfield
Tift, A. A., Boston
Tenney, F. S., Boston
Thompson, R. H., Malden

Topaz, Anna, Boston.
Torrey, S. W., Beverly.
Tower, F. R., Boston.
Trayes, W. H., Boston.
Tucker, W. E., Ipswich.
Twitchell, E. T., Dorchester.
Vickery, L. F., Jamaica Plains.
Viles, C. A., Lowell.
Vose, R. H., Boston.
Walcott, H. J., Jr., Springfield.
Walker, A. C., Greenfield.
Walker, David Harold, Brookline.
Webber, H. G., Wilbraham.
Wormelle, C. B., Boston.

MICHIGAN.

Herrington, W. J., Bad Axe.
Inch, G. F., Kalamazoo.
Palmerlee, G. H., Detroit.
Stuck, C. M., Plainwell.
Vercellini, Giuseppe, Calumet.

MINNESOTA.

Aldrich, F. H., Belview.
Belt, W. E., Dodge Center.
Braasch, Wm. F., Minneapolis.
Cheney, E. L., Duluth.
Dulude, Stephen, Winsted.
Gray, F. D., Vesta.
Lima, L., Montevideo.
McComb, C. F., Duluth.
McEachern, W. A., Sandstone.
Ray, C. W., Mount Lake.
Robitshek, E. C., Minneapolis.
Webster, I. D., Mankato.
Wright, C. D. A., Minneapolis.

MISSISSIPPI.

Acker, G. W., Pt. Gibson.
Anderson, L., Jackson.
Brewer, W. C., Columbus.
Clarke, L. M., Pelahatchie.
Cox, S. L., Water Valley.
Flowers, Henry, Brookhaven.
Jones, M. F., Columbus.
Magruder, L. W., Woodville.
Ramsay, H. H., Darbun.

MISSOURI.

Alexander, W. J., Marthasville.
Anderson, Finis L., Joplin.
Bachelder, F. S., Asbury.
Crowson, Egbert, Gaynor.
Goodson, H. C., St. Louis.
McAlester, A. W., Jefferson.
Nichols, F. J., Ham's Prairie.
Parrish, E. E., Memphis.
Scharff, E. A., St. Louis.
Scherck, H. J., St. Louis.
Stewart, Jas., Holstein.
Taake, W. F., St. Louis.

MONTANA.

Randall, J. G., Missoula.
Schulin, Carl, Billings.

NEBRASKA.

Bening, H., Sutton.
De Lanney, E. L., So. Omaha.
Gaudy, G. G., Humboldt.
Gerish, A. E., So. Auburn.
Hollister, Thos. C., Steinauer.
Redfield, W. J., Wood River.
Schleier, F. J., Omaha.
Wilson, M. L., Humboldt.
Wittwer, E. C., Humboldt.

NEVADA.

Crockett, C. A., Reno.
Francis, C. H., Reno.

NEW HAMPSHIRE.

Boutwell, H. T., Manchester.
Cotton, C. B., Wolfboro.
Drake, E. T., Franklin.
Fernald, A. M., Sutton.
Hawley, G. H., Center Barnstead.
Hanaford, H. A., Newport.
Hill, F. E., Suncook.
Jones, S. W., Franklin.
Leith, W. H., Lancaster.
Morrill, L. B., Center Harbor.
Morse, C. A., Newmarket.
Nason, L. F., Dover.
Newell, H. W., West Derry.
Palmer, Haven, Plymouth.
Pattee, W. H., Manchester.
Scott, N. H., Wolfboro.
Smith, F. A., Lebanon.
True, W. H., Laconia.
Weaver, C. A., New Boston.
Wilkins, G. A., Manchester.
Webber, N. B., Manchester.
Young, O. C., Charlestown.

NEW JERSEY.

McGill, Peter, Lambertville.
Simmons, M. H., Orange.

NEW MEXICO.

Beeson, C. F., Roswell.
Kornitzer, Joseph, Socorro.
Moir, J. G., Demming.

NEW YORK.

Alkier, S. J., Brooklyn.
Allen, J. R., Olean.
Allen, A. H., Saranac Lake.
Anderson, A. L., Brooklyn.
Angell, E. D., Rochester.
Ayres, Winfield, New York.
Baker, Smith, Utica.
Ball, O. D., Albany.
Ballin, M. J., New York.
Bandler, S. W., New York.
Bannan, Theresa, Syracuse.
Barber, Vincent, Brooklyn.
Barker, H. L., Woodside.
Barney, H. A., Belmont.
Basch, S. H., Rhinebeck.
Baum, H. C., Syracuse.
Beghan, A. L., Canandaigua.
Belcher, W. N., Brooklyn.
Bell, Alfred, Brooklyn.
Benjamin, F. E., Shelter Island.
Bensel, W., New York.
Berlenbach, F. H., Brooklyn.
Black, J. F. J., White Plain.
Blackham, G. E., Dunkirk.
Booth, A. W., Elmira.
Booth, J. A., New York.
Bouton, O. Z., Fultonville.
Bovaird, David, New York.
Boyd, J. P., Albany.
Boyd, W. A., New York.
Boyden, P. E., Brooklyn.
Bradbury, G. A., Troy.
Brainard, L. L., Little Falls.
Brasted, C. M., Hornellsville.
Brinkmann, M. W., New York.
Brizanti, P., New York.
Broad, G. B., Syracuse.
Brooks, J. M., Jamestown.
Brooks, S. A., North Java.
Brown, W. S., New York.
Browning, William, Brooklyn.
Brundage, J. D., West Hampton Beach.
Brunner, C. W., Brooklyn.
Buck, K., Rochester.
Bull, Tillinghast, New York.
Burch, T. H., New York.
Busb, R. P., Horseheads.
Butler, J. N., New York.
Cadwell, C. T., Poughkeepsie.
Cairns, D. W., New York.
Carney, T. J., New York.
Carpenter, E. J., Corning.
Carpenter, F. B., New York.
Carr, C. A., Corning.
Case, D. C., Slingerlands.
Cavanaugh, W. J., Poughkeepsie.
Clark, G. P., Syracuse.
Clark, W. M. B., New York.
Clark, Wallace, Utica.
Clayland, J. M., Brooklyn.
Cleaves, Margaret A., New York.
Cleveland, C., New York.
Conway, M. P., Auburn.
Corsiglia, Andrew, New York.
Coxe, M. S., Dunkirk.
Curtis, H. H., New York.
Creveling, Joseph P., Auburn.
Cranston, W. J., Walton.
Coakley, C. G., New York.
Cocks, Gerhard H., New York.
Coffin, L. A., New York.
Cohn, Martin, New York.
Cohn, Salo, New York.
Comstock, I. M., New York Mills.
Conner, Earle, New York.
Connell, Karl, New York.
Cotter, J. H., Poughkeepsie.
Cragin, E. B., New York.
Craig, J. D., Albany.
Crane, C. G., Brooklyn.
Crockett, R. L., Oneida.
Dana, C. L., New York.
Danner, E. W., New York.
Davin, J. P., New York.
Davis, A. E., New York.
Davis, C. E., Albany.
Davis, J. E. L., New York.
Delatour, H. B., Brooklyn.
Dinkelspeil, Edgar, New York.
Dixon, G. S., New York.
Duane, Alexander, New York.
Dunning, Z. F., Philmont.
Eddy, H. M., Geneva.
Elfstrom, C. E., Brooklyn.
Elliot, Ellsworth, New York.
Elliot, G. T., New York.
Enniet, F. B., New York.
Enright, G. C., Yonkers.
Ewing, W. A., New York.
Finney, F. F., Burke.
Fischer, Hermann, New York.
Fish, H. M., New York.
Fiske, J. P., New York.
Flaherty, Frederick, Syracuse.
Fleming, W. S., Mt. Vernon.
Ford, H. H., Elmira.
Ford, N. B., Owasco.
Forsyth, C. B., Alexandria Bay.
Frost, E. L., Buffalo.
Fuchs, F. L., New York.
Gallagher, J. T., Brooklyn.
Germer, H. G., Canastota.
Gibney, Homer, New York.
Gibson, W. C., Utica.
Gibson, L. M., New York.
Goodell, J. F., Rhinebeck.
Goodman, A. L., New York.
Goodwin, T. F., Mt. Vernon.
Graner, Frank, New York.
Grandin, E. H., New York.
Grant, J. E., New York.
Greene, W. D., Buffalo.
Gushee, E. S., New York.
Gwyer, Frederick, New York.
Halsted, T. H., Syracuse.
Hardenbergh, D. E., Middletown.
Hartwell, J. H., New York.
Harwood, W. H., Chasm Falls.
Hayman, Abe, Brooklyn.
Hayt, R. A., Fishkill.
Heffron, J. L., Syracuse.
Heiman, Henry, New York.
Henry, C. C., Brooklyn.
Herrick, Everett, New York.
Herzfeld, A. A., New York.
Hills, A. K., New York.
Hitzrot, J. M., New York.
Hoffmann, J. S., New York.
Holden, F. C., Brooklyn.
Holden, W. A., New York.
Holmes, C. H., New York.
Hotaling, A. S., Syracuse.
Hunt, J. R., New York.
Huntington, Geo., Hopewell Jct.
Hutchings, R. H., Ogdensburg.
Ingersoll, J. M., Rochester.
Ingram, M. de B., Brooklyn.
Jaches, L. W., New York.
Jacobson, A. C., Brooklyn.
Jacoby, J. R., New York.
Jansen, F. I., Fonda.
Jenks, F. P., Brooklyn.
Jolls, W. B., Orchard Park.
Jones, E. A., Jamestown.
Jones, H. G., Utica.
Jones, J. D., Utica.
Joy, L. F., Fulton.
Joslin, F. M., Voorheesville.
Kahn, Ulysses, New York.
Kapetzky, S. J., New York.
King, J. W., Stottville.
Knapp, J. R., New York.
Knight, C. H., New York.
Krug, Florian, New York.
Knuitzer, Robert, New York.
Laird, A. T., Albany.
Lake, A. D., Gowanda.
Lanahan, J. A., Albany.
Langstaff, L. G., Brooklyn.
Larkin, A. E., Syracuse.
La Seur, J. W., Batavia.
Lempe, G. G., Albany.
Lennon, John, New York.
Levis, H. B., New York.
Levy, I. Harris, Syracuse.
Lewinthal, D. C., New York.
Lewis, G. G., Syracuse.
Lewis, T. A., Edwardsville.
Lipes, H. J., Albany.
Loughlen, T. B., Olean.
Lumbard, J. E., New York.
Luther, F. M., New York.
Lytle, A. T., Buffalo.
MacDonald, F. B., New York.
MacEvitt, J. C., Brooklyn.
MacGuire, C. J., New York.
MacHarg, M., Albany.
Mackenzie, D. H., Millbrook.
Mackee, G. M., New York.
McCaba, C. P., Greenville.
McCaw, J. F., Watertown.
McClary, C. E., Syracuse.
McClellan, G. W., Canandaigua.
McClelland, L. A., Brooklyn.
McCourt, P. J., New York.
McKee, T. H., Buffalo.
McLennan, R. C., Syracuse.
McNulty, J. J., New York.
Madill, G. C., Ogdensburg.
Malcolm, P. E. D., New York.
Manchester, D. R., Canajoharie.
Manchester, H. B., Batavia.
Mangan, D. J., Brooklyn.
Mann, John, Old Westbury.
Meader, I. M., Watertown.
Merkley, E. A., Edwards.
Merriam, E. H., Coxsackie.
Merzbach, Joseph, Brooklyn.
Michaelis, Alfred, New York.
Michailorsky, Michael, New York.
Miller, A. R., Syracuse.
Miller, J. G., Lancaster.
Mills, H. M., Brooklyn.
Mitchell, R. E., Middletown.
Mitchell, J. D., Hornellsville.
Mittendorf, W. F., New York.
Moak, Harris, Brooklyn.
Mooney, E. L., Syracuse.
Moore, E. S., Bay Shore.
Moorhead, J. J., New York.
Morrow, P. A., New York.
Mortimer, W. G., New York.
Moseley, H. P., New York.
Mosher, C. B., Johnstown.
Moss, L. H., Richmond Hill.
Moston, G. T., Albany.
Mulligan, E. W., Rochester.
Murphy, G. A., Troy.
Murray, D. H., Syracuse.
Murray, G. P., New York.
Murray, R. A., New York.
Newton, S. H., Rouses Point.
Nichols, C. E., Troy.
Nichols, H. W., Brooklyn.
Norrie, Van Horns, New York.
O'Connell, T. J., Rochester.
Oliver, Ellwood, Ancram.
Oppenheimer, B. S., New York.
Osborn, L. J., New York.
Ozmun, I. D., Rochester.
Palmer, E., Brooklyn.
Parker, F. J., New York.
Parry, Angenette, New York.
Payne, L. C., Liberty.
Pedersen, James, New York.
Peltier, G. U., Cohoes.
Peterson, E. W., Manhattan.
Peterson, J. S., New York.
Phelan, D. J., New York.
Pisek, G. R., New York.
Plimpton, W. O., New York.
Pomeroy, R. H., Brooklyn.
Pratt, J. H., Manhester.
Price, H. R., Brooklyn.
Putnam, F. D., Auburn.
Putnam, J. W., Buffalo.
Racette, J. W., Schenectady.
Rafel, Henry, New York.
Reid, C. C., Rome.
Reynolds, W. B., Olean.
Rice, G. F., Jeffersonville.
Robertson, W. D., Mt. Vernon.
Roe, J. O., Rochester.
Rogers, T. A., Plattsburgh.
Rose, L. W., Rochester.
Rowe, J. T. W., New York.
Russell, J. I., New York.
Russell, W. L., Poughkeepsie.
Rutland, A. S., Syracuse.
Salisbury, T. B., New York.
Sanson, J. W., Sparkill.
Sargent, G. W., Seneca Castle.
Schrab, A. H., Brooklyn.
Schlitz, F. A., Brooklyn.
Schoeney, L., New York.
Sefton, Frederick, Auburn.
Sheppard, J. E., Brooklyn.
Shufelt, W. O., New York.
Slingerland, I. M., Fayetteville.
Smeltzer, W. F., Bergen.
Smith, E. A., Buffalo.
Smith, F. B., Watertown.
Smith, G. E., Fredonia.
Sondern, F. E., New York.
Soules, T. E., Westfield.
Stark, H. S., New York.
Stephens, G. H., Syracuse.
Still, D. V., Johnstown.
Stimson, C. W., New York.
Stone, W. B., Schenectady
Stowell, W. L., New York.
Sturges, L. F., New York.
Sweet, M. F., Syracuse.
Stevenson, G. E., Gorham.
Sullivan, J. H., Charlotte.
Sullivan, E. C., Brooklyn.
Spence, T. B., Brooklyn.
Sterling, J. H., Brooklyn.
Stillman, W. O., Albany.
Stuart, F. H., Brooklyn.
Schmitt, J. A., New York.
Sturgis, F. R., New York.
Spier, O. A., New York.
Shelby, E. P., New York.
Silver, C. D., Plattsburg.
Thomas, A. M., New York.
Timme, Walter, New York.
Tyrell, W. G., New York.
Torrey, Sinclair, New York.
Todd, W. H., Dobbs Ferry.
Taylor, R. W., New York.
Thomas G. E., Port Chester.
Traver, A. H., Albany.
Vanderbogert, F., Schnectady.
Vanderhoof, F. D., Phelps.
Vander Poel, W. R., New York.
Vander Veer, Albert, Albany.
Vander Veer, E. A., Albany.
Vander Veer, J. N., Albany
Van Fleet, Frank, New York.
Van Slyke, A. W., Coxsackie.
Voorhees, Sheldon, Auburn.
Whipple, E. B., Buffalo.
Williams, U. G., Newport.
White, A. B., Norwich.
Welker, Franklin, New York.
Williamson, C. S., Brooklyn.
Wilson, N. W., Buffalo.
Wheelwright, J. S., New York
Woolsey, Geo., New York.
Wansbury, M. F., Troy.
Wyncoop, E. J., Syracuse.
Waite, H. E., New York.
Williams, G. O., Greene.

Wicker, F. A., Livonia.
Wood, C. F., West Winfield.
Whitman, Royal, New York.
Weber, Leonard, New York.
Wiener, Alfred, New York.
Warner, H. S., New York.
Worden, H. K., Westmoreland.
Wood, F. C., New York.
Yard, A. B., New York.

NORTH CAROLINA.

Cooper, G. M., Clinton.
Highsmith, Chas., Dunn.

OHIO.

Bietz, A. J., Ravenna.
Carleton, E. E., Columbus.
Carlisle, L. C., Cleveland.
Clark, W. R., E. Liverpool.
Fletcher, F., Columbus.
Hoover, C. S., Alliance.
Kahn, Louis, Columbus.
McCready, S. R., Leetonia.
McKee, F. H., Bainbridge.
Rike, Wm. H., Versailles.
Rogers, C. G., Dayton.
Rowland, A., Akron.
Shafer, E. E., Willow Wood
Shenck, A. L., Ashland.
Sherbondy, J. A., Youngstown.
Sherwood, I. W., Columbus.
Stephens, C. A., Helena.
Thesing, J. H., Cincinnati.
Wardlow, Y., Columbus.

OKLAHOMA.

Dinkler, F., Ft. Cobb.
Easter, E. D., Pond Creek.
Fleshe, T. J., Edmond.
Keeler, F. L., Perry.
Lee, T. J., Rocky.
Mavity, A. R., Lawton.
Sanders, T. C., Shawnee.
West, A. K., Oklahoma City.
White, C. T., Ivanhoe.

OREGON.

Baar, G. G., Portland.

PENNSYLVANIA.

Allen, A. R., Philadelphia.
Brennan, J. J., Scranton.
Brown, F. W., Franklin.
Bryan, J. R., Philadelphia.
Cope, J. C., Pittsburg.
Crosbie, G. T., Fayette City.
Davis, F. T., Jr., Lansdowne.
Dougherty, S. W., Philadelphia.
Ellinger, T. J., West Philadelphia.
Engle, G. D., Wilkinsburg.
Evans, D. R., Pittsburg.
Farrell, J. A., West Chester.
Fetherolf, F. A., Allentown.
Fisher, W. E., Reading.
Harper, J. G., Carbondale.
Henry, W. P. S., Everett.
Hoover, P. D., Waynesboro.
Johnson, W. S., Philadelphia.
Lincoln, C. W., Wayne.
Linn, J. M., Swissvale.
McKelvey, J. P., Pittsburg.
McKenzie, R. T., Philadelphia.
Radcliff, McCluney, Philadelphia.
Patterson, E. J., Pittsburg.
Porter, J. S., Taylor.
Ruff, W. F., Philadelphia.
Sankey, T. M., Wilkinsburg.
Stegner, Adam, Rendham.
Swaving, J. H., Pottsville.
Thomas, G. P., Philadelphia.
Thomas, Y. D., Pittsburg.
Ziegler, C. E., Pittsburg.

RHODE ISLAND.

Brown, J. E., Providence.
Chase, J. A., Pawtucket.
Edwards, F., Providence.
Fulton, F. T., Providence.
Hindle, Wm., Providence.
Hollingworth, Arthur, Providence.
Leech, J. W., Providence.
McDermott, H. F., Providence.
Partridge, H. G., Providence.
Russell, W. A., Providence.
Shattuck, G. L., Providence.
Spicer, G. T., Providence.
Sylvia, C. A., Providence.
Tanguay, J. E., Woonsocket.

SOUTH CAROLINA.

Smith, L. J., Ridge Springs.
Wilbur, J. Q., Waterloo.
Wilson, J. D., Lowndesville.

SOUTH DAKOTA.

Ainsworth, O. N., Spearfish.
Anderson, E. T., Platte.
Bates, J. S., Erwin.
Culver, C. F., Sioux Falls.
Dyar, B. A., De Smet.
Gauger, E. C., Chamberlain.
Wallis, S. R., Miller.

TENNESSEE.

Brown, T., Nashville.
Cowan, C. M., Bristol.
Ferguson, G. D., Thomaston.
French, N. L., Wartburg.
Hackworth, C. L., So. Pittsburg.
Morton, J. L., Fall Creek.
Nickol, A. G., Nashville.
Perry, R. J., Springville.
Scott, L. M., Jellico.

TEXAS.

Arnold, W. T., Brookeland.
Armstrong, F. G., Delia.
Bruhl, C. E., Houston.
Blailock, W. R., Dallas.
Caffrey, Russell, San Antonio.
Carpenter, E. R., El Paso.
Carter, J. C., Denison.
Caton, J. H., Breckenridge.
Ceagwall, A. O., Stephenville.
Danforth, C. G., Valentine.
Daniels, J. G., Jr., Gilmer.
Dixon, C. D., San Antonio.
Dunlap, E., Dallas.
Ehlert, J. M., Kingsbury.
Fields, W. M., Midlothian.
Floecklnger, F. C., Taylor.
Fowler, W. W., Ballinger.
Freedman, S. M., Dallas.
Grace, M. B., Seguin.
Greenwood, J. W., Memphis.
Hale, J. W., Waco.
Harper, W. A., Austin.
Herrington, J. L., Mullin.
Horn, J. B., China Springs.
Howell, E. P., Houston.
Jenkins, H. L. D., Hughes Springs.
Johnson, O. H., San Angelo.
Lake, I. W., Smithland.
Largent, J. W., McKinney.
Martin, W. H., Houston.
Peyton, F. P., Mexia.
Pullen, W. G., Corrigan.
Reagan, J. H., Nacogdoches.
Sellers, R. B., Comache.
Smith, W. I. M., Nacogdoches.
Suggs, L. A., Ft. Worth.
Terry, W. G., Denison.
Trigg, H. B., Ft. Worth.

UTAH.

Beatty, T. B. B., Salt Lake City.

VERMONT.

Brown, D. R., Danville.
Gillette, L. H., Springfield.
Gray, F. S., Troy.
Hanrahan, J. D., Rutland.
Howard, C. W., Shoreham.
Johnson, C. U., West Berkshire.
Marshall, A. T., Chelsea.
Tindall, W. J., Williamstown.
Sargent, H. E., Island Pond.
Waller, C. C., No. Troy.
Watson, F. B., Williamstown.
Watson, J. W., West Hartford.

VIRGINIA.

Darden, J. C., Sweet Chalybeate.
Hope, J. W., Hampton.
Kight, R. S., Norfolk.
Lane, W. P., Whaleyville.
Mallory, H. C., Greenbackville.
Newton, McGuire, Richmond

WASHINGTON.

Brister, J. M., Puget Sound.
Crookall, A. C., Seattle.
Helton, A. J., No. Yakima.
Shannon, James, Seattle.

WEST VIRGINIA.

Arnett, C. T., Clarksburg.
Brazonler, R. K., Keystone.
Chalfant, E. M., Morgantown.
Sinsel, C. A., Grafton.
Warder, A. S., Jr., Grafton.

WISCONSIN.

Combs, C. J., Oshkosh.
Evans, Owen, Bangor.
Epley, O. H., Baldwin.
Fish, F. S., Lime Ridge.
Frank, L. P., Milwaukee.
Hover, G. C., Milwaukee.
Lademann, O. F., Milwaukee.
Lauder, C. E., Viroqua.
Ogden, H., Ft. Atkinson.
Purcell, H. E., Madison.
Wall, C. H., Mellen.
Wehle, W. J., West Bend.

HONOLULU.

Burnham, Minnette, Honolulu.

Marriages

EJNAR HANSON, M.D., to Miss Sara Francis Jenner, at New York City, May 23.

W. J. BINGHAM, M.D., Toronto, Ont., to Miss Fanny K. Rice of Clinton, Mo., May 17.

GEORGE F. BLOUGH, M.D., to Miss Anna M. King, both of Camp Grove, Ill., May 16.

VERNON ROBINS, M.D., to Miss Mary Elizabeth Buck, both of Louisville, Ky., May 24.

ARTHUR H. HARMS, M.D., Sterling, Ill., to Miss Alice Ward of Rock Falls, Ill., May 29.

HAROLD G. GOLDBERG, M.D., Philadelphia, to Miss Florence Good of Bala, Pa., June 2.

WILLIAM T. MURPHY, M.D., Waukesha, Wis., to Miss Kitty Murphy of Chicago, May 29.

JOHN B. KOUWENHOVEN, M.D., Yonkers, N. Y., to Miss Grace Atlee of Philadelphia, May 24.

LEWIS M. CAREY, M.D., Novesta, Mich., to Miss Lulu M. Hall of Bad Axe, Mich., May 12.

JESSE CLIFFORD MOORE, M.D., Clio, Iowa, to Miss Edna May Gardner of Eddyville, Iowa, May 17.

GEORGE K. MCDOWELL, M.D., Spokane, Wash., to Miss Jean Dunlop of Parry Sound, Ont., May 30.

FREDERICK GOCHNAUR, M.D., Upperville, Va., to Miss Pearls Fitzhugh Peak of Norfolk, Va., May 23.

CHARLES DUANE COBB, M.D., Boston, Mass., to Miss Ella Elizabeth Rogerson of Bradford, Pa., May 19.

Deaths

Boerne Bettman, M.D. Medical College of Ohio, Cincinnati, 1878; a member of the American Medical Association; a prominent specialist in diseases of the eye, ear, nose and throat; a resident of Chicago since 1883; president of the Illinois State Board of Charities under Governor Altgeld; for many years chief surgeon of the Illinois Charitable Eye and Ear Infirmary; professor of ophthalmology in the College of Physicians and Surgeons, and professor of ophthalmology and treasurer of the Post Graduate Medical School of Chicago, who had been ill for 12 years with insular multiple sclerosis, died from intercurrent pneumonia, at his home in Chicago, after an illness of five days, May 25, aged 49.

Jacob Lafayette Williams, M.D. Harvard University Medical School, 1848; a member of the American Medical Association, Massachusetts Medical Society, American Academy of Dental Sciences, New York Odontological Society, Society for the Advancement of Oral Sciences, etc.; one of the oldest and best known practitioners of Boston; for many years a specialist in oral surgery, died at his home in Boston, May 15, aged 82.

John Elba Owen, M.D. Evansville (Ind.) Medical College, 1879; a member of the Vanderburg County Medical Society and the Indiana State Medical Society; professor of anatomy in the Evansville Medical College and especially skilled as an anesthetist, died at his home in Evansville, May 20, from cirrhosis of the liver, after an illness of three months, aged 51.

Henry Clay Barton, M.D. Jefferson Medical College, Philadelphia, 1896; formerly of Wilkesbarre, Pa.; a member of the Hare Medical Society and the Medical Society of Wilkesbarre; for the last few months a resident of Philadelphia, died in Jefferson Hospital, March 12, from typhoid fever, after an illness of four weeks, aged 32.

Horace M. Shallenberger, M.D. Jefferson Medical College, Philadelphia, 1876, a member of the American Medical Association and a prominent physician of the Beaver valley, Pa., died at his home in Rochester, Pa., May 5, from typhoid fever, after an illness of one month, aged 52.

Adrian D. Williams, M.D. College of Physicians and Surgeons in the City of New York, 1896, formerly a contract surgeon in the United States Army and on duty in the Philippines, died recently and was buried from his late residence in Greenpoint, Brooklyn, May 6.

Henry Lee Cabell, M.D. Medical Department of the University of Pennsylvania, Philadelphia, 1861, of Cedarville, W. Va., a veteran of the Mexican War and Civil War, died at Winchester (Va.) Memorial Hospital, May 16, from brain disease, after a prolonged illness, aged 78.

Robert P. Davis, M.D. Northwestern Medical College, St. Joseph, Mo., 1888, of Woodruff, Mo., a member of the State Medical Association of Missouri and a delegate to that association, died suddenly in his apartment in Jefferson City, May 16, from heart disease.

William J. Gilfillan, M.D. College of Physicians and Surgeons in the City of New York, 1862, a surgeon in the Navy during the Civil War, and an officer of the health department of Brooklyn, died at the home of his nephew in that city, May 23, aged 66.

Harvey Shannon, M.D. New Orleans (La.) School of Medicine, 1868; a Confederate veteran and later a member of the Mississippi legislature; a practitioner of Ocean Springs, Miss., died at the home of his daughter in Nashville, Tenn., May 14, aged 75.

Charles Carroll Bombaugh, M.D. Jefferson Medical College, Philadelphia, 1853, a surgeon in the United States Army during the Civil War, thereafter devoted to literary pursuits, died at his home in Baltimore from gastritis, May 24, aged 78.

Harry A. Brouse, M.D. Jefferson Medical College, Philadelphia, 1878, a member of the Philadelphia County Medical Society, died at his home in Manhattan, Kan., May 10, from locomotor ataxia, after an illness of six years, aged 55.

John R. Davis, M.D. (Examination, W. Va.), a member of the American Medical Association, and one of the oldest practitioners of Moundsville, W. Va., died at his home in that city, May 15, after an illness of several weeks, aged 62.

Thaddeus C. Montague, M.D. Medical College of Virginia, Richmond, 1860, a Confederate veteran and member of the legislature of Virginia, died at his home in Fredericksburg, Va., May 16, after a lingering illness, aged 69.

William Mead Page, M.D. University of Virginia, Medical Department, Charlottesville, 1853, a surgeon in the United States Navy and in the Confederate army, died at his home in Fauquier County, Va., May 9, aged 74.

William Hackett, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1860, of Highbridge, N. J., died in the Philadelphia Hospital, May 19, from the effects of an overdose of morphin, aged 68.

Albert Hull Seeley, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1853, died at his home in Woodhull, N. Y., probably from aortic aneurism, after an illness of five hours, May 4, aged 78.

Eli Allison, M.D. Geneva (N. Y.) Medical College, 1861, a member of the Steuben County Medical Society and several times an officer thereof, died at his home in Wayne, N. Y., May 17, after a long illness, aged 70.

Sardis L. Crissey, M.D. Medical Department of Columbian College, Washington, D. C., 1871, a veteran of the Civil War, died at his home in Washington, April 28, from heart disease, after a long illness, aged 66.

Joseph S. Crane, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1844, of New York City, died at the home of his son in New York, from heart disease, May 20, aged 85.

Edgar Arthur Day, M.D. Long Island College Hospital, Brooklyn, N. Y., 1887, organizer of the Newfoundland (N. J.) Health Association, died at his home in Newfoundland, May 15, after a long illness.

Jacob L. Shriver, M.D., a practitioner of Jolleytown, Pa., for 55 years, died at his home in that place, May 5, from cerebral hemorrhage, after an illness of two weeks, aged 78.

Benjamin F. Pitman, M.D. Cleveland (Ohio) Medical College, 1861, surgeon during the Civil War in an Ohio battery, died at his home in Nantucket, Mass., May 17, aged 78.

Henry H. Chase, M.D. Chicago Homeopathic Medical College, 1881, died at his home in Rock Island, Ill., May 23, from septicemia due to an operation wound, aged 46.

A. Churchill, M.D. Physio-Medical College of Indiana, Indianapolis, 1874, for 50 years a practitioner of Nevada, Mo., died at his home in that city, May 22, aged 70.

M. R. George, M.D. Jefferson Medical College, Philadelphia, 1875, died at his home in College Springs, Iowa, May 10, from consumption, after a protracted illness.

Charles Clipenger Davis, M.D. Medical College of Ohio, Cincinnati, 1854, died suddenly at his home in Robinson, Ill., May 11, from heart disease, aged 76.

John H. Amrock, M.D. New York University, New York City, 1901, died at his home in New Bedford, Mass., May 20, after a long illness.

L. F. Nelson, M.D. University of Maryland School of Medicine, Baltimore, 1849, formerly of Edina, Mo., died in Moberly, Mo., May 17.

Adam E. Ford, M.D. Toronto School of Medicine, 1855, died at his home in Denver, May 17, aged more than 80.

Book Notice

ESSENTIALS OF GENITO-URINARY AND VENEREAL DISEASES Arranged in the Form of Questions and Answers, Prepared Especially for Students of Medicine. By S. S. Wilcox, M.D., Professor of Genito-Urinary Diseases and Syphilology, Starling Medical College, Columbus, etc. Illustrated. Cloth. Pp. 313. Price, $1.00 net. Philadelphia: W. B. Saunders Co., 1906.

This work is a worthy addition to the Saunders Question-Compend Series. We find a few subjects on which we do not agree, namely, that urinary fever is an acute or chronic condition caused by trauma to some part of the urinary tract. It should be regarded as an infection. The treatment advised for acute gonorrheal urethritis can hardly be accepted as the most approved and modern. The work, considered as a whole, is good, and the student and practitioner will find it of much value.

Miscellany

Effectual Vaccination of Mice Against Cancer.—Ehrlich of Frankfurt has had extensive experience in this line. According to his statements published in the *Zeitft. f. aerztliche Fortbildung* for April 1, he has found 230 mice with tumors. All the "tumor mice" were females; most of them had been used for breeding purposes, and the tumors were exclusively on the mammæ. The microscope showed several types of structure in these spontaneous tumors, but all were of epithelial origin. He lays great stress on his success in inoculating successive generations with these tumors, selecting constantly the most virulent strains. By this means he has obtained a strain with a virulence beyond anything ever realized in this line. The Paris strain kills only 10 per cent., and the Jensen strain only 30 or at the most 40 per cent., while his strain is deadly for nearly every mouse inoculated. Among other features of his experimental research is his discovery that the spontaneous carcinoma of one mouse is harmless for all other mice, that is, there is less than one chance in a hundred that inoculation of another animal will give positive results. He found, however, that this inoculation acts like a vaccination, and the inoculated animal is protected thereafter against inoculation with the most virulent specific cancer material. This kind of vaccination proved successful in from 66 to 94 per cent. of the various series of tests, the fluctuations due to the tentative quantities used for the inoculations. A decided immunizing effect was unmistakably apparent in every instance. This immunity develops in the course of a week or so, and lasts for weeks and months. His numerous and repeated tests during more than twelve months always produced the same impression of successful immunization. The results were even better when mice which had given negative results to the primary inoculation of the virulent material were then inoculated a second time with the same material. The first inoculation invariably conferred complete immunity to further inoculations. The immunity conferred is a pan-immunity, protecting against all the types of malignant disease encountered in the experiments, sarcoma and chondroma as well as carcinoma and adenoma. He theorizes in regard to the rôle of the receptors in cancer formation, suggesting that possibly the tumor receptors are those that take up the "growth material." This view is sustained by Starling's experiences in which the rudimentary mammæ of female rabbits increased in size and assumed the aspect of the mammæ in pregnancy when an extract of rabbit embryos was injected subcutaneously. Under the influence of the anchoring of this "growth material" (Wuchsstoff) by the special receptors, the nourishment of the cells became much more abundant, possibly with the formation of more numerous and more rapacious "nourishment receptors." He is convinced that during the colossally complicated processes of fetal

and postnatal development germinal cells frequently become aberrant and misplaced. The protecting appliances of the organism, however, hold these aberrant germinal cells in abeyance and they remain entirely latent through life, thanks to the defensive arsenal of the organism. Otherwise cancer would be much more frequent than it is. He has never met with any evidence to prove a parasitic origin for cancer. For working purposes he accepts with Jensen the assumption that the cancer cell may be regarded and handled as, in itself, a colony-forming parasite.

OSLER AT THE TOMB OF LOUIS.

A. C. KLEBS, M.D.
CHICAGO.

One day last October a small group of men was crowded in the narrow room of the doorkeeper's house of the Mont Parnasse Cemetery in Paris. Outside the autumnal rain was pouring down, not in the least disconcerting those within. A few soaked gendarmes peeped in through the window, no doubt wondering who were these foreign-looking men who spoke the English language and still could not be from across the channel, because of the absence of formality and stiffness evident in their conversation. They seemed like a little band of intimate friends bound together by a great common interest and full of enthusiasm for it. No outsider could have told that they were men working and striving toward the same goal, although separated by wide stretches of that fertile land across the Atlantic. As they chatted on, no difference of age among them was apparent: they all seemed to be in that blessed middle age, with its enthusiasm, hope and eagerness to learn. But there was one who instantly was recognized as their leader, not because of his greater stature, but for his dark eyes, his high forehead and especially for his dignified though jovial and friendly demeanor—Professor Osler, Dr. Osler or plain Osler they called him. And he seemed a young man among young men and happy to be with his "boys." He was the man we had followed through the wards of Johns Hopkins in some early morning hour, had admired his wonderful gift of perception, his penetrating, thorough scrutiny of all the intricate details of morbid manifestations, his never-failing kindness and attention to the individuality of a patient, and before everything his lucid rendering in simple language of the facts before him for the benefit of his hearers. Never can one forget the scenes in the out-patient department, where he stood surrounded by his boys, helping them as a friend in their struggles with some difficult case. He would go to one, put his arm around his shoulder and then begin a friendly inquiry, interspersed with humorous remarks and allusions to the work done by special students on a given subject. Urging, encouraging, inspiring, so we saw him, exact always, dogmatic never, and when the humorous and friendly fire kindled in his eyes we could not help but love him and with him the task we had chosen as our lifework. Thus we imagine those *maitres* of the old French school, a school no longer limited by national boundaries, one of those men who have trodden the paths through the wards of the Salpetrière, the Charité and Laribosiere, the Necker, the Hotel Dieu, making apostles and missionaries in the great cause of scientific medicine.

The photograph shows from left to right the following: Klebs, Chicago; Kayserling, Berlin; Beyer, U. S. N.; Whitman, Paris; McCarthy, Philadelphia; Norton, Paris; Osler, Oxford; Pearson, Philadelphia; Magnin, Paris; Jacobs, Baltimore; Knopf, New York; Evans, San Francisco; Lowman, Cleveland; Brennan, New York; Pottenger, Los Angeles.

The shower had stopped and the sun shone through the clouds and out went the little band. They stopped at the door of a mausoleum which bore the inscription, "Famille Louis," and which held the remains of that great French master of medicine, Pierre Charles Alexandre Louis. And their leader and master who had brought them hither placed a wreath of autumnal leaves on the steps of the mausoleum and told this simple story of Louis:

"While not sitting with Bichat and Laennec on the very highest seats of our professional valhalla, Louis occupies a seat of honor and distinction with his friends, Andral and Chomel, and with Bretonneau and Corvisart, with Bright, Addison and Hodgkin, with Skoda and Schonlein—among the men who gave to the clinical medicine of the nineteenth century the proper methods of work. Louis has special claims to remembrance as the introducer of the numerical method, by which he made his works on typhoid fever and on phthisis storehouses of facts which are consulted to-day by students of these diseases.

"Returning from a prolonged residence in Russia, he took up work at the Charité as a voluntary assistant to Chomel, and for years he noted with the greatest accuracy and detail the chief symptoms in certain diseases and then correlated these with the postmortem appearances. It was an original attempt to introduce mathematical accuracy into the study of disease. The story of his work has no parallel, so far as I know, in our profession. On his return to Paris he was 33 years of age. He entered the hospital as a clinical clerk with his friend Chomel, and for nearly seven years he devoted his entire energies to the rigorous and impartial observation of disease. He took no private practice and allowed nothing to interfere with his daily routine. A number of important researches appeared as a result of these studies. But the two diseases to which he devoted the greater part of his energies were phthisis and typhoid fever, the works on which appeared in 1825 and 1829. Both of these are worth studying to-day as illustrating methods of accurate clinical analysis and pathologic observation.

"But it is not on account of these works or for his subsequent important studies that we meet to-day to do him honor. He has a far higher claim on our affection and gratitude, as through his students he may be said to have created the American school of clinical medicine. Between 1830 and 1850 a group of young men from America studied here and came under his influence in a very special manner. Earliest to arrive, and chief among them in his affection, was James Jackson, Jr., son of Prof. James Jackson of Harvard, and him Louis loved as a son and mourned his untimely death, as we learn from the touching letters to his father. To give the names of Louis' American students is to mention the men who, in the third quarter of the nineteenth century, occupied the most prominent position in our ranks: from Boston, Oliver Wendell Holmes, Henry I. Bowditch, George C. Shattuck; Metcalf, Alonzo Clark, John A. Swett of New York; W. W. Gerhard, Alfred Stille, Pepper, Sr., and Meredith Clymer, of Philadelphia; from the southern states, Power of Baltimore and Cagell, of Virginia. Not only were these men inspired with enthusiasm for medicine and with high ideals in their calling, but there was a personal devotion to their master of a most intimate and delightful character.

"It was my privilege on several occasions to hear Henry I. Bowditch speak of Louis and of his extraordinary kindness to

the young men from America who frequented his clinic, and Dr. Alfred Stille, whose death a few years ago removed the last of this notable band, has often told me of the lifelong affection which he and all of the American pupils had for their great French master.

"It is not too much to say that it was the direct inspiration derived from him that laid the foundation of accurate clinical methods in the United States.

"At the congress concerned directly with a disease so accurately studied by Louis it seems appropriate that we should gratefully acknowledge, on behalf of our brethren in the United States, the deep debt which we owe to this great Frenchman, and in loving memory lay a wreath on his tomb."

And back these men went to their work at the Tuberculosis Congress, inspired by the memories of the great Frenchman's work and that glorious period of 1815 to 1840 of French medicine, the result of the inspiration of the two master minds, Bichat and Laennec. Deeply impressed they were by the solemnity and meaning of this tribute by their American master, their Osler, to one who has passed away, leaving behind him the fruits of his works to the whole world and their country so particularly. And as they went out with Osler's words still in their ears the sense of Ovid's lines came to their minds:

Morte caret animæ, semperque priore relicta
Sede, novis domibus habitant, vivuntque receptæ.

The Relations of the Medical Profession to the Public.—The following editorial appeared in the *Stanford Interior Journal:*

According to program, Dr. McCormack, the representative of the American Medical Association, came on Wednesday and delivered his lecture on "The Relations of the Medical Profession to the Public," at the court house, to a large and appreciative audience. Judge R. C. Warren gracefully introduced the speaker. Dr. McCormack, who is no novice, having spoken on this and kindred subjects all over the United States, immediately began his text. His commanding and graceful presence, his mastery of the English language, his distinct and elegant enunciation, the knowledge of his subject, apparently inexhaustible, and his scholarly methods, commanded instant and persistent attention. He saw that he "had the day" and he used it wisely, simply, brilliantly. There are men made into doctors and there are doctors who were made doctors as soon as they became men. "Yea, from their birth up they were called to treat the sick." Dr. McCormack belongs to this class, and he might have been born talking, too, so far as we know. He has a fluency which is rare, an Irish wit that is exhilarating, and in the presentation of facts and principles all is done with science and skill. Technicalities were so far eliminated that every one, the school children as well as the older ones, readily followed the speaker from start to finish. The large crowd, composed of our best citizens, we are sure will never regret having heard him. They carried home with them impulses more generous to the medical profession; impressions pleasing to remember and suggestions beneficial to their health and happiness. Doctors themselves, and a goodly number was present from Lincoln and Casey—were uplifted by the unswerving firmness with which he upheld the honor and dignity of the medical procession. They had placed before their minds many striking facts which they all should and doubtless will remember. Dr. McCormack, as the poet puts it, is just a very few years past the "Quiet half-way hostelrie on life's long road." His mission is to do good; is not grandiloquent, not exalting his function, not anxious for cheap effects, not making broad the phylacteries, but is loyal to truth, striving after far-reaching results and is most careful not to mislead. In very truth an Apostle of Medicine. May he live long and prosper in the noble work.

Gallstone Colic Without Icterus.—A handsomely illustrated article on this subject by Riedel is published in the *Zeitft. f. aerztliche Fortbildung* for April 1. He remarks that a few years ago he wrote to the presidents of a number of medical societies asking them to have the members as they entered the next meeting requested to state what does the gall bladder contain at the first attack of colic, aside from gallstones? Nearly everyone wrote "bile"; only a few "mucus" or "pus." Riedel found in 100 patients operated on during or soon after the first attack that the bile was normal in none; it was thick and black in 10, and in the other 90 the gall bladder was more or less filled with serum, mucus or pus. The first attack is nearly always due to acute dropsy of the acutely inflamed gall bladder. The stone obstructs the outlet, the bile accumulates and in time its pigments are reabsorbed, leaving the serum. Then comes the acute explosion of the inflammation in a chronically affected organ. He reviews the whole field of differential diagnosis of gallstone affections without icterus, and remarks in regard to treatment that it is not so advanced as that of appendicitis. Physicians strive to make the gallstone "quiet," but, alas, he adds, there is nothing that will make the gallstone stay quiet and at the same time protect against the development of cancer at the spot. He regards every "unsuccessful" attack of gallstone colic as an indication for extirpation of the gall bladder, on the same principles as appendicectomy. This is the only means to guarantee against the passage of the stone into the common bile duct at the next attack, or that smaller stones may not form and cause intoxication if lodged at the papilla, and also to protect against cancer of the gall bladder. Unfortunately, it seems to be true that cancer generally develops in persons whose attention has never been called to their gallstone affection. Careful examination may reveal, however, a history of occasional mild attacks or inflammation of the gall bladder, in the form of stomach cramps. If there is a family record of gallstones, the physician must be on the lookout for such "stomach cramps," and examine the patient carefully during such an attack. If the region of the gall bladder is painful on pressure, some gallstone affection probably exists, and he should advise operation. It is extremely simple in such cases; there is no need even for tamponing, to which much of the after-effects of extirpation of the gall bladder are due. In his experience with about 1,100 gallstone operations, he found carcinoma in 82, ulcer of the stomach or duodenum in 60, and adhesions with floating kidney in 45.

Alligator Oil.—Few people know, says the *Oil, Paint and Drug Reporter,* that the alligator is not only valuable for its skin, but that its grease has a commercial value. It is used principally by manufacturers of chamois leather, probably in conjunction with fish oils, such as crude cod oil, the tanning action depending on the oxidizing of the oils during the fulling and air-drying processes. The preparation of this alligator fat is simple, the flesh of the animal being well sliced and boiled. It is said that the species of alligator indigenous to Madagascar furnishes more solid greases than any other variety of the cayman species, some going so far as to say more than can be obtained from any kind of fish oil. A peculiarity of alligator oil is that it solidifies at the point of congealing, most other marine or fish oils only thickening at the same temperature. After the oil is extracted the flesh is sundried and forms an excellent manure. Certain glands of the alligator, contain a substance having a similar odor to musk, which is used in the manufacture of perfumes.

The Address of Dr. Shipp.—An error in an exchange was copied in THE JOURNAL, April 28, page 1317, paragraph 20. Dr. F. N. Shipp is of Indianapolis instead of Columbus.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE FIRST MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

MORGANTOWN, W. VA., May 22, 1906.

To the Editor:—Kindly inform me where and when the American Medical Association held its first meeting, what the attendance was and the number joining. S. S. W.

ANSWER.—The first meeting of the American Medical Association was the first preliminary convention held in New York on May 5-6, 1846. The attendance was 119. The second preliminary convention was held at Philadelphia May 5-7, 1847. The first annual meeting was held at Baltimore, Md., May 2-5, 1848, at which the attendance was 266. Election as a delegate was the only method of obtaining membership at that time.

STATES RECIPROCATING WITH ARKANSAS.

FALCON, ARK., May 23, 1906.

To the Editor:—What states reciprocate with the state of Arkansas, based on an examination taken before the State Board of Medical Examiners of the State of Arkansas? J. H. D.

ANSWER.—Arkansas has made no provision for reciprocity. For further information we suggest that you write to Dr. J. P. Runyan, Little Rock, secretary of the Arkansas Board of Medical Examiners.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending May 26, 1906:

Robbins, Chandler P., asst.-surgeon, ordered to proceed from Fort Ethan Allen, Vt., to Madison Barracks, N. Y., for temporary duty.

Marrow, Charles E., asst.-surgeon, reported for temporary duty at Army General Hospital, Washington Barracks, D. C.; left Fort Monroe, Va., May 20, 1906.

Harvey, P. F., asst.-surgeon-general, relieved from station at Governor's Island, N. Y., and will take station in New York City, in connection with his duties as chief surgeon, Department of the East.

Hogan, David D., contract surgeon, granted an extension of one month to his leave of absence.

Springwater, Samuel A., contract surgeon, left San Francisco, Cal., on leave of absence for two months.

Wing, Franklin F., dental surgeon, left Fort Washakie, Wyo., and arrived at Fort Robinson, Neb., for duty.

Long, Charles J., dental surgeon, left Fort Missoula, Mont., and arrived at Fort Yellowstone, Wyo., for duty.

Carpenter, Alden, dental surgeon, left Vancouver Barracks, Wash., for a professional tour of the posts in Alaska.

Byars, Caspar R., contract surgeon, ordered from Jefferson Barracks, Mo., to duty at Arcadia Rifle Range, Mo., during the target practice season.

Macy, Fred S., contract surgeon, ordered from Fort Adams, R. I., to Fort Ethan Allen, Vt., for temporary duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending May 26, 1906:

Wilson, H. D., surgeon, detached from the Naval Hospital, Portsmouth, N. H., and ordered to the *Dixie*.

Traynor, J. P., P. A. surgeon, ordered to the Naval Hospital, Portsmouth, N. H., for additional duty.

Allen, A. H., asst.-surgeon, ordered to the Naval Hospital, Naval Home, Philadelphia, Pa.

Orders issued by Commander-in-Chief of Asiatic Station.

Edgar, J. M., surgeon, detached from the *Monadnock* and ordered home.

Nash, F. S., surgeon, detached from the *Rainbow* and ordered to the *Monadnock*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 23, 1906:

Bailhache, P. H., surgeon, granted leave of absence for one month, from June 9, 1906.

Stoner, G. W., granted leave of absence for three days, under Paragraph 189 of the Regulations.

Stoner, G. W., surgeon, directed to proceed to Liverpool, England, and other points in Continental Europe for special temporary duty, on completion of which to rejoin his station at Ellis Island, N. Y.

McIntosh, W. P., surgeon, granted leave of absence for ten days, from May 25, 1906.

Brown, D. W., P. A. surgeon, granted leave of absence for two months, from July 2, 1906.

Rodman, J. C., acting asst.-surgeon, granted leave of absence for five days, from May 29, 1906.

Townsend, F., acting asst.-surgeon, granted leave of absence for five days, from May 22, 1906.

Weldon, W. A., acting asst.-surgeon, granted leave of absence for thirty days, from July 15, 1906.

BOARD CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., on May 19, 1906, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon L. L. Williams, chairman; Asst.-Surgeon W. H. Frost, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended May 25, 1906:

SMALLPOX—UNITED STATES.

Arkansas: Fort Smith, April 28-May 12; 5 cases.
California: Los Angeles, April 28-May 12, 2 cases; Mill Valley, May 12, 1 case; Oakland, May 7, 3 cases, in camps; Petaluma, May 12, 1 case; Pleasanton, 1 case; Stockton, April 1-30, 1 case.
District of Columbia: Washington, May 5-19, 18 cases.
Florida: General, May 12-19, 14 cases; Jacksonville, May 5-19, 4 cases.
Georgia: Augusta, May 7-21, 4 cases.
Illinois: Chicago, May 12-19, 3 cases.
Kansas: Abilene, April 14, 12 cases; Topeka, May 5-12, 1 case.
Louisiana: New Orleans, May 5-19, 12 cases.
Maryland: Baltimore, May 12-19, 1 case.
Michigan: Detroit, May 12-19, 2 cases.
Missouri: St. Louis, May 5-19, 3 cases.
Montana: General, April 1-30, 3 cases.
Nebraska: Omaha, May 12-19, 1 case.
North Carolina: Greensboro, May 5-19, 2 cases.
Ohio: Cincinnati, May 4-18, 12 cases; Dayton, May 12-19, 2 cases.
Pennsylvania: Lancaster, March 29-April 19, 2 cases; Philadelphia, March 31-April 7, 2 cases; April 14-21, 2 cases; April 28-May 12, 2 cases; Pittsburg, 4 cases, 1 death.
Tennessee: Memphis, April 28-May 19, 29 cases; Nashville, May 12-19, 3 cases.
Wisconsin: Appleton, May 5-19, 3 cases; La Crosse, May 5-12, 3 cases; Marinette, May 7-19, 5 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, April 7-14, 7 cases; Monrovia, March 1-30, 3 cases.
Argentina: Buenos Ayres, Feb. 1-28, 38 cases, 25 deaths.
Belgium: Antwerp, April 21-28, 4 cases, 1 death.
Brazil: Pernambuco, March 18-April 15, 25 deaths; Rio de Janeiro, April 15-22, 1 case.
Canada: Toronto, April 28-May 12, 4 cases.
China: Hongkong, March 31-April 7, 15 cases, 15 deaths.
France: Marseilles, April 1-30, 2 deaths.
Germany: Bremen, April 28-May 5, 1 case.
Great Britain: Bristol, April 28-May 5, 1 case; Cardiff, 2 cases; London, 3 cases; Newcastle-on-Tyne, 1 case.
Greece: Athens, April 21-May 6, 5 deaths; Patras, March 27-April 10, 2 cases, 2 deaths.
India: Bombay, April 17-24, 18 deaths; Calcutta, April 7-24, 206 deaths; Karachi, April 15-22, 20 cases, 13 deaths; Madras, April 14-20, 42 deaths; Rangoon, April 7-14, 51 deaths.
Italy: General, April 26-May 3, 35 cases.
Japan: Hironuma, April 21-28, 1 case.
Russia: Odessa, April 14-28, 30 cases, 6 deaths; St. Petersburg, March 31-April 21, 28 cases, 6 deaths.
Spain: Barcelona, April 20-30, 12 deaths.
Turkey: Constantinople, April 15-29, 2 deaths.

YELLOW FEVER—FOREIGN.

Cuba: Matanzas Province, May 18-23, 2 cases, 1 death.
Mexico: Merida, May 10-12, 3 cases, 2 deaths.
Panama: Colon, May 22, 1 death.

CHOLERA—FOREIGN.

India: Bombay, April 17-24, 40 deaths; Calcutta, April 7-14, 48 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, May 13-21, 2 cases, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, March 31-April 7, 24 cases, 2 deaths.
India: Bombay, April 17-24, 1,084 deaths; Calcutta, April 7-14, 260 deaths; Karachi, April 15-22, 253 cases, 198 deaths; Rangoon, April 7-14, 64 deaths.
Japan: Wakayama, April 21-28, 1 case.
Peru: Lima, April 1-9, 6 cases, 1 death; Mollendo, 1 case, 1 death; Pascamayo, 5 cases, 1 death; Reque, 1 case, 1 death; Trujillo, 4 cases, 3 deaths.

Society Proceedings

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Boston, June 5-8.

American Academy of Medicine, Boston, June 2-4.
Amer. Assn. of Life Insurance Exam. Surgeon, Boston, June 4.
American Gastro-Enterological Assn., Boston, June 4.
American Urological Assn., Boston, June 4-5.
American Proctologic Society, Boston, June 5-6.
American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-13.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springs, June 20-22
Medical Society of New Jersey, Atlantic City, June 19-21.
State Medical Society of Wisconsin, Milwaukee, June 27-29.
American Ophthalmological Society, New York City, June 28-29.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held March 28, 1906.

The President, DR. CHARLES K. MILLS, in the Chair.

Sanitary and Moral Prophylaxis.

DR. PRINCE A. MORROW, New York, president of the American Society of Sanitary and Moral Prophylaxis, said that the prophylaxis of venereal diseases has long been recognized as the most difficult and delicate of all problems of social hygiene, and that the satisfactory solution of this problem would represent the greatest possible benefit that preventive medicine could render humanity. Notification, the first and most essential condition of sanitary control, does not appear to him to be practicable; here the medical secret dominates the situation. It is evident that medical measures must be supplemented by influences and agencies which can more effectively intervene in the correction of the causes of these diseases and the conditions under which they are spread; especially must they be adapted to their peculiar nature and communicative mode. He declared it to be the duty of the medical profession to let men know to what they expose themselves, and especially to let them know that the introduction of these diseases into marriage has on their dependents and on future generations all the consequences of crime.

The peculiar difficulties in the way of this prophylactic education was referred to. Experience in dealing with other communicable diseases has shown that the most essential condition of success is the creation of public sentiment. It is especially needful that the light of publicity should be turned on a class of diseases which infect unseen the social body, which aptly typify "the pestilence that walketh in darkness" and whose ravages have been concealed. This, he believes, can be done most effectively by exposing the grave dangers to health from venereal infection, the economic and social interests involved and especially the dangers to the family. Dr. Morrow recounted the experimental work done by the American Society of Sanitary and Moral Prophylaxis organized in New York twelve months ago. It was found that the society must be composite in character, embracing in its membership medical men, representatives of the clergy, the law, public educators, sociologists and public-spirited citizens interested in the social welfare. For the first year it was decided that the meetings should be a sort of continued educational symposium, embracing the subjects of the education of the youth of the country in sexual physiology and hygiene, studying the nature and scope of this instruction, the age at which it should be given, whether it should be progressive according to the age of the individual, through what agencies it should be given, etc. There were further considered the subjects of the education of the young men and young women of the working classes, education of the men of the Army and Navy, and finally the great body of the general public. In the practical application of this educational scheme popular educators and practical pedagogists were invited to point out specific methods for carrying out the work. The question of the education of young women of the working classes was submitted to women physicians for discussion. In the matter of educating men of the Army and Navy the co-operation of the national government was solicited. It was shown that venereal diseases constituted the largest factor in impairment of the efficiency of the service of the Army. The enlightenment of the great body of the general public was regarded as, perhaps, the most important and yet the most difficult part of the society's program. The newspaper press is absolutely barred to the mention of venereal diseases, and yet, Dr. Morrow believes that certain types of newspapers are the most powerful of all agencies in the dissemination of venereal diseases by printing quack advertisements which hold out deceptive promises of cure of gonorrhea in from three to ten days, of syphilis in from 30 to 60 days, leaving their dupes to sow broadcast the seeds of disease which might have been sterilized by scientific treatment. Dr. Morrow states that whether or not this be false ethics, it must be accepted as newspaper ethics. He regards it a fortunate matter that the entering wedge which may serve to open up communication with the public has been found in the *Charities and the Commons*, whose editor has the courage and public spirit to disregard traditional prejudice and print the papers and discussions of the American Society of Sanitary and Moral Prophylaxis.

The educational feature does not represent the entire scope of the society's work. There are in addition committees on treatment, on "the social evil," and on legislation. Dr. Morrow was emphatic in his declaration of the duty of the medical profession to proclaim the doctrine that continence is not prejudicial to health. The almost universal infection of the minds of young men with the converse of this doctrine—the so-called "sexual necessity"—is, in his opinion, the most powerful determining cause of masculine immorality.

Syphilis and Gonorrhea of the Innocent.

DR. EDWARD MARTIN spoke of the women and children as two classes who suffer from gonorrhea acquired innocently. A third class, he said, are the doctors who acquire syphilis in the practice of medicine or surgery. In so far as the children are concerned, he thought it fair to state that a large percentage of hydrocephalic and epileptic children and those exhibiting various dystrophies are due to hereditary syphilis. Possibly 10 per cent. of those blind from birth are so from gonorrhea innocently acquired; 5 to 10 per cent. of the deaf and dumb are so because of syphilis. Dr. Martin regarded as extraordinary the fact that the law compels report of a case of diphtheria, which is easily controlled, the transmission of which can be absolutely prevented by modern means, and that syphilis, which can be conveyed directly to the innocent and passed to the next generation, must not be reported. He would approve, through the public school system of Philadelphia, of all children being educated not only in the prophylaxis and the ultimate results of syphilis and gonorrhea, but of all contagious diseases. He sees no more reason why young women should be taught the functions of digestion than that they should be taught the functions of reproduction.

A second step in prophylaxis, he believes, is in holding to strict accountability those responsible for the conveyance of the disease. A third step is in clearing the streets of soliciting women. He agreed with Dr. Morrow in his estimation of the enormous power of the press in the education of the people.

Influence of Municipal Authority in Suppressing Venereal Diseases.

DR. W. M. L. COPLIN, director of public health of Philadelphia, said that any great public movement to be efficient must be supported by a stronger influence than the written law, namely: the irresistible force of public opinion. He spoke of the concealment from the general public of the dangers surrounding venereal disease as a factor in weakening official efficacy and lessening the activity of departmental energy. He was emphatic in his denunciation of official supervision that gives to vice the suggestion of legal sanction. Although highly desirable, he is not certain that there is the legal machinery necessary for exerting a custodial care by immuring or quarantining individuals known to be actively infected and who continue a line of contact propagating venereal diseases. A form of official suppression partaking more of the nature of a police regulation than a sanitary measure, especially directed toward brothels, he believes of value. He noted that coincident with the recent activity of the police and private societies, the number of admissions to the venereal wards of the City Hospital had perceptibly diminished. He thought that all those who have studied the social evil are agreed that the most efficient influence that at present can be exerted must be educational rather than restrictive, and directed to the awakening of the public mind, morally and physically, to this form of immorality. He suggested the co-operation of health authorities with physicians in popularizing appropriate knowledge contained in pamphlets judiciously distributed. Physicians are undoubtedly negligent in not calling the attention of their patients to the danger of propagating venereal disease both to the innocent and to the official offender. As a part of the educational campaign, he suggests the possibility of the city authorities, through the board of health or the board of education, arranging definite lines of instruction, preferably by lectures, to the advanced classes and especially to youths at that age when the sexual functions first conspicuously become manifest. Dr. Coplin regards as within the realm of the practicable the suggestion that the man contemplating marriage should be certified to as free from venereal infection.

Transmission of Venereal Diseases to the Wife.

DR. JOSEPH PRICE spoke of the great number of women on whom he has operated whose reproductive organs were destroyed as the result of venereal disease. He considers the disease equally destructive to the male reproductive organs. He believes that very few men and women are sterile who have lived a "Bible virtuous life."

Influence of the Young Man in Control of Venereal Diseases.

DR. ROBERT N. WILLSON expressed his great pleasure in realizing in this meeting some results of an effort started six years ago in the university toward awakening the medical profession to the needs outlined by Dr. Morrow. He stated his belief that the matter lies in the hands of the young men and of the mothers of this country. Of the 14,000,000 young men under 30 years of age in America he said that probably 50 per cent. are infected with venereal disease before their thirtieth year. In speaking of the control of the evil, Dr. Willson said that the leading newspapers printed, in the last month, columns on the subject of venereal disease and in plain

terms. Pamphlets had been widely circulated and a million American mothers had had placed in their hands facts which should secure their aid in combating the evil. Literature on this subject had been especially distributed among students. He believes that the laymen can do more than the medical men if the facts were in their hands. The mother can add her influence by educating her boys and girls in the knowledge of simple and normal sexual life, and in telling them of the danger from abuse of these functions.

Social Evil from the Publicist's Viewpoint.

Dr. W. B. Hale of the *Public Ledger* said that in his judgment the chief considerations in the combating of this evil are the reflections concerning the physical effect of transgression on one and on others closely related to him, and a remembrance of those higher obligations of which Dr. Tomkins would speak. The part of the newspaper, he said, is (1) positive—to give whatever publicity may seem wise to both these considerations; and, (2) negative—to decline to give publicity to matter calculated to inflame unlawful desires, and to refrain also from publishing items which will pander to the satisfaction of these desires. While in full sympathy with the movement, he felt that the work of the newspaper, in particular, must be chiefly on the negative side. He thinks much would be gained if the newspaper press were persuaded to refuse to publish inflaming news stories, or, at least, displaying them, as is now the case with a certain class of the newspaper press. He does not believe it wise in the accounts of disorderly houses raided to give the streets and numbers of these houses, and as to advertising places like this in due form of advertising, he declared that a community that would tolerate it is not a decent community. He thought the effort against the social evil can be directed to no better purpose than to discourage the circulation of papers advertising lewd houses, massage houses, rooms with privileges, and illegal practitioners. As to the positive influence for good which the newspaper might exert, he feared that in the present state of public sentiment it would not be possible to print the facts presented to the meeting. He is not convinced that it is the function of the newspaper to enter on a specific campaign against the social evil, but believes that it is one of the responsibilities of the press to fight the evil as it can and at least to do all possible to keep the general tone of the press sweet, sound and wholesome so that the particular work under discussion can be carried on effectually by those on whom it must chiefly rest, the fathers, the mothers, the medical profession and the pulpit.

Social Evil from the Viewpoint of the Pulpit.

The Rev. Dr. Floyd W. Tomkins said that the pulpit believes, first, that the ideal of social morality must be kept very high, and there must never be any question of lowering it; the licensing or segregation idea can not be considered; second, there must be equal justice in judgment so that the one who sins shall be judged as severely as the other; there must be the teaching in plain terms that there is no difference between the sin of the man and the sin of the woman, unless it make the sin of the man the greater. Much is heard of "fallen women," but nothing of "fallen men." The woman, sinning from love, is ostracized; the man, sinning from lust, is not only allowed to go scot free, but is welcomed in social circles and allowed to mingle with the wives and daughters who should be protected. In the third place, everything possible must be done to educate in the schools and colleges, as well as in the family. In the fourth place, there must be impressed on physicians as well as on ministers the necessity of firm personal appeal and earnest warning.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Second Annual Meeting, held at Washington, D. C., May 16-18, 1906.

The work of the association began with a joint meeting held with the Association of American Physicians on Wednesday evening, President Billings of the latter society presiding.

Immunity in Tuberculosis.

Dr. Simon Flexner, New York, gave a general review of the work accomplished since the inception of this idea. The question of the difference between tubercle bacilli in different types of mammals is of great importance in the problem, the avian infection occurring rarely in man. Human tuberculosis is caused by either the human or the bovine bacillus. The attempts to limit the disease in man must depend largely on the methods of infection. The reduction of 35 per cent. in the mortality from the disease in New York since 1886 is a great encouragement. Immunity has been attempted by various products. Tuberculin will increase the resistance in some animals, but not in a marked manner, it being almost innocuous to the bacillus-free body. Dead bacilli produce a reaction, but the body is still susceptible to the living organism. The only immunity worthy of the name has been produced by the inoculation of living bacilli. Acquired immunity does not appear in man, yet there appears to be a refractory condition that is increased by infection, the human body possessing a strong inherent capacity to overcome the action of the tubercle bacillus. Dr. Flexner reviewed the efforts of various observers to induce immunity, stating that Behring deserves credit for demonstrating that in animals some degree of resistance can be produced. The question as to the duration of this resistance, which Behring thinks is during life, is still open. When immunity has been produced in cattle by the action of living human tubercle bacilli, are the cattle dangerous to the consumer? There are but few observations on this question, and no scientific deductions have been made. Finally, reference was made to the new use of tuberculin in treatment advocated by Wright, the cautious injection of this material tending to produce a rise of the opsonic index. This problem is one of great intricacy, but there appears the possibility of arousing the organism to put forth greater effort against the invading bacillus.

Duties, Responsibilities and Opportunities of the Association.

Dr. Lawrence F. Flick spoke of the good work accomplished by the association during the past year. Three things are prominent: the bringing to this country of the next meeting of the international congress, the establishment of exhibition meetings throughout the country and the creation of an advisory council. For the congress he urges the raising of a fund of $100,000 for expenses, and the early opening in Washington of an office for arranging the details of the meeting. The local exhibitions held in a number of the cities of this country during the past winter accomplished a great deal of good in educating the people. The program is to be extended to other cities and towns. The advisability of establishing permanent exhibitions in the large cities is to be considered.

Surprise has been expressed that physicians who are paid for curing disease should make such efforts to prevent it and thus take away their livelihood; the physician goes into such a crusade as a philanthropist, not as a physician. There is not enough knowledge regarding tuberculosis among others than physicians. More women should become members. Professors in colleges should enlist in this work, as no other class possesses such opportunities for enhancing the cause. The medical profession as a whole has hindered rather than helped the crusade against tuberculosis. Business men do not respond to the call as, for several reasons, they should do. The great work of the society is the creation of public sentiment in favor of its aims. A press bureau for furnishing reliable information concerning every aspect of the tuberculosis problem would be of inestimable value in this respect. The press is now ready to aid and the papers want correct statements about the disease. A lecture bureau to furnish men thoroughly competent to address the people would also help much in spreading knowledge regarding the prevention of tuberculosis.

Report of the Secretary.

Mr. Livingston Farrand, general secretary of the association, stated that the membership at the meeting last year was 406; now it is 1,012. There are now 10 state societies in correspondence with the association, 8 more are forming organizations, and 6 have started a movement against tuberculosis. The exhibition meetings in the various cities were a

success, the attendance being more than 160,000. The association is constantly forming affiliations with societies or organizations that will aid in the dissemination of knowledge. It now has the co-operation of the National Federation of Labor, and numerous magazines are interested in the promulgation of its ideas.

The association adopted the double red cross as the official insignia of the society. The scientific work was carried out under five sections, the sociologic, pathologic and bacteriologic, the clinical and climatologic, the surgical and that on tuberculosis in children.

SOCIOLOGIC SECTION.

Tuberculosis Nostrums.

MR. SAMUEL HOPKINS ADAMS, New York, said that from the perusal of advertisements he has arrived at the conclusion that any one except the regular practicing physician can cure tuberculosis. Physicians do not believe this, but thousands of people do, and therein consists the harm of these frauds. Of the nostrums there are two classes: The positively harmful nostrum containing opium, hasheesh, alcohol or chloroform. The negatively harmful nostrum, which comprises a large list and, unfortunately, contains many so-called ethical preparations endorsed by physicians, though the names of some are frauds, as are the medicines. Improvement is coming from the agitation against these nostrums. Some are now omitting their claim to cure consumption; one says the public is getting "wise" on consumption and something else, as cancer, must be taken up. The work of the public schools is creating a commendable sentiment in the minds of the young. The whole matter of nostrum control is now under readjustment throughout the country. The "patent-medicine" bill in New York passed the senate, but was killed in the house by the pernicious activity of drug interests, which secured the concession of certain unimportant drugs as amendments. These were adopted on the last day, and meant that the bill could not be passed at that session. Maryland fought a good fight, but the Bull's cough syrup and the bromo-seltzer people won out. In Mississippi a bill was killed by the committee on public health. Ohio and Indiana failed, and in Massachusetts a compromise bill was adopted. Many influential journals have come out for legislation. Another hopeful thing is that numerous journals have taken to publishing legitimate news regarding nostrums in spite of their advertisements.

DISCUSSION.

DR. FRANK BILLINGS, Chicago, said that it was unfortunate that in the discussion of this subject the two classes most needing to hear were not present—the laity who suffer from the nostrum traffic and the numerous members of the medical profession who aid the nostrum dealers. He made emphatic the point that all drugs for the specific cure of tuberculosis, whether ethical or not, do more harm than good. The treatment of tuberculosis by drugs to-day is largely the outcome of methods in vogue years ago, when we did not know the nature of tuberculosis. The laity believe in the efficacy of drugs and so, unfortunately, do many physicians who are not educated up to the present-day knowledge of the disease. These physicians in numerous instances are to be reached and educated rather than condemned. Their circumstances do not permit of travel and even of reading as they should. Education of this class is the duty of the association.

DR. J. W. IRWIN, Philadelphia, has made inquiry of druggists regarding the class of people who buy these nostrums for curing tuberculosis. Some believe that poor people buy to escape paying physician's fees, but it is surprising to find what a large number buy the preparations on the advice of physicians. Wealthy people also are patrons. The campaign of education must reach physicians, the laity, school children, teachers and pharmacists.

DR. E. L. TRUDEAU, Saranac Lake, as an illustration of the value of education, mentioned Saranac Lake, where are gathered a large body of people who certainly need cures as much as any one can, yet it would be difficult for nostrum sellers to go among the boarding-houses and dispose of their preparations; the people have been educated against them.

(*To be continued.*)

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-first Annual Meeting, held at Washington, D. C., May 15-16, 1906.

(*Continued from page 1643.*)

Perinephritis Simulating Stone in the Kidney.

DR. JAMES TYSON, Philadelphia, has seen four cases in which the symptoms pointed to nephrolithiasis, but in which operation revealed no stone in the kidney. Search for a cause led to the discovery that there were dense adhesions of the perirenal fat to the capsule, and in some instances also adhesions between the capsule and the kidney itself. The capsule in certain of the organs showed distinct cicatricial markings. Relief was invariably obtained from operation, which consisted in splitting the capsule and thus freeing the kidney from pressure and other interference arising from the inflammatory condition. Three of the four patients were totally relieved, the fourth being helped for a time, the symptoms afterward returning. In this case the kidney was also adherent to the liver, the bands being freed when the capsule was split. The return of the symptoms after operation is attributed to the reformation of the attachment to the liver.

Disseminated Sclerosis: Its Infrequency in This Country, and Its Clinical Manifestations.

DR. JOSEPH COLLINS, New York, said that this disease is quite frequent in Europe, but that relatively few cases are reported in this country. The belief that the disease is extremely infrequent here is not justified. The diagnosis is seldom made unless the four classic symptoms of Charcot—nystagmus, intention tremor, spastic paraplegia and scanning speech—are present, but all these are not found in every case. Dr. Collins has seen 65 cases of the disease; in only 26 of them were all the characteristic symptoms present. In 11 of the remaining 39 cases the patients were under observation long enough for all the symptoms to develop. Several types of atypical cases were described: 1. Spastic paraplegia in a non-syphilitic person under 40, with no bone disease, should raise the question of disseminated sclerosis, and if, in addition, there is loss of the abdominal reflex, there is no doubt as to the diagnosis. 2. In persons with pallor of the optic disc, with no inflammatory condition, unchanged by treatment, the chances are that within ten years one or all of the symptoms of sclerosis will develop. 3. The existence of spastic paraplegia, unaccompanied by the history of syphilis or pallor of the optic disc, means disseminated sclerosis. 4. Disseminated insular sclerosis not infrequently gives rise to symptoms like those of acute inflammatory processes in the cord or brain.

DISCUSSION.

DR. B. SACHS, New York, did not regard the diagnosis of disseminated sclerosis as easy. In 220 cases of organic nerve lesion he has made the diagnosis of multiple sclerosis 15 times, five additional cases being doubtful. He thinks that the disease is probably a little less common in this country than in Europe.

DR. WHARTON SINKLER, Philadelphia, believes that disseminated sclerosis is more common in this country than it is thought to be. However, there is apt to be a tendency to go to the other extreme and to make the diagnosis too frequently.

Mental Disorders Associated with Acute Chorea.

DR. B. SACHS, New York, spoke of cases not belonging to chorea insaniens in which varying types of mental disturbance are associated with the choreic disturbances, the two developing simultaneously. These occur during the course of or follow toxic and infectious processes, and are met in cases of acute general chorea in subjects from 10 to 20 years of age. There if often mental dullness or possibly delirium, distinctly different than occurs in ordinary cases. The prognosis is usually grave. In one case the condition was associated with acute rheumatic endocarditis, the rheumatism, endocarditis and chorea all probably being due to the same cause.

Recurrent Acute Pulmonary Edema.

DR. DAVID RIESMAN, Philadelphia, reported six cases of a variety of pulmonary edema which, though rare, is of great

clinical interest, as each attack seems to put the patient in imminent danger of death. Onset is sudden, the lungs and air passages rapidly filling with fluid which, as it is expectorated or runs from mouth or nose, is serous, frothy, and at times blood-tinged. Dyspnea is intense and râles are heard over the chest. Pulse is full and bounding or imperceptible at the wrist. At height of attack the patient appears in danger of suffocation. The first attack may kill, but recurrence is the rule. Dr. Riesman has seen this condition in association with chronic interstitial nephritis, arteriosclerosis, angina pectoris, asthma, and during pregnancy. Two of the six patients died during attacks, and one from cardiac dropsy. The cause is obscure, there being no single explanation. In the two cases of asthma the explanation of Welch suffices. When there is high arterial tension the action of toxins is the best explanation. Treatment, when there is high arterial tension and cyanosis, is venesection. Dry cupping, atropin and diffusible stimulants are indicated in certain cases.

DISCUSSION.

DR. F. P. KINNICUTT, New York, regards the pathogenesis as varied. In those cases occurring in arteriosclerosis there is hypertonicity of the vessels, which usually leads to damage of the myocardium. The sequence then in the production of edema is hypertonicity of vessels, vasomotor spasm, and sudden dilatation of the left ventricle.

DR. H. A. HARE, Philadelphia, emphasized the need of more accurate language regarding the condition of the vessels; by vasomotor spasm is probably meant vascular spasm. Rather against this view are the facts that the vessels in the pulmonary area possess a poorly developed musculature and there is also a scanty vasomotor supply. He regards pulmonary edema as the result of toxemia.

DR. S. J. MELTZER, New York, believes that change in the vessels is the cause of edema. He regards the use of adrenalin as dangerous in pulmonary edema, having seen patients die from the effects of a second injection of that drug. He recommends nitroglycerin.

DR. E. G. JANEWAY, New York, said there are other ways of eliminating serum without its being thrown into the lungs. Excessive perspiration sometimes occurs, and in one of his cases there was profuse diarrhea, the leakage of excessive fluid needing removal thus taking place in other ways. This suggests that the excess of fluid is the condition present and that more changes exist than those in the heart and vessels.

DR. F. P. SHATTUCK, Boston, stated that in acute pulmonary edema of the arteriosclerotic type he employs nitroglycerin. In one case the râles disappeared five minutes after the use of the drug. Morphin is also valuable.

DR. KINNICUTT has used adrenalin frequently in hospital wards. It never has given bad results and frequently does good.

DR. F. FORCHHEIMER, Cincinnati, has used adrenalin and obtained good results. He does not believe that adrenalin also produces edema.

DR. A. L. MILLER, Chicago, confirmed the point made by Dr. Meltzer as to the production of pulmonary edema in animals by the use of adrenalin.

DR. S. SOLIS-COHEN, Philadelphia, said his experience with adrenalin applied locally in edema of the larynx is good, but that edema of the larynx may also be caused by adrenalin. Acute pulmonary edema came on in a physician who was taking large doses of nitroglycerin under the supposition that he had angina pectoris. Adrenalin was given by Dr. Cohen and the edema subsided. Small doses of nitroglycerin were recommended. A second attack of edema subsided under the use of camphor. The patient is now doing well under the influence of one-thousandth grain doses of nitroglycerin, the supposed angina pectoris being really pulmonary edema.

DR. R. H. BABCOCK, Chicago, referred to a case of fatal pneumonia, during which the patient had several attacks of pulmonary edema, which were relieved almost at once by one fiftieth of a grain of atropin.

DR. J. H. MUSSER, Philadelphia, uses morphin early in these cases because there is shock in all of them. Nitroglycerin follows the morphin. In such cases the differential diagnosis between pulmonary edema and acute dilatation of the heart must be made.

DR. JAMES TYSON, Philadelphia, believes atropin to be the most satisfactory remedy in these cases.

Some Dangers of Thoracentesis with Special Reference to Pneumothorax.

DR. GEORGE G. SEARS, Boston, spoke of the two accidents that may follow thoracentesis—sudden death and pneumothorax. Of the former there are 10 cases on record. Of the latter he has found 51 cases in the literature and adds four. The diagnosis in some instances is not easy, and this may account for some cases being overlooked. About one-third of the patients died, but it is doubtful if many died from the presence of air. The puncture of the solidified lung in one case suggests the need of avoiding the reckless use of the needle. It should be used only after all other resources of diagnosis have been exhausted.

Therapeutic Principles Based on Pathologic Physiology.

DR. RICHARD C. CABOT, Boston, said that by pathologic physiology is meant the effort of Nature to react against the causes of disease, as by leucocytosis, hyperemia and similar methods. This form of treatment is to be distinguished from that directed against the etiology, from that destined to remove the results of disease, and from that intended to neutralize symptoms. This treatment aims first, to imitate or to supplement Nature, as illustrated by putting the patient in bed in asthenic conditions, setting broken bones, purgation, establishing passive hyperemia. Second, it aims to oppose Nature, as in forced feeding in Graves' disease, restraining a delirious patient, massage, counterirritation. Third, it aims to modify or to guide Nature, as in diverting thought from disease, giving opium, bathing in typhoid, dieting in diabetes. This type of treatment is not the best nor the worst; it is not so good as treatment directed to the etiology, or so bad as that given to combat symptoms. By this method one must depend on individual factors. Histories must be long and detailed. Not the diseased spot, but the whole patient must be studied.

Pathologic Physiology of Chronic Arterial Hypertension and Its Treatment.

DR. THEODORE JANEWAY, New York, looks on hypertension as the attempt of the organism to maintain capillary flow through important organs and to overcome the effects of disease. This must be followed in turn by organic and functional changes. There are three lines of treatment—preventive, adjuvant and emergent. The first includes hygienic and dietetic rules, the giving of iodids and the exclusion of hypertensive influences. The second includes the use of vasodilators. The third, in cases of sudden conditions, includes venesection, vasodilators, etc. A point emphasized was that the height of the blood pressure is no criterion for the type of treatment.

Therapeutics of Insufficient Kidney, Based on Pathologic Physiology.

DR. ROBERT B. PREBLE, Chicago, regards all the physicochemic methods of testing the function of the kidney, as cryoscopy, the use of methylene blue, etc., as open to grave objections. They should be used only in conjunction with older clinical methods. In cases of low excretion of urine due to heart disease the same precautions should be used as are employed in kidney lesions. The clinical manifestations of nephritis are due to toxins, hence the quantities of toxic materials ingested must be limited and the excretion of those already acting favored. The formation of toxins from food in the intestinal tract must also be borne in mind. Venesection is the most prompt means of eliminating toxins.

Therapeutics Based on the Physiologic Principles of Environment.

DR. WALTER B. JAMES, New York, said that not enough attention is paid to environment in hospital wards. This includes two phases, the psychic and the physical. Under the former are such points as showing the specimens from one case in the presence of another patient with the same disease, recovery from anesthesia in the presence of others to

undergo operation, death in the presence of other sick people. Under the second head he discussed ventilation. There is a difference of opinion as to what ventilation is. He regards expired air as harmless, except for the CO_2 it contains. The temperature and stillness are important features. Most artificial systems of ventilation are faulty, as they attack the problem from the standpoint of respiration instead of the cutaneous needs. He has had a ward cut off from the ventilating system and opened the windows. Typhoid fever patients have been under a sheet only at a temperature of 36°; why not abstract heat continuously, he asks, instead of every three hours? On the whole, his results have been satisfactory.

Physiologic Principles of Feeding in Typhoid and Other Fevers.

DR. F. P. KINNICUTT, New York, reported composite statistics made up from many different hospitals, and discussed at length the general principles governing this method. He secured 733 cases in which the so-called liberal diet was given, and 4,277 in which the milk or fluid diet was followed. In relapses the two are about equal, but in the matter of hemorrhage, perforation and mortality, the liberal diet has a decided advantage over the other. Kinnicutt favors basing the diet on individual cases and not on a routine, especially a fluid diet. If more food is given, the patient will suffer less, and the long, tedious convalescence will be wiped out.

Physiologic Limitation of Rectal Feeding.

DR. D. L. EDSALL, Philadelphia, asserted that the physiologic limitation of rectal feeding is a very narrow one. In a very large proportion of cases the quantity absorbed is only a small part of the amount necessary to maintain nutritional equilibrium. Water and salts are the principal ingredients that are absorbed by the intestine. In the great majority of cases 150 to 300 calories only are thus obtained; in a few cases 500 to 600, and in rare instances the person is kept in good condition. The last group of cases are explained in various ways. Persons who are greatly reduced when feeding is begun may maintain their lowered equilibrium, but this is not health. Emaciated persons may thus increase in weight by the absorption of water. Many cases reported as doing well by this feeding are examples of loose statements. It is possible that in rare instances the ileocecal valve allows the passage of the enemata into the small intestine. Dr. Edsall does not anticipate very much improvement in this method of feeding, as the limitations are of a nature not to be overcome. It may be bettered by the production of artificial substances which the bowel will more readily absorb. At present the dextrinized carbohydrates are the most promising of the carbohydrates employed.

DISCUSSION.

DR. W. S. THAYER, Baltimore, said that Dr. Janeway's experiments show that polyuria begins before blood pressure rises, increased pressure and secondary heart hypertrophy coming on after the polyuria has been present some time. Thayer declared that he has always felt that diet in typhoid fever should be regulated as in other cases of septicemia. The patients of country doctors often are given the best chance in some respects, because there is not the routine as laid down in hospital work.

DR. W. H. THOMPSON, New York, said no mention had been made of changes in the veins analogous to those in the arteries. In them are found hyperemia, inflammation of the intima, atheroma, and calcification when there is no toxemia to cause them. Here strain is acting. Atheroma anywhere is a sign of abnormal strain and means an excess of adrenal substance in the blood.

DR. THOMAS MCCRAE, Baltimore, prefers conservatism on the side of simple liquid diet in typhoid fever. While probably 75 per cent. of patients will recover without this care in diet, we do not know which they are, and we must look out for the others. The statistics presented deal with series in which the mild and the severe cases were fed differently and hence are not of great value.

DR. H. A. HARE, Philadelphia, endorsed the feeding of typhoid patients. During the first ten days he gives milk diet; then when the patient is accustomed to the bed, the surroundings, the attendants, etc., the diet as outlined by Dr. Kinnicutt is ordered. Patients may not do well if the liberal diet is given at first, but it is exceedingly advantageous, he considers, during the later periods. Typhoid ataxia is not seen in patients thus fed. The nitrites are entirely futile in some cases of hypertension, those in which fibrosis of the vessels is present. Iodids, massage and rest do better. Nitroglycerin in these cases will not cause the headaches it does in spasm cases.

DR. ALFRED STENGEL, Philadelphia, stated that while a certain degree of sclerosis probably exists in cases of high arterial tension, there are additional causes and consequently considerable fluctuation in pressure is possible. The diastolic pressure is of great importance in the study of the condition, as if it be not taken into account, an apparent fall with pressure really about the same, may be taken for a real drop.

DR. F. P. SHATTUCK, Boston, has been using the liberal diet for typhoid patients for 13 years, feeding according to the digestive power of the individual rather than according to the disease. The subjects so fed go along more comfortably, and convalescence is shorter. He gives this diet during ulceration, as he supposes all patients have at least some ulcers, but not during attacks of diarrhea.

DR. HENRY KOPLIK, New York, gives more than a milk diet to prevent extreme emaciation in children, who do not recover from this condition so readily as adults. If emaciation be extreme, it is advisable to give the liberal diet even early in the attack.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Miliaria (Prickly Heat).

In carrying out the prophylactic treatment of prickly heat the *Cyclopedia of Medicine and Surgery* recommends that children be lightly clad in thin woolens and exposed to heat as little as possible. Constipation should be avoided. The following is recommended, to be applied locally:

R.	Acidi carbolici	m. xxx	2
	Acidi borici	ʒi	4
	Zinci oxidi	ʒiss	6
	Glycerini	ʒii	8
	Alcoholis	ʒii	60
	Aquæ q. s. ad	ʒvi	180

M. Ft. lotio. Sig.: To be applied locally to the skin.

As a dusting powder the following combination is of value:

R.	Magnesii carb.		
	Acidi borici		
	Pulv. amyli, āā	ʒii	8

M. Ft. pulvis. Sig.: To be dusted over the areas involved.

When the entire body is involved the patient should receive bran, starch or alkaline baths.

Hyde recommends lotions of lead or of lead and opium in some cases, or alcoholic and ethereal solutions containing camphor and glycerin similar to the following:

R.	Acidi carbolici	ʒiss	6
	Glycerini	ʒii	8
	Mentholis	ʒi	4
	Spts. vini rectif.	ʒi	30
	Aquæ q. s. ad	ʒviii	240

M. Ft. lotio. Sig.: To be applied locally.

Or the following:

R.	Olei lini		
	Liq. petrolati, āā	ʒii	60
	Olei bergamii	ʒss	2
	Aquæ calcis q. s. ad	Oi	500

M. Sig.: To be applied externally to the body.

The foregoing combination makes a creamy solution which often is very grateful to the skin. If desired, zinc oxid or carbolic acid may be added.

The general treatment of the patient, according to Hyde, should consist in withdrawal from light and heat, the use of unstimulating food and drink, unirritating apparel, and rest. The free use of lemonade or vichy water or any reliable carbonated water is of value in aiding elimination and in supplying the fluids demanded by the cutaneous loss through evaporation. Lassar's paste is serviceable in some cases of pruritus. It is composed as follows:

℞ Resorcini
Zinci oxidi
Pulv. amyli, āā 5i 4
Liq. petrolati 5ii 8

M. Ft. unguentum. Sig.: To be applied locally.

Or resorcin may be used in the following combination:

℞ Resorcini ..... gr. xxx 2
Creosoti ..... m. xv 1
Lanolini 5ii 60

M. Ft. unguentum. Sig.: To be applied locally to the affected areas.

Copaiba.

Copaiba, according to Beasley, is a diuretic and a stimulant to the mucous membranc in general. It is of value in diseases of the genitourinary organs, as in gonorrhea and gleet, and as an expectorant and disinfectant in bronchitis. Its disadvantages are that it occasionally produces disagreeable eructations and sometimes produces an erythematous rash.

In gonorrhea the following combination is recommended:

℞ Copaibæ 5ss 2
Spts. etheris nitrosi
Liq. potassæ, āā ..... m. x 65
Mucil. acaciæ 5i 4
Aquæ cinnamomi q. s. ad 5i 30

M. Sig.: One such dose after each meal. Or:

℞ Copaibæ
Essentiæ pepsini, āā 5ss 2
Liq. potassæ ..... m. xii 75
Pulv. acaciæ 5ss 2
Aquæ menth. pip. q. s. ad 5i 30

M. Sig.: One such dose three times a day after food.

In the later stages of gonorrhea the following combination is recommended:

℞ Copaibæ ..... m. xx 1 30
Balsami peruviani ..... m. iii 20
Tinct. benzoini ..... m. x 65
Mucil. acaciæ 5iss 6
Syr. aurantii 5ss 2
Infus. buchu q. s. ad 5i 30

M. Sig.: One such dose to be taken three times a day, diluted with an equal volume of water. Or:

℞ Copaibæ ..... m. xx 1 30
Mucil. acaciæ 5i 4
Tinct. belladonnæ ..... m. iii 20
Ext. buchu fld. 5ss 2
Decoct. tritici q. s. ad 5i 30

M. Sig.: To be taken at one dose in a wineglassful of water, and such a dose repeated three times a day.

The following combination is recommended by Beasley in cases of gleet:

℞ Olei copaibæ ..... m. v 30
Salol ..... gr. v 30

M. Ft. capsula No. i. Sig.: One such capsule three times a day. Or:

℞ Olei copaibæ ..... m. v 30
Methylene blue ..... gr. iii 20

M. Ft. capsula No. i. Sig.: One such capsule twice daily.

As a disinfectant and expectorant in bronchitis the following is of value:

℞ Olei copaibæ
Olei cubebæ
Olei santali, āā ..... m. iii 20
Mucil. acaciæ
Syr. tolutani, āā 5ss 2
Decoct. hordei decort. (1:15) q. s. ad 5i 30

M. Sig.: To be taken at one dose and repeated three times a day in similar doses.

Itching of the Skin.

In the treatment of itching of the skin, Biddle, in *Journal of the Mich. State Med. Society*, recommends lukewarm and moderately hot baths, very hot applications and alternate applications of heat and cold. In some cases he recommends acid baths, while in others alkaline baths are preferable. For an acid bath the following combinations are recommended:

℞ Acidi nitrici fortior 5ss 2
Acidi hydrochlor. fortior 5i 30
Aquæ q. s. ad for bath.

Or for an alkaline bath the following:

℞ Potass. carb.
Sodii carb., āā 5iii 90
Sodii biboratis 5ii 60
Pulv. amyli 5viii 240
Aquæ q. s.

Sig.: For a bath.

The most commonly used and the most successful antipruritics are phenol, camphor and menthol, owing to their stimulating and to their local anesthetic effect. Biddle never recommends carbolic acid in strong solutions. The following strength, according to his experience, is preferable:

℞ Acidi carbolici ..... m. xx-xl 1 30-2 60
Aquæ q. s. ad 5iv 120

M. Ft. lotio. Sig.: Apply locally.

Or the following combination:

℞ Acidi carbolici 5iii 12
Glycerini 5i 30
Aquæ ..... Oi 500

M. Ft. lotio. Sig.: Apply locally.

Menthol is recommended, combined as follows:

℞ Menthol ..... gr. x-l 65-3.30
Olei olivæ 5i 30

M. Sig.: To be applied locally.

Astringents may be indicated and in such cases he recommends applications containing alum in weak solution, citric acid or the subacetate of lead in the following combination:

℞ Plumbi subacetatis 5ii 8
Aquæ ..... Oi 500

M. Fiat lotio. Sig.: Apply locally. Or:

℞ Acidi hydrocyanici, dil. 5ss 2
Aquæ ..... Oi 500

M. Fiat lotio. Sig.: Apply locally.

In the class of disinfectants Biddle recommends some preparation containing tar. For its anesthetic effect locally, cocain solutions are recommended, especially in cases of pruritus vulvæ, using great care in its use in order not to establish the habit. For this same purpose resorcin may be prescribed in solution or ichthyol or a silver nitrate solution, the latter applied locally with a brush.

Cholera Infantum.

In considering the treatment of cholera infantum, Cotton, in his text-book of "Diseases of Children," states that the sudden onset and rapid progress of the disease leaves but little time in which to employ remedies, which are frequently successful in gastrointestinal intoxications of a milder type. The early indications for treatment are to counteract the profound depression and to overcome the tendency to blood concentration by increasing the volume of fluids in the body. Food is not indicated in the first forty-eight hours, as digestion and assimilation are impossible in such a disturbed state of the circulation. Brandy is recommended from the beginning or small doses of iced champagne. Digitalin and caffein may be resorted to, given hypodermically, to sustain the heart's action.

In the algid state the empty superficial vessels and a failing pulse may demand nitroglycerin in doses ranging from gr. 1/200 to gr. 1/100 (.0003-.00065); morphin, gr. 1/50 to 1/100 (.0013-.0006), with atropin, gr. 1/500 to 1/1,000 (.00013-.00006), for a child 1 year of age, given hypodermically, is regarded by Cotton as a valuable agent. This dose may be repeated every hour or two for the relief of vomiting and purging and to sustain the heart's action.

When stupor comes on, opium is contraindicated. He mentions the probable value of suprarenal extract in this disease accompanied by such high mortality owing to the similarity of symptoms between chloroform intoxications and those pro-

duced by functional arrests of the suprarenal gland. Next to the need of stimulation is the demand of the system for water. Ice water is recommended given in small quantities by the mouth. Enemas of sterilized water containing sodium bicarbonate and sodium chlorid, each a dram (4.00) to the quart of water, are advised.

Hypodermoclysis of normal saline solutions, from four to six drams (15. to 24), should be given every one or two hours, depending on the frequency of the discharges. Hot baths and hot packs are indicated in the algid state and to aid superficial circulation.

Method of Disguising the Taste of Castor Oil.

Dr. Charles J. McGee, Leavenworth, Kan., writes that while no doubt many of the published formulas for disguising the taste of castor oil answer the purpose, the following method does not require the aid of the pharmacist and yet completely masks the disagreeable taste of the oil:

"Place a tablespoonful of castor oil in an ordinary glass, and to this add the juice of a medium-sized lemon and stir. Then add a little ordinary baking soda (a lump about the size of a large bean), stirring quickly, and drink while effervescent."

Dr. McGee states that he uses this method exclusively and has never had a complaint from a patient when a second dose was ordered.

Medicolegal

Injury as Cause of Tuberculosis.

The First Appellate Division of the Supreme Court of New York says, in the case of Sallie vs. New York City Railway Co., where a man was thrown to the ground while he was in the act of alighting from a car, that the evidence tended to show that before he was thrown from the car he was in perfect health; that when he was thrown from the car one of his ribs was fractured and he was injured in other respects; that he was immediately taken to his home and put in bed; that he gradually grew worse from day to day, and at the end of the second week pleurisy developed in the region of the fractured rib; that the pleurisy progressed rapidly, and shortly thereafter a tubercular condition of the left lung was discovered, which also progressed so rapidly that the injured person died about nine weeks after he was injured. These facts being established, the jury might have found that the injury was the direct cause of the tuberculosis, and this whether the tuberculosis were brought about by the pleurisy or from the weakened condition of the man, which permitted the tubercular germs to develop. If it be conceded, as contended by the defendant, that tuberculosis is a germ disease, and that the germs must enter by the mouth, this would not deprive the plaintiff (the administrator of the man's estate) of a recovery if the germs would not have developed, except for the weakened condition of the man caused by the injury received through the wrongful act of the defendant. There are authorities to the effect that if there is evidence from which the jury may find an unbroken connection and continuous operation between a disease, no matter what, and the injury, then it is for them to say whether the wrongful act which caused the injury is the proximate cause of the disease. If they find it is, then the plaintiff is entitled to recover such damages as may have been sustained. There must, however, be satisfactory evidence justifying such a finding. The matter can not be left to conjecture or speculation. There must be an unbroken connection between the injury and the disease. The evidence here, as already said, would have justified a finding that there was such unbroken connection between the disease which caused the death of the man and the injury to his rib, and therefore there was error in dismissing the complaint.

Statements on "Patent Medicine" Labels and Wrappers.

The United States Circuit Court in Rhode Island says, in Moxie Nerve Food Co. of New England vs. Holland, that there is force in the argument that extravagant claims, statements of marvelous recoveries and secrecy and mystery as to ingredients are such badges of fraud as to warrant a court of equity in refusing to extend a presumption of good faith to a complainant making such claims and in refusing relief. If, however, in respect to ordinary sales, courts of law base the rule of *caveat emptor* (let the purchaser take care) on the commonsense view that in disposing of their wares men will not adhere to the truth, and that a vendor's opinion concerning the merit of goods is, as a practical matter, presumptively unreliable, is it not somewhat inconsistent for a court of equity to act on a presumption that a "patent-medicine" vendor tells the truth on his labels and wrappers? The statements on the label or wrapper of a "patent-medicine" bottle do not prove themselves, and are not competent to prove, the efficacy of its contents. Notoriety, general use and commercial value can more readily be attributed to enormous sums expended in advertising than to actual merit. Would it not be reasonable for a court of equity to hold that a complainant seeking to protect his proprietary rights as the owner of a "patent medicine" should produce legal evidence that it is in fact what it purports to be? Assuming that the efficiency of medicine is a matter of opinion, the only evidence legally admissible to support claims of this character is the testimony of experts whose qualifications to testify are made to appear to the satisfaction of the court. In this case the complainant introduced affidavits of laymen, who said that they had had various diseases which had been cured. It would seem that this evidence is legally inadmissible on the issue of the curative efficiency of a medicine. The only competent legal evidence to prove this is the testimony of experts giving their opinion. Again, the court says that it is a somewhat novel and serious question of law whether the representations as to curative power can be regarded, in view of certain decisions, as a representation whose truth may be inquired into. But this court would be very loath to adopt a rule that in determining whether a complainant comes into court with clean hands a technical line should be drawn between representations of pure fact, such as the ingredients of a medicine, and representations as to the curative power of the contents of a bottle, and classify the latter as representations of opinion, the falsity of which is practically incapable of proof.

Contract by Employe to Allow Examination Invalid.

The Court of Civil Appeals of Texas says, in Galveston, Harrisburg & San Antonio Railway Co. vs. Hughes, an action for personal injuries brought by the latter party, that the defendant company, among other things, pleaded in bar of the action an agreement signed by the plaintiff, in consideration of his employment, to the effect that, if he should sustain any personal injury in the service of the defendant, he would allow its surgeon and any medical examiner he might select to examine his person as often as the company might deem necessary in respect to the alleged injury, waiving all objection to such surgeon or medical examiner testifying whenever called on by the company, and agreeing that his refusal to allow such examination to be made or testimony to be given, should be a bar to the institution and prosecution of any action on account of such injuries. But the Texas statute provides: "No contract made between the employer and employé based on the contingency of death or injury of the employé and limiting the liability of the employer under this chapter, or fixing damages to be recovered, shall be valid or binding." This statute has reference to any contract made in advance of an injury to the employé, based on the happening of such injury, which seeks to limit or restrict the employer's liability. The contract in question was based in part on the event of injury to the plaintiff, and restricted the defendant's liability by doing away with it altogether. Therefore the plea in bar alleging a refusal to allow an examination constituted no bar to the further prosecution of this action.

Statements as to How Accident Occurred Not Privileged.

The Third Appellate Division of the Supreme Court of New York says that, in the case of Benjamin vs. Village of Tupper Lake, brought to recover damages for an injury alleged to have been sustained on a defective sidewalk, a physician who had treated the plaintiff for the injury was called by the defendant and testified that he had a conversation with her as to the

manner in which this accident occurred. He was then asked: "What did she tell you as to that?" Besides, he stated that this talk was while I was making an examination of her in order to prescribe for her and as a part of my examination." The court holds that it was error to sustain an objection to the question. He says that the witness nowhere stated that it was necessary for him to know how the accident happened in order to enable him to act for the plaintiff in a professional capacity, but it was apparent that it was not necessary for him to know how the accident happened in order to enable him so to act. It was sufficient for that purpose that he knew or was informed of the character of the injuries received and not as to how they were received. If the plaintiff in such talk made admissions to the physician as to the manner in which the accident happened, it not appearing that the information so acquired was necessary to enable him to act in that capacity, such admissions were not protected by section 834 of the New York Code of Civil Procedure forbidding a physician to disclose information acquired while attending a patient in a professional capacity and necessary to enable him to act in such capacity.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below

Medical Record, New York.

May 19.

1 The Russian Red Cross. J. Van R. Hoff, U. S. A.
2 *Treatment of Chronic Diseases of the Heart by the Nauheim Methods; Its Indications and Contraindications. F. P. Kinnicutt, New York.
3 *Treatment of Tabes Dorsalis. F. Von Raitz, New York.
4 *Sanitary Supervision of Pulmonary Tuberculosis and Other Communicable Diseases by the Department of Health of the City of New York. J. S. Billings, Jr., New York.
5 Case of Complete Inversion of the Uterus. J. S. Emans, New York.

2. **Treatment of Chronic Diseases of Heart by Nauheim Methods.** In Kinnicutt's experience the most brilliant successes are obtained from this method of treatment in cases of enfeebled, relaxed, dilated hearts, with or without a murmur of muscular or relative mitral incompetence following prolonged and exhausting diseases, the various acute infectious diseases, and also associated with anemia of varied causation.

3. **Treatment of Tabes Dorsalis.**—Von Raitz emphasizes the necessity of employing such means in tabes dorsalis as will improve the nutrition, not only of the system as a whole, but of the affected nerve tissues, and which will change the pathologic conditions to the normal state. He advocates the breathing of pure air, exposure to sunshine, congenial surroundings, plenty of sleep, and occupation of mind and body. The patient should eat what agrees with him best. He also advises salt brine friction of the body in a warm bath twice a week. Clothing should be warm but not overheating. Electricity will increase the nutrition of the cord and brain and the muscular and peripheral nerves. Von Raitz does not believe in the rest treatment, but requires his patients to walk as much as possible.

4. **Sanitary Supervision of Communicable Diseases.** Billings gives the general procedure which the department of health follows in its sanitary supervision of the diseases mentioned. All cases of pulmonary tuberculosis, typhoid fever and cerebrospinal meningitis occurring in the city of New York are registered at the department of health, and all necessary steps are taken to render that registration as accurate and complete as possible. Every person (or the family of such persons) suffering from these diseases is furnished instruction as to the measures to be taken to prevent its extension. Bedding, and so on, used by persons suffering from these diseases, is disinfected. All premises which have been occupied by persons suffering from pulmonary tuberculosis or cerebrospinal meningitis, on death, removal, or recovery of the patient, are disinfected with formaldehyd, or renovation is ordered. Charitable assistance or hospital care is provided so far as is possible for all persons wishing or requiring it. The general public is educated as to the nature of the above diseases, the precautions to be taken against their spread, the advisability of institution and sanatorium treatment and so on. Patients suffering from pulmonary tuberculosis, with no attending physician, are visited at their homes by nurses and given necessary assistance and advice, are provided with extra diet (milk and eggs) when necessary, and are given free medical treatment in the department clinics. Information as to the probable source of infection (water, milk, oysters) is obtained in every case of typhoid fever, and suitable action is taken. In cases of cerebrospinal meningitis quarantine of patients at their homes is enforced and other children in the family are excluded from school. Malarial fever, abortion, puerperal fever, septicemia, erysipelas and pneumonia are reportable diseases, but at present the patients are not visited.

New York Medical Journal.

May 19.

6 *Rectal Anastomosis of the Ureters. C. Beck, New York.
7 *Surgical Treatment of Floating Kidney, with Description of Operation. F. W. McRae, Atlanta, Ga.
8 *Myomectomy. C. P. Noble, Philadelphia.
9 Distribution of the Eosinophilic Leucocytes in a Fatal Case of Hodgkin's Disease with General Eosinophilia. W. T. Longcope, Philadelphia.
10 Essential Nature of Dementia Præcox. W. K. Walker, Dixmont, Pa.
11 Surgical Treatment of Chronic Dyspepsia. G. E. Brewer, New York.
12 Puerperal Infection. H. J. Boldt, New York.
13 Delayed Value of Surgery in Epilepsy in Certain Cases. W. P. Spratling, Sonyea, N. Y.

6. **Rectal Anastomosis of Ureters.** Regarding unilateral implantation of the ureter, as it becomes indicated in defects caused by destructive processes, like tuberculosis or carcinoma of the bladder, or by tumors, vesicovaginal fistula with destruction of ureter, ureteral fistula or trauma, Beck finds that the stenosis is best avoided by splitting the lower end of the ureter so that two flaps are formed which, like two wings of a folding door, are placed into the slit made in the bowel. The ends are made triangular so that a rhomboid figure is attained when the flaps are fastened to the bowel. The large surfaces thus created favor agglutination.

7. **Surgical Treatment of Floating Kidney.**—McRae makes the initial incision, beginning just back of the anterior border of the erector spinæ, immediately below the twelfth rib, extending obliquely to about one inch behind the anterior superior iliac spine, down to the deep fascia. A short cut, one and one-half to two inches long, is next made, in the same direction, beginning just over the anterior border of the erector spinæ, through the fibers of the latissimus dorsi. The deep lumbar and transversalis fasciæ are cut directly downwards to the iliac crest. The latissimus dorsi, the erector spinæ and the quadratus lumborum are pulled backward, the abdominal obliques and transversales forward. To this point the operation is similar to the muscle splitting operation of Mayo Robson. This freely exposes the fat and the iliohypogastric and ilioinguinal nerves. These nerves are pushed aside and the kidney delivered between them, by forceps traction on the fatty capsules, without handling or trauma. A flap of the fibrous capsule about one and one-half inches square is next raised from the posterior surface of the kidney, beginning just in front of the hilum, separated from the cortex by careful dissection, to the convex border of the kidney. The capsule is incised along the convex border of either pole of the kidney, reflected toward the hilum, thus completely exposing the posterior surface of the organ.

Two mattress sutures are next inserted, somewhat similar to the method of Bradle, through capsule just in front of the hilum, including the reflected flaps. These sutures with the suspensory ligament made from the reflected posterior fibrous capsule, hold the kidney high up, well back in the hollow of the loin, nearer in its normal position than is done in any other operation. The fatty capsule pushed in front acts as a protecting cushion. The raw posterior surface adheres firmly. The kidney is next replaced, the mattress catgut sutures passed deeply through the posterior muscles in front of the ilioinguinal nerve and tied over muscles, but underneath fat and skin. A heavy catgut suture is next passed through either angle of the 12th suspensory ligament so as to approximate

the separated muscles and cut fasciæ. A cigarette drain is placed between these sutures to the raw surface of the kidney. The muscles and fasciæ are accurately closed with catgut, above and below these sutures. The skin and superficial fat are accurately approximated by interrupted silkworm gut sutures, with a needle on each end, passed from within out, each suture taking a good bite of deep fascia and muscles. A few catgut sutures are put between the silkworm gut sutures where necessary to approximate the skin.

The wound is dressed with gauze wrung out of hot salt solution and absorbent cotton, held smoothly in place by broad adhesive strips, with an abdominal binder over all. The dressing is changed daily until the drain is removed, usually in twenty-four to forty-eight hours, according to amount and character of drainage. After the drain is removed a dry sterile dressing is put on and allowed to remain until time to remove the sutures, generally on the seventh or ninth day. The patient is kept on the back or operated side for two weeks, and in bed for three to four weeks. A well-fitted abdominal supporter, properly padded, is recommended to be worn for from three to six months. It is a valuable adjunct to the operation. The supporter tends to correct any coexisting enteroptosis, inspires confidence and makes it difficult to wear a tight corset.

8. **Myomectomy.**—Noble claims that myomectomy preserves the possibility of conception, but the probability of it is slight, and in most cases the advantage to the patient lies rather in the fact that the woman has the hope of conception, as contrasted with the certainty of having lost it. From the practical standpoint, the conclusion is inevitable that, so far as the question of pregnancy is concerned, it is of little moment, except in the group of women who ardently desire to bear children, and that in considering the question of hysterectomy versus myomectomy in a woman who does not so express herself, the question of pregnancy is of small practical importance. In his own practice there have been 66 myomectomies out of a total of 337 operations for fibroid tumors.

Noble says that he is not inclined to broaden the field of myomectomy beyond this proportion. If he were to make any change in his practice it would be in the direction of increasing the proportion of vaginal myomectomies in comparatively young women in whom it is still desirable for pregnancy to occur. Vaginal hysterotomy, combined with anterior colpotomy, will enable the surgeon to remove submucous and partly intramural fibroids with safety in many cases. Otherwise he shall continue in the future as he has in the past, to limit the field of myomectomy to the removal of fibroid polyps and submucous fibroids by the vaginal route, and subperitoneal fibroids, when single, or at all events limited to two or three tumors, occurring in childless women less than 40 years of age, by the abdominal route.

Boston Medical and Surgical Journal.

May 17.

14 *Treatment of Chronic Diseases of the Heart by the Nauheim Methods. F. P. Kinnicutt, New York.
15 *Treatment of Organic Heart Disease by the Pneumatic Cabinet. C. E. Quimby, New York.
16 *Depletion in Heart Disease. F. C. Shattuck, Boston.
17 Use and Abuse of Digitalis. F. Pfaff, Boston.
18 Biographic Clinic on Tchaikovsky. (Concluded). G. M. Gould, Philadelphia.

14. See abstract No. 2.

15. **Pneumatic Cabinet in Organic Heart Disease.**— After nearly 30 years' observation and reasonably careful study of the results obtained by other methods in the hands of acknowledged authorities, and 14 years' personal experience in the use of the cabinet, Quimby is firmly convinced that it affords more immediate, extensive and lasting relief than any other known measure, although it does not cure incurable organic heart lesions. He says that its use is based on such strictly scientific principles, and the results are so plainly determined by established physical laws, as to justify its description as the nearest approach to the ideal method of treatment in organic cardiac disease.

16. **Depletion in Heart Disease.**—Shattuck accomplishes this either by the abstraction of blood, by means of venesection or leeching or wet cups, by purging and by sweating. The first is the more rapid. If leeches are used the hepatic region is a convenient place, and it is usually well to increase the bleeding by a poultice over the bites. Outside of a hospital he considers purging preferable if there is time. An ounce or two of Epsom salts, in saturated solution, in black coffee, is often serviceable if the stomach will stand it. In some cases compound jalap powder, elaterium or croton oil is preferable. Sweating is best carried out in a cabinet, the patient sitting up. The serous cavities can be tapped. If edema of the legs be hard and brawny, he finds Southey's tubes, modified, helpful. A thoroughly sterilized aspirator needle or trocar of fair caliber can be thrust an inch or more upward into the subcutaneous tissue of the outer aspect of each lower leg or of the thigh, the skin having been previously carefully cleaned. The needle is then packed around with sterile cotton or gauze in order to keep the skin as dry as possible, and is connected by rubber tubes with a bottle hung under the bed. Shattuck regards the old practice of scarification as dangerous. He does not use calomel either as a purgative or diuretic unless he is certain that the kidneys are suffering from nothing more than passive-congestion.

St. Louis Medical Review.

May 12.

19 Treatment of Diseases of the Accessory Sinuses. M. A. Goldstein, St. Louis.
20 Pharmacology of Ions. (Concluded). O. H. Brown, St. Louis.

May 19.

21 Injuries of the Cranium. (To be concluded). W. L. Estes, South Bethlehem, Pa.

Lancet-Clinic, Cincinnati.

May 19.

22 Considerations of Para- and Peri-Uterine Inflammations. C. D. Palmer, Cincinnati.
23 Appendicitis; Its History, Its Differential Diagnosis, Its Pathology and Etiology, Its Medical and Surgical Treatment. R. E. Haughton, Richmond, Ind.
24 *Shall the Profession or the Laity Be Responsible for the Death-rate in Appendicitis? J. C. O'Day, Oil City, Pa.

24. See abstract in THE JOURNAL, Nov. 4, 1905, page 1435.

Annals of Surgery, Philadelphia.

May.

25 Resection of Portion of the Chest Wall and of the Diaphragm, for Primary Sarcoma of the Pleura. S. Deruginsky, Moscow, Russia.
26 *Observations on the Diagnosis and Treatment of Typhoid Perforation. G. Woolsey, New York.
27 *Combined Operation for the Removal of the Appendix and the Cure of Right Inguinal Hernia. F. Torek, New York.
28 *Appendicular Femoral Hernia. A. C. Wood, Philadelphia.
29 Inguino-Properitoneal Hernia; Inguino-Interstitial Hernia. A. E. Halstead, Chicago.
30 Etiology of Certain Congenital Tumors of the Groin. R. H. Russell, Melbourne, Australia.
31 Determination of the Functional Capacity of the Kidneys. A. A. Berg, New York.
32 Ureteral Calculus. J. B. Deaver, Philadelphia.
33 Transperitoneal Examination of the Ureter in Cases of Suspected Ureteral Calculus, and the Combined Intraperitoneal and Extraperitoneal Ureterolithotomy. J. H. Gibbon, Philadelphia.
34 X-Ray Findings in a Case of Gritti-Stokes Amputation. E. R. Corson, Savannah, Ga.
35 Epiphyseal Separation of the Great Trochanter. C. O. Thienhaus, Milwaukee.

26. **Typhoid Perforation.**—The average period of the disease at which perforation occurred in Woolsey's group of 17 hospital cases was the twenty-seventh day of the disease. In 4 of the 17 cases there had been previous hemorrhage, in at least 1 case distention had been a marked feature, but in the majority of cases the previous course had been that of a typical typhoid and not unusually severe. There was only one symptom that was nearly uniformly present in all the cases, and that was abdominal pain, usually coming on suddenly and generally severe. It was present in 15 out of 17 cases, and slight pain was present in another case. It was usually complained of in the lower half of the abdomen and most often on the right side. In the one remaining case there was no pain, and here an apparently walled-off cavity containing fecal matter and lymph was found on operation. In the case in which the pain was slight there was no perforation in the ileum, but sloughing areas in the sigmoid with perforation. Tenderness was the next most common symptom, being noted in 7 cases in the early stages and in 5 others subsequently. Rigidity was only mentioned in 4 cases at the outset, but developed in 9 others before operation.

Vomiting was present in 4 cases as one of the initial symptoms, often in consequence of the severe abdominal pain, but in one case without any pain or other symptom but weakness. Vomiting was present in 7 other cases. An initial fall of temperature was not noted in any case. Among the late symptoms more or less distention or tympanites was noted in 13 cases, dullness in the flanks in 4, diminution or absence of abdominal breathing in 5 and of the liver dullness in 5. The leucocyte count was high (over 12,000) in 3 cases and somewhat high for typhoid in 4 (7,700, 7,900, 8,000, 9,200), but in one of the latter it had been 12,000 six days before. In others it remained low. Rise of temperature, pulse and respiration was the rule; in some cases the temperature became high. Woolsey emphasizes that (1) the value of severe pain of sudden onset in the lower half of the abdomen as an early sign of perforation and its increased value as an indication for operation when associated with localized tenderness and rigidity; (2) the importance of exploratory operations in case of doubt in view of the good results which follow if no perforation is found and of the earlier period at which the operation is done if perforation is present.

27. **Combined Operation of Appendectomy and Herniotomy.**—Torek describes the operation as follows: An imaginary line is drawn from the anterior superior spine of the ileum to the umbilicus. A point on this line at a distance equal to one-quarter of its length from the iliac spine marks the beginning of the incision, which is carried down from here to the external inguinal ring. The aponeurosis of the external oblique is exposed throughout the length of the incision. This fascia is then incised in the direction of its fibers, as is customary in the gridiron operation for appendicitis, exposing the internal oblique muscle; but the incision is prolonged downward so as to terminate at the apex of the external inguinal ring. The aponeurosis of the external oblique is pared off from the underlying parts in the usual manner, on the outer side exposing Poupart's ligament. Then the hernia operation is proceeded with up to the point where the sac is cut off. Here the hernia operation is intermitted and attention turned to the appendix. The fibers of the internal oblique and transversalis are separated bluntly in the usual manner, the peritoneum is opened, the appendix removed; then the peritoneum, transversalis fascia and muscles are closed again. The appendicitis operation is completed, except that the aponeurosis of the external oblique is still left open. Next the internal oblique and transversalis are sutured to Poupart's ligament, according to any of the approved methods, and finally the aponeurosis of the external oblique is sutured in the entire extent of its incision, so as to close both the appendicitis and the hernia operation. Lastly the skin is sutured. Torek claims that the combined operation has decided advantages over the performance of the two operations at separate sittings. It saves the patient one operation and it takes only very little longer than the hernia operation alone would require. Furthermore, there is greater firmness of the abdominal wall, as it is certainly better to have one incision in the aponeurosis than two.

28. **Appendicular Femoral Hernia.**—A study of 100 cases has shown Wood that appendicular hernia is more frequent than has been supposed. When occurring in conjunction with the cecum no special considerations may be involved, but when occupying the sac alone new problems of treatment are introduced. The appendix is more apt to be found in femoral than in inguinal hernias. It has occasionally been observed on the left side. A herniated appendix is apt to become adherent and inflamed, and as a matter of clinical experience this danger appears to be greater when it occupies the sac alone than when it is accompanied by other portions of the intestine. The diagnosis of appendicular hernia has not been made, as a rule, before operation. In all cases operated on it is desirable to remove the appendix unless the patient's general condition or safety contraindicates this course.

Journal Missouri State Medical Association, St. Louis.

May

36 Puberty: Its Benefits and Dangers. E. H. Miller, Liberty, Mo.
37 *Science of Medicine a Looted Profession. T. F. Lockwood, Butler, Mo.
38 *Ureter Catheterism as a Diagnostic and Therapeutic Measure. E. G. Mark, Kansas City.
39 Diagnosis of Conditions Calling for Nephrotomy and Nephrectomy. J. Block, Kansas City.
40 Technic of Amputation of the Breast. H. C. Crowell, Kansas City.
41 Diagnosis and Differential Diagnosis of Appendicitis. G. A. Beedle, Kansas City.
42 Remarks on Hookworm Disease (Uncinariasis). G. Homan, St. Louis.
43 Graft in Medicine. J. C. Morfit, St. Louis.
44 *Case of Subhyaloid Hemorrhage. J. M. Ball, St. Louis.
45 Address of the President of the Southeast Missouri Medical Society. T. W. Cotton, Van Buren, Mo.
46 Dr. Gregory as a Physician and Surgeon. D. C. Gore, St. Louis.
47 Dr. Gregory in His Civic Capacity. A. M. Dockery, St. Louis.
48 Dr. Gregory as a St. Louisian. W. G. Moore, St. Louis.
49 Dr. Gregory as a Medical Teacher. F. J. Lutz, St. Louis.

37. **Medicine a Looted Profession.**—To restrain the nefarious custom of manufacturing chemists of flooding the community with their myriads of remedies, Lockwood suggests that the medical profession request manufacturers to remove from all containers of manufactured products everything except the title label, asking them to refrain from having the name of the drug or of the firm blown in the bottle, not to use any peculiar or conspicuously shaped container, nothing but a plain packing bottle with a common label, leaving off formula, medical properties, usages and dose. They should also be asked not to publish such information as is now found in the literature distributed broadcast for the public to read. If manufacturers object to granting this request, Lockwood suggests that the proper plan to pursue would be to petition the legislature to take the matter in hand and force a final issue in behalf of human welfare and professional righteousness.

38. **Ureter Catheterism.**—Mark believes that ureter catheterism is an essential in the differential diagnosis of disease of the upper urinary tract. It is a *sine qua non* in the determination of the relative functionating activity of the two kidneys preliminary to renal operations. In the treatment of certain pathologic conditions of the kidney pelvis and ureter, ureter catheterism is invaluable, and in skilled hands and under proper precautions the use of the ureteral catheter is devoid of danger to the patient.

44. **Subhyaloid Hemorrhage.**—In the case reported by Ball the right eye presented, in the lower temporal quadrant of the fundus, a large hemorrhage, shaped much like the letter D turned 15 degrees to the right. Its upper external extremity was separated from the optic nerve head by a space of one papilla diameter. It was bounded below by a red crescent, which was separated from the main body of the clot by a grayish white line. Scattered along the side of the vessels above the clot were a number of small white round areas of retinal degeneration. Throughout the area of hemorrhage the retinal vessels were invisible.

Medicine, Detroit, Mich.

May.

50 *New Apparatus for the Accurate Determination of Urea in Urine. G. H. Meeker, Philadelphia.
51 Some Intricacies in the Pathology and Diagnosis of Appendicitis. E. LaPlace, Philadelphia.
52 Principles of Treatment of Hypertrophy of the Prostate. C. G. Cumston, Boston.
53 Cystitis of Gonorrheal Origin. A. W. Myers, Milwaukee.
54 Relations of the Physician to Modern Surgery. J. B. Deaver, Philadelphia.

50. **Determination of Urea in Urine.**—Meeker claims for the method described, great accuracy and simplicity of performance. However, it requires an analytic balance and a special glass apparatus, which is described in detail, as is also the method itself.

Archives of Pediatrics, New York.

May.

55 Multiple Abdominal Tumors, Due to Cystic Kidneys, Double Hydronephrosis and Great Dilatation of Ureters, Etc., in a Child Dying at Fourteen Months. L. E. Holt, New York.
56 Examinations of the Urine of Infants. H. D. Chapin, New York.
57 *Lipomatosis Universalis in an Infant Eleven Weeks Old. J. Sobel, New York.
58 *Hypertrophic Pyloric Stenosis in an Infant Ten Weeks Old with Surgical Report of Gastroenterostomy. L. Fischer and A. Stormdorf, New York.
59 Acute Circumscribed Edema. A. D. Smith and F. S. Meara, New York.

57. **Lipomatosis Universalis in Eleven Weeks' Infant.**—Nothing unusual was noted in the case reported by Sobel until the

fifth week of life, when the mother noted a fullness of the cheeks. After this fat began to accumulate in the nape of the neck, the chest, suprapubic region and other parts. The baby became less sensitive to its surroundings and the mother thought it blind. The child nursed and slept well and there was no cough or convulsions. The head was held direct and did not fall backward. There were no evidences of craniotabes. The body length was 19½ inches, the chest measured 15½ inches and the abdomen at the umbilicus 16 inches; circumference of thighs at widest part, 9 inches; weight, 14 pounds. There were no evidences of rickets. In fact, the infant appeared to be normal except for the immense deposition of fat. Death occurred one week later, evidently from pulmonary edema.

58. **Hypertrophic Pyloric Stenosis.**—The case reported by Fischer and Sturmdorf is considered an illustration of a typical hypertrophic stenosis of the pylorus, in which the active symptoms began when the baby was 6 weeks old. All medicinal treatment proving useless, operation was advised. The stomach and intestines were irrigated thoroughly. Through an inch and a half incision, carried slightly to the right of the mid-epigastric line, the hypertrophied pylorus was drawn forward just sufficient to bring the duodenum and the pyloric end of the greater curvature of the stomach into easy apposition, somewhat in the manner of the first step in the Finney operation. The contiguous parts were anastomosed rapidly by a double-tier suture when the abdomen was closed. The operation lasted 22 minutes. The infant lived 30 hours, when it was suddenly seized with clonic and tonic convulsions and died.

American Journal of the Medical Sciences, Philadelphia.

May.

60 *Clinical Significance of the Urinary Nitrogen. J. Ewing and C. G. L. Wolf, New York.
61 Diagnostic Significance of Persistent High Arterial Pressure. T. C. Janeway, New York.
62 Preliminary Study of Visceral Arteriosclerosis. H. Brooks, New York.
63 Studies in Tropical Medicine. F. C. Wellman, Benguella, Portuguese, West Africa.
64 *Case of Fetal Ichthyosis. B. W. Moore and L. M. Warfield, St. Louis.
65 Anatomy of the Parathyroid Glands. J. Rogers and J. S. Ferguson, New York.
66 Four Cases of Double Hemiplegia (Syphilitic Encephalitis, Cerebrospinal Syphilis), with Autopsy. J. H. W. Rhein, Philadelphia.
67 *Autosuggestion in Hysteria Apropos of a Case, with Remarks on So-called Hysterical Insanities. A. Gordon, Philadelphia.
68 *Observations on the Form of the Red Blood Corpuscle of Man. H. E. Radasch, Philadelphia.
69 Developmental Alexia (Congenital Word Blindness). E. Jackson, Denver.
70 *Clinical Observations on Ulcer of the Stomach. J. H. Schroeder, Cincinnati.
71 *Acute Appendicitis the Result of a Foreign Body. F. D. Patterson, Philadelphia.
72 Surgical Treatment of Hepatic Ascites. A. O'Malley, Philadelphia.
73 Case of Paratyphoid Fever. J. M. Sawn, Philadelphia.

60. **Clinical Significance of Urinary Nitrogen.**—As the result of careful observation Ewing and Wolf believe that changes in the partition of the urinary nitrogen may be taken as an index of metabolic disturbances escaping other methods of detection, but they are by no means certain how far the present knowledge of this subject will render this type of urinary analysis practically available to the clinician.

64. **Fetal Ichthyosis.**—This article appeared in the *Journal* of the Missouri State Medical Association, March, 1906, and was abstracted in THE JOURNAL, April 14, 1906, page 1130.

67. **Autosuggestion in Hysteria.**—In the case reported by Gordon there were noted numerous psychic phenomena of autosuggestion, which developed under the influence mostly of reading, and simulated to a remarkable degree some forms of psychoses of which the patient was totally unaware and which developed outside of personal consciousness. There was also an association of hysteria and epilepsy.

68. **Form of Red-Blood Corpuscle.**—In examining series of slides representing tissues derived from autopsies on fetuses, Radasch noted the constant presence and great numbers of red cells that did not possess the classic biconcave shape. A review of the literature shows that the earliest accounts of the red cells ascribe to them a bell shape. The tissues studied were derived from about twelve autopsies performed on fetuses from five months to term, and on one infant 11 days old. Radasch concludes that the majority, if not all, of the circulating cells are bell-shaped and not biconcave. Their presence in the adult body, as well as that of the fetus, is shown by a study of the placenta. Their presence in the fetus and infant seems undoubted, as shown by their abundance and uniformity in shape and size in the fixed tissues. On contact with the air the bell shape is changed to the biconcave, the result of collapse. This is shown by the fixation of blood that has not been exposed to the air, on the one hand, and blood that has been so exposed, on the other.

70. **Ulcer of Stomach.**—Schroeder claims that surgical treatment of gastric ulcer is indicated only when there is organic obstruction, either cicatricial or by adhesions, or when there are frequently recurring hemorrhages. The operations performed may be gastroenterostomy, excision of the ulcer or plastic operations on the pylorus. Schroeder reports a case in which there was marked gastrosuccorrhea with hyperchlorhydria, pylorospasm and gastrectasia. Under carefully prescribed medical treatment the patient made a complete recovery.

71. **Appendicitis Result of Foreign Body.**—Patterson presents a very thorough review of the literature on this subject and reports one case in which the appendix contained a small piece of eggshell.

Ophthalmology, Milwaukee, Wis.

April.

74 Relation of Convergence to Accommodation. H. F. Hansell, Philadelphia.
75 *Atypical Exophthalmic Goiter with Endothelioma of the Pituitary and Toyroid Bodies. Death from General Sepsis. Autopsy. H. V. Würdemann and W. Becker, Milwaukee.
76 Case of Cystic Degeneration of the Pituitary Body, with Pressure on the Optic Chiasm. W. H. Peck, Chicago.
77 *Traumatic Irido-Cyclitis, with Peculiar Conjunctival Disease, Recovery Under Injections of Tuberculin. S. D. Risley, Philadelphia.
78 Second Case of Keratitis Disciformis; Case of Corneal Erosion. W. C. Posey, Philadelphia.
79 Case of Filamentous Keratitis. W. Zentmayer and H. G. Goldberg, Philadelphia.
80 *Dangers of Common Drugs as Seen by the Ophthalmologist. E. E. Blauuw, Buffalo, N. Y.

75. **Atypical Exophthalmic Goiter.**—The patient whose case is reported by Würdemann and Becker presented great exophthalmos, attended by a loss of vision and ulceration of the corneæ, purulent discharge from both nares. The thyroid was slightly enlarged. The heart-beat was rapid, but physical examination did not show any apparent lesion. Death resulted from meningitis. At the autopsy there was found an endothelial degeneration of the pituitary body. No evidences of acromegaly were found.

77. **Traumatic Iridocyclitis.**—In the case reported by Risley four injections of two minims each of tuberculin resulted in a complete relief of the trouble.

80. **Dangers of Common Drugs.**—Blauuw reports from the literature cases of poisoning with various well-known drugs used in eye work, such as common salt, iodoform, β-naphthol and naphthalin, and the effects on the eye of some common alteratives, vermifuges, antipyretics and antirheumatics.

Illinois Medical Journal, Springfield.

April.

81 Some Footprints of a Prehistoric Race. W. M. Roberts, Norris.
82 Gross Abnormalities of the Appendix Vermiformis. A. P. Heineck, Chicago.
83 Plea for the Open Treatment of Fractures. G. M. Pearis, Joliet.
84 Natural Temporary or Acquired and Artificial Immunity. H. D. Schiller, Chicago.

May.

85 Aphasia. H. M. Sedgwick, Peoria.
86 Neurasthenia. J. Grinker, Chicago.
87 Parametritis (Virchow) Versus Perimetritis—Behavior, Diagnosis and Treatment. A. B. Keyes, Chicago.
88 *Scrofula. H. G. Anthony, Chicago.

88. See abstract in THE JOURNAL, May 27, 1905, page 1704.

The American Journal of Urology, New York.

May.

89 Diagnosis and Treatment of Kidney Stone. A. D. Bevan and J. F. Smith, Chicago.

90 Gonorrheal Infection of the Urethral Follicles and Diverticula. A. Couderc, Paris.
91 *Epididymotomy for Blennorrhagic Epididymitis. L. Bazet, San Francisco.
92 Urethroscopy. E. G. Mark, Kansas City, Mo.
93 Effect of Uterine Retroversion of the Urinary Bladder. G. S. Whiteside, Portland.

91. *Id.*—April 28, 1906, page 1319.

Journal of the Michigan State Medical Society, Detroit.

May.

94 Milk Bacteria. C. E. Marshall, Lansing.
95 Intestinal Obstruction and Paralysis of the Bowels Following Laparotomy. F. J. W. Maguire, Detroit.
96 Value of Drugs Used to Assist Labor. J. E. Davis, Detroit.
97 Case of Sub-acute Pancreatitis, Cholelithiasis and Cholecystitis. C. F. Tenney, Ann Arbor.
98 Enforcement of the Medical Practice Law in Calhoun County. H. A. Powers, Battle Creek.

Louisville Monthly Journal of Medicine and Surgery.

May.

99 Ectopic Gestation. J. G. Sherrill, Louisville.
100 Not Which Anesthetic, But What Form of Anesthesia. A. Schachner, Louisville.
101 Symposium on Puerperal Eclampsia. E. Speidel, H. B. Ritter and P. F. Barbour, Louisville.

Cleveland Medical Journal.

May.

102 A Day in Salerno. C. J. Aldrich, Cleveland.
103 Foreign Bodies in the Cornea and Conjunctiva. A. R. Baker, Cleveland.

The Kansas City Medical Index-Lancet.

May.

104 Relation of Gonorrhea to Pelvic Disease. H. C. Crowell, Kansas City.
105 Epilepsy. H. C. Hays, Kansas City.
106 Gastric Ulcer. N. P. Wood, Independence, Mo.
107 Causes and Treatment of Uremia. E. L. Chambliss, Kansas City.
108 The Paquelin Cautery for Epithelioma. E. Lanphear, St. Louis.

American Practitioner and News, Louisville, Ky.

May.

109 Puerperal Infection. A. S. Priddy.
110 Elements of Prognosis in Diseases of the Aortic and Mitral Valves. J. A. Flexner, Louisville.
111 The Man with a Remedy. N. T. Dulaney, Jr., Bristol, Tenn.
112 Why School Children Should Be Examined. T. A. Frazer, Marion.

Buffalo Medical Journal.

May.

113 Treatment of Chronic Catarrhal Gastritis. A. A. Jones, Buffalo.
114 Symptoms and Signs of Gallstone Disease. F. W. McGuire, Buffalo.
115 Relation of the Function of Vision to Health. A. C. Snell, Rochester.
116 Few Suggestions on Prescription Writing. L. A. Thomas, Buffalo.

Vermont Medical Monthly, Burlington.

May 15.

117 Sciatica. M. B. Hodskins, Palmer, Mass.
118 Treatment of Status Epilepticus. A. Morton, St. Albans, Vt.

Indiana Medical Journal, Indianapolis.

May.

119 Consideration of Angina Pectoris. A. C. Kimberlin, Indianapolis.
120 Dr. Holmes as Poet and Physician. D. W. Layman, Indianapolis.
121 Music and Poetry, Their Relation to the Medical Life. A. W. Brayton, Indianapolis.
122 Femoral Hernia in an Aged Female, with Strangulation Caused by Subperitoneal Lipoma. D. M. Green, Muncie.
123 A Peculiar Gunshot Wound of the Neck, with Autopsy. J. L. Marsh, Brownsburg, Ind.

The Ohio State Medical Journal, Columbus.

May 15.

124 Dangers of the So-called Radical Mastoid Operation. F. Allport, Chicago.
125 Duty of the General Practitioner in Cases of Mental Diseases. B. F. Beebe, Cincinnati.
126 Points on Colles' Fracture. S. P. Wise, Millersburg.
127 Two Cases of Meckel's Diverticulum. C. H. Humphreys, Dayton.
128 Puerperal Mastitis. C. E. Norris, Akron.
129 Rupture of the Uterus. J. M. Watt, Toronto.
130 An Episode in the Lodgment of Foreign Bodies in the Stomach and Esophagus. W. S. Phillips, Belle Center, Ohio.

American Journal of Surgery, New York.

May.

131 *Conservatism in Post-operative Treatment. S. C. Beebe, David City, Neb.
132 Plaster of Paris and How to Use It. (Continued). M. W. Ware, New York.
133 *Some Observations on Nephropexy. D. W. Basham, Wichita, Kan.
134 Renal Traumatism. C. G. Cumston, Boston.
135 Hypertrophy of the Pharyngeal and Faucial Tonsils. F. C. Raynor, Brooklyn, N. Y.
136 Case of Gangrene of the Entire Colon. E. Lanphear, St. Louis.
137 Close-Fitting Hip Splint, intended Especially for Fracture. J. P. Hetherington, Logansport, Ind.
138 Case of Hip Disease Simulating Malignant Disease. J. Ridlon, Chicago.

131. *Id.*—Jan. 20, 1906, page 223.
133. *Id.* Jan. 13, 1906, page 145.

Oklahoma Medical News-Journal, Oklahoma City.

May.

139 Tuberculous Joints. F. H. Clark, El Reno.
140 Removal of Small Foreign Bodies from the Cornea, Conjunctiva, Etc. F. Allport, Chicago.
141 Abortion, Its Causes and Treatment. W. A. Fullington, Oklahoma City.
142 Abuse of Antiseptics. C. L. Zugg, Argentine, Kan.

Columbus Medical Journal.

May.

143 Trigeminal Neuralgia. B. M. Ricketts, Cincinnati.
144 Claimant for Pension. P. J. Kline, Portsmouth.
145 Criminal Abortion Viewed from a Moral Standpoint. C. P. King, Newark.
146 Organization of Medical Teachers. W. A. Dickey, Toledo.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

May 5.

1 *Surgical Complications of Tabes Dorsalis. A. A. Bowlby.
2 *Bacteriology of a Common Cold. C. H. Benham.
3 Diffusion of Red Blood Corpuscles Through Solid Nutrient Agar. H. C. Ross.
4 *Personal Identification by Means of Finger-Print Impressions. V. Bateson.
5 Serumtherapy by the Mouth. D. M. Paton.
6 Cervical Ribs and Their Effects on the Great Vessels of the Neck. W. Broadbent.
7 *Case of One Cerebral Hemisphere Supplying Both Sides of the Body. G. H. Grillis.
8 What Influence Have Use of X-Rays Had On Treatment of Fractures and Dislocations. J. L. Thomas.

1. **Surgical Complications of Tabes.**—Among the complications mentioned by Bowlby as having occurred in the cases reported are Charcot's disease, spontaneous fractures and perforating ulcers of the foot.

2. **Bacteriology of a Common Cold.**—Of twenty-seven cases examined bacteriologically by Benham, diphtheroid organisms were found to be present in 20 cases out of 21—that is, 95 per cent.—and were isolated in 5 of the cases, also in one of the sanatorium cases. Cocci negative to Gram's stain were seen in 10 out of 21 cases—that is, 48 per cent.—and isolated in 2 cases. Other cocci positive to Gram's stain were seen in 14 cases—67 per cent. Some of these were undoubtedly pneumococci. They were not present in large numbers in any of the cases, nor was it found possible to isolate them. Pfeiffer's bacillus, though carefully looked for, could be found in only 2 cases in small numbers, and was not obtained in pure culture. Other organisms were found in small numbers, much as in normal throats and noses.

4. **Identification by Finger-print Impressions.**—Bateson says that the value of finger-print impressions as a means of identification is not as yet appreciated by insurance companies. There is no doubt that the impression of the finger of a dead person taken before decomposition sets in would fix its identity in a most convincing way if at any previous time the deceased had been required to give an impression of the same finger. Its value as a means of authenticating testamental dispositions can not be overestimated. He says that the simplicity of the process of recording these finger-prints is one of its chief attractions. The apparatus consists of (1) specially prepared printer's ink; (2) a small roller for spreading the ink; (3) a slab of glass, polished copper or porcelain, on which the ink must be rolled out into as thin a film as possible; (4) the paper or card on which the prints are taken, this not to be too highly glazed; (5) a solution of washing soda to remove the ink from the fingers. The ink, roller and slab must be kept scrupulously clean and free from dust, hairs or grit. To take a plain impression, press the finger lightly on the inked slab and then on the receiving surface, and imprint the

design as from a stamp, which in this case happens to be a whorl.

Another more useful form is the rolled impression, which has the advantage of showing a much greater surface and a larger number of points for comparison. To take a rolled impression, the finger is laid on one side and rolled over to the other, so that the plane of the nail is at right angles to the plane of the slab at the commencement and termination of the inking, and if the finger lay on the ulnar side to begin, the movement ended when it lay on the radial edge. The same rotation of the inked finger imprints the design, which by its greater breadth gives the Brobdingnagian impression.

5. **Serum Therapy by the Month.**—For eight years Paton has been using serums by the mouth, both normal serums and the product of immunity, with remarkable results. He says that the theory which best explains their action is that of tissue resistance. That is, that along with antitoxic and antibacterial resistance to infection, or alone when those other elements are absent, there is produced an increased resistance in the tissues to the pathogenic action on them of the organisms present; that this produces what may be called a sterile soil without harmfully affecting the organisms themselves. The organisms themselves having no suitable soil for their action, are readily eliminated.

7. **Case of One Cerebral Hemisphere.**—The patient whose case is reported by Grills was certified as an imbecile when 19 years of age. She was said to be an epileptic, but was not known to have had a fit for twenty years. She was able to mix with the other patients and to walk about the grounds. She could use both arm and leg of the right side, but they were slightly contracted and stiff; she did not make such skilled movements with them as with the left; they were equally well nourished. Sensibility was normal, so far as one could make out, but she had a great dislike of anything cold. Knee-jerks and plantar reflexes showed no appreciable difference on the two sides and were apparently normal. She was not ataxic in gait. Mentally she was imbecile, slow and stupid, but understood spoken language, and sometimes spoke even of her old associates before admission, recalling them by their correct names. She died at the age of 42. About a week before her death she began to walk about in a drunken fashion, rapidly became quite helpless, and died, the cause of her death being certified as congenital malformation of the brain.

At the postmortem all the organs were healthy and normal, with the exception of the central nervous system, which presented the following features: The left hemisphere of the cerebrum was quite symmetrical and was as well shaped as the right hemisphere, except that the gyri were indicated by linear marks and not by deep sulchi. On tapping any part of the hemisphere the percussion wave could be felt, showing that the hemisphere was merely a sac filled with fluid. On an average the membrane was less than one-fourth inch thick. Microscopically it showed no typical motor cells. The cells in the membranous covering were almost all of the globose character, and had few and often no processes which could be demonstrated by the freezing method. The cells in the right hemisphere, on the other hand, were very rich in processes, which could be traced for great distances even among arborizations, and this especially from the large pyramidal cells, which were very prominent. The contents of the sac was a clear and transparent, slightly alkaline fluid. The temporo-sphenoidal lobe on the left side and the region of the island of Reil were not membranous and showed very thin layers of gray and white matter. The corpus callosum was represented by an extremely delicate, white membrane, which tore on the slightest separation of the hemisphere. The right side of the cerebellum was atrophied and weighed 40 grams, as compared with 63, the weight of the left. The olivary body and anterior pyramid of the left side were about one-third the size of the same bodies of the right side. The basal ganglia were not apparently atrophied, except the left caudate nucleus. The left internal capsule was represented by a very thin white band. The right lateral ventricle was about half as large again as it should have been.

The spinal cord on transverse section showed no appreciable difference in size or shape between the right and left halves, and both anterior and posterior cornua were identical in size and shape on the opposite sides, and showed typical ganglionic cells, which were about equal in number and size on the opposite sides. There was no degeneration of fiber in the spinal cord, and the only point in which the cord seemed to differ from the normal was that narrow strands of gray matter swept back through the white matter from the anterior cornu of one side across the anterior commissure and into the base of the opposite cornu.

The Lancet, London.

May 5.

9 Bearing of Metabolism Experiments on the Treatment of Some Diseases. E. I. Spriggs.
10 *Pathogeny of Diabetes. F. W. Pavy.
11 Action of Venoms of Different Species of Poisonous Snakes on the Nervous System. G. Lamb and W. K. Hunter.
12 *Twenty-two Fatalities Which Have Occurred Under Ethyl Chlorid. T. D. Luke.
13 Primary Caries of the Mastoid Process as a Cause of Mastoid Abscess in Young Children. L. F. Gamgee.
14 Obscure Cerebral Manifestations of Tuberculosis. J. Fortune.
15 Successful Case of Epilepsy for Cirrhosis of the Liver with Ascites. T. K. Monro and A. N. McGregor.

10. **Pathogeny of Diabetes.**—Pavy thinks that it may be generally admitted that the nervous system is involved in the pathogeny of diabetes and that this disease is essentially a neurosis affecting a particular part of the vasomotor system. His views are set forth at great length and for these the reader is referred to the original paper.

12. **Ethyl Chlorid Anesthesia.**—The fatalities referred to in the title of this paper did not occur in Luke's experience, but in that of others. He has administered ethyl chlorid to all classes of patients on considerably over 2,000 occasions and has not had a single fatality, in fact nothing worse than two cases of temporary respiratory arrest with considerable cyanosis and very widely dilated pupils.

The Dublin Journal of Medical Science.

April.

16 Abdominal Tuberculosis in Its Clinical Aspects. J. Little.
17 Tuberculosis of the Female Genital Organs. W. Smyly.
18 Points in the Pathology of Abdominal Tuberculosis. E. J. McWeeney.
19 Surgical Aspect of Abdominal Tuberculosis. T. E. Gordon.
20 Opsonic Index in Relation to Tuberculous Peritonitis. A. H. White.

The Australasian Medical Gazette, Sydney.

March 20.

21 Hospital Abuse. T. A. Wilson.
22 Typhoid Fever in New South Wales, 1898-1904. (To be continued). R. J. Millard.
23 Cause of Pseudo-Myopia. J. L. Gibson.
24 Case of Acute Hemorrhagic Pancreatitis. A. E. Wigg.
25 Hystero-Neuroses; Their Cause and Treatment. W. W. Ewbank.

Presse Médicale, Paris.

26 (XIV, Nos. 26-27.) Cholémie physiologique. A. Gilbert and M. Herscher.
27 *Les fausses gastropathies. Diagnostique et traitement. J. Déjérine and E. Gauckler.
28 Rôle of "Thyminic Acid" in Uric Acid Pathology.—De l'acide thyminique. A. Breton.
29 (No. 28.) *New Method of Shortening Round Ligaments. Ligamentopexie rétro-utérine et sous-tubo-ovarienne. Darrigues and Caraven.
30 Le souffle systolique de l'insuffisance aortique pure. A. Calabrese.
31 Le régime diététique dans l'armée japonaise et les principales armées européennes. H. Labbé.
32 (Nos. 29-30.) *Le processus histologique de l'athérome et de l'artériosclérose. Les poisons des artères. M. Loeper.
33 La sporotrichose (abcès sous-cutanés multiples). L. Dor. One case.
34 Méthode objective de mesure de la pression artérielle avec l'emploi, comme témoin, du sphygmographe de Dudgeon modifié. Pariset.

27. **Diagnosis and Treatment of "False Gastropathies."** In THE JOURNAL, May 12, page 1482, the first communication by Déjérine on this subject was reviewed. He here summarizes his method of treating these purely imaginary stomach affections. The diagnosis must be based on the history of the case without objective examination. Any attempt at the latter aggravates the symptoms, as a rule, and fixes the patient in his notion of stomach trouble. The functional disturbance follows some emotion, worry or shock, and is forgotten when life becomes serene once more, but business or domestic

troubles cause its reappearance. The patients apply to one physician after the other; one of his patients had consulted fifty. They thus learn the symptomatology of all kinds of stomach diseases, and experience them in turn or superposed, this blending of the classic syndromes of various gastropathies being one of the important diagnostic signs. The avoidance of certain foods supposed to be harmful leads to emaciation in some cases, and if continued through years, as frequently occurs, the appearance of the patients suggests malignant disease. The long duration of the trouble is evidence against this assumption, coupled with the absence of specific signs of a neoplasm. Fully 90 per cent. of the cases of gastric affections observed at the Salpêtrière come under the heading of "false gastropathies." This diagnosis is confirmed by the complete recovery under appropriate treatment, which consists in strict avoidance of objective examination of the stomach, functional or somatic; strict isolation, bed screened if in the hospital, with exclusion of visitors, and strict milk diet—more than five quarts of milk a day, sipped in frequent small amounts. In short, these patients recover and gain in weight as if by magic under purely psychopathic treatment: "milk isolation." psychotherapy and re-education of the stomach. These gastropathies of psychic origin must not be confounded with true stomach affections occurring in neurasthenies, which require quite different treatment.

29. **Retrouterine Shortening of the Round Ligaments.**—The methods of taking up a loop in the round ligaments, hitherto presented, fasten the loops together in front of the uterus. This technic has several disadvantages, Dartigues states, which can be avoided if the shortening is done at the back of the uterus. The laparotomy and the entire technic, including the suturing of the abdominal incision, can be completed in ten minutes. The two loops are merely tied together, without the necessity for suturing. Nothing is cut nor punctured, no stitches are taken, and consequently not a drop of blood is lost. The uterus is raised and held in normal position without abnormal fixation anywhere. The technic can be readily understood from the illustrations that accompany the description in the article. It has been used on 2 patients at Pozzi's clinic, answering all anticipations.

32. **Etiology of Atheroma and of Arteriosclerosis.** — Loeper defines the lesions of atheroma and arteriosclerosis as sclero-atheromatous endarteritis and calcifying mesarteritis in the arteries and of pure sclerosis in the arterioles. All are the result of a dual process of sclerosis and calcification, alone or in combination, the result of slow, gradual, prolonged action of toxic irritation on the tissues of the artery. Among these arterial poisons, suprarenal extracts, lead, tobacco, ergot and theocin have a decidedly elective action on the arterial system, in which they induce calcification. The aorta suffers most, and rabbits and cows are affected more than dogs, possibly owing to their vegetable diet. The calcification is due more to a nutritional disturbance than to inflammation or necrosis.

Revue de Médecine, Paris.

Last indexed, XLV, page 1450.

35 (XXV, No. 6.) Etude anatomo-pathologique du sympathique abdominal dans les infections. Lalanel-Lavastine.
36 De l'excitabilité des muscles. V. Kiplant.
37 Certains symptomes de la maladie de Parkinson. G. Catola (Florence).
38 (No. 7.) *Les rémissions prolongées de la méningite tuberculeuse chez l'enfant. G. Carrière and Lhote (Lille).
39 Séro-réaction de la bacille-tuberculose. G. Sabareanu and M. Salomon.
40 *La diphthérie dans les collectivités. Son étiologie.—Sa prophylaxie Roussel and Job. (Concluded.)
41 (No. 8.) *L'alimentation dans la tuberculose expérimentale. Influence nocive de la viande crue (injurious influence of cooked meat). C. Richet.
42 2 cas de cirrhose atrophique à marche aigu avec ascite chyliforme. A. A. Lambrior.
43 (No. 9.) *Anémie pernicieuse. Formes curables. Formes secondaires. Forme lethérique. A. Chauffard and L. Laederich.
44 Note sur les rêves épileptiques (dreams). C. Féré.
45 *Dystrophie de la fonction d'élimination chlorurée urinaire chez les obèses. H. Labbé and L. Furet.
46 Perforations intestinales de la rechute et de la convalescence de la fièvre typhoïde et résultats operatoires (perforations during relapse, etc.). E. Doyle and J. Froment.
47 (No. 10.) Le syndrome myoclonique. H. Huchard and N. Flessinger.
48 Les conditions economiques dans l'etiologie sociale de la tuberculose. R. Romme.
49 Position du coeur, dans l'exsudat d'origine inflammatoire de la séreuse du coeur. Applications à la paracentèse du péricarde (position of heart in pericarditis). B. Schapo-schnikoff.
50 Paralysie des mouvements associées de latéralité des yeux dans les affections du cervelet, des tubercules quadrijumeaux et de la protubérance (side movements of eyes in brain affections). A. Gaussel (Montpellier).

38. **Long Remissions in Tuberculous Meningitis.**—This article is based on 3 cases personally observed and 7 from the experience of others. Study of these cases shows that tuberculous meningitis is not necessarily soon fatal, but may allow remissions of varying length. These remissions are very rarely recognized, but several causes are responsible for this. During the remission a few signs persist, showing that the tuberculous affection is only dormant and that a relapse is to be feared. The last relapse has generally an abrupt onset and rapidly fatal course. The pathologic anatomy explains the remissions. The lesion, the initial cause of all the trouble, is localized and undergoes fibrous transformation, but remains, nevertheless, a permanent menace of future irritation and inflammation. Energetic treatment should be instituted during the remission: hygienic measures, tonics (arsenic, glycophosphates and lecithin), avoidance of physical overexertion and of much brain work, with administration of a little calomel now and then for constipation and to increase the secretions, are indicated. Potassium iodid daily in small doses promotes absorption and favors elimination of bacillary toxins. Creosote by the rectum has given good results in his experience. In one of the cases reviewed the remission lasted for five years and a half. Some of the patients seem to be clinically cured at present.

40. **Prophylaxis of Diphtheria in Barracks, Etc.**—Roussel and Job conclude their long study of this subject with the suggestions that prophylaxis should include isolation of every patient with an affection in which the Loeffler bacillus is recognized as the cause. Isolation should be continued until negative results are obtained in two bacteriologic examinations with an interval of a week at least. If the positive findings persist after 40 days of convalescence the patient can be dismissed, but the health of persons in his environment must be supervised. They advise, further, collective isolation of contaminated groups, with daily medical surveillance, for 15 days after the last pathologic manifestation due to the diphtheria bacillus. They also advise preventive injections of diphtheria antitoxin for healthy persons who have been exposed, when the manifestations of the disease are particularly serious, and the number of persons exposed is not too large, and disinfection of all the objects and rooms that the diphtheria patient might have infected in a radius of 39 inches around him. These measures may be regarded as ample under the above condition, namely, daily medical surveillance. The convalescents and the healthy suspects should use a local disinfectant for the throat every day, possibly promoting its action with ammonium bicarbonate to dissolve the mucus. An extensive bibliography is appended.

41. **Injurious Influence of Cooked Meat in Experimental Tuberculosis.**—Richet here gives the details of his experiments with tuberculous dogs fed with cooked meat. He found it the most harmful of all methods of feeding, while raw meat, as the sole food, proved incontestably the best.

43. **Recovery from Pernicious Anemia.**—Chauffard and Laederich report 2 cases of pernicious anemia which, instead of proving progressive, showed retrogression, with the complete recovery of the patients. One was a typical "plastic" anemia, that is, with the marrow elements of the blood assuming abnormal forms, while the other case was of the "aplastic" type, that is, without any evidence of an organic reaction There were no nucleated reds and scarcely 3 myelocytes to 100 leucocytes, and yet in seven weeks the number of reds increased from 560,000 to 3,264,000. The blood-forming organs were aroused to action by the treatment, which included organotherapy and subcutaneous injections of liquor potassii arsenitis. The doses were progressive, from 6 to 20 drops a day, with intermissions of a week every second or third week Calves' red marrow was given in amounts from 40 to 100 gm., chopped or mashed in warm bouillon. It is important to know that the marrow is really red marrow, even if a cyto-

logic test is necessary. Iron and inhalation of oxygen may be useful as adjuvants, but can not be depended on exclusively. Several other cases of cures of pernicious anemia under marrow therapy have recently been recorded.

45. **Treatment of Obesity.**—Labbé and Furet outline the rational treatment of obesity as abstention from salt and free ingestion of fluids, with regulation of the diet.

Semaine Médicale, Paris.

51 (XXVI, No. 17.) *Diagnostic des ruptures utérines. R. de Bovis.

51. **Rupture of Uterus.**—De Bovis reviews his experience with a number of cases of rupture of the uterus and discusses the diagnosis. In the first place, he says, whenever there is dystocia, no matter how slight, the possibility of rupture should be borne in mind. It must be sought for, as whenever it causes symptoms that attract attention the trouble is already irreparable. It is especially liable to occur with face, shoulder and breech presentations, in women who have borne many children, in twin pregnancies, and in case of contracted pelvis. In one-half or one-third of all cases under his observation the trouble has been the result of hydrocephalus or encephalocele. Whenever the obstetrician has had occasion to interfere in the delivery, he should seize the opportunity to verify the integrity of the uterus. The most important sign of a rupture is the sudden exclamation of the patient during the course of labor, a cry of sharp pain, and sometimes an exclamation that "something has broken loose inside." This is followed by a deceptive calm—the labor pains generally stop at once when the uterus ruptures. The exclamation of pain may not have attracted the attention of the attendants, but the arrest of the labor pains is generally noticed and is a valuable aid in differentiation. Hemorrhage generally does not appear with the onset of labor, but is noted after twenty-four or forty-eight hours or longer. It may occur and be very severe as the child is delivered, and the compression on the walls and arteries is thus suddenly removed. Another important sign is the painfulness on pressure of the lower segment of the uterus, in the iliac fossæ toward the superior strait or a little lower, contact of the parts other than the skin causing extreme pain. He remarks that if he had trusted to this sign and operated at once he might have saved one of his patients who succumbed. He hesitated, not liking to open the abdomen on that one sign alone. He believes that many instances of supposed puerperal fever are in reality cases of unsuspected and infected rupture. This may be surmised when hemorrhage occurs secondarily from suppuration of the wound of the rupture and erosion of the arteries, such hemorrhages appearing after the third day or later, sudden, brief, recurring and sometimes occurring at night. Accumulation of blood in the pelvis may cause severe pain from irritation of the peritoneum or compression of nerves. As it is impossible to say what will become later of a once ruptured uterus, he advocates prompt hysterectomy, before infection has had a chance to develop.

Archiv f. Verdauungs-Krankheiten, Boas', Berlin.

Last indexed, page 1156.

52 (XII, No. 2.) *Experimental Study of Physiologic Action of Administration of Hydrochloric Acid on the Gastric Secretions.—Exp. Untersuchungen ueber die physiolog. Einwirkung der Salzsäuredarreichung auf die Magensekretion. F. Heinsheimer.

53 *Ueber Gastritis phlegmonosa. K. Schnarrwyler.

54 *Attempts to Introduce a Sound into the Colon.—Ueber Sondierungsversuche des Colons. E. Lilienthal.

55 *Fall von Ulcus ventriculi rotundum mit Cholelithiasis, Cholecystitis, Pericholecystitis und konsekutiver motorischer Insuffizienz II. Grades des Magens; Operation; Heilung. G. Haas.

52. **Physiologic Action of Administration of Hydrochloric Acid on Gastric Secretion.**—Heinsheimer's experiments were made on dogs with a Pawlow fistula and blind stomach pouch. When the hydrochloric acid was given before feeding, it had no more influence on the secretion than simple water. When given at the beginning of secretory activity the latter persisted longer than when water alone had been given.

53. **Phlegmonous Gastritis.**—On the basis of 3 cases personally observed and 80 described in the literature, the history and clinical picture of phlegmonous gastritis are outlined and treatment discussed. Recovery is known in only 4 instances. The affection has a course of from one to twenty days, as a rule, although Glax has reported a case in which the patient recovered by the end of four weeks. Boas recommends in treatment ice externally and internally, opiates in the form of suppositories, morphin, quinin and stimulants, with operative treatment in case of an abscess. In Lengemann's case, the patient, a young woman, was operated on for supposed perforation of an ulcer in the stomach. The findings were those of a localized peritonitis and the anterior wall of the stomach was found transformed into a thickened, rigid plate, characteristic of the phlegmonous affection. The region was washed, tamponed and dressed with hot wet compresses, and the patient soon recovered. Lengemann advocates early laparotomy and tamponing in all such cases, as this is the only means of preventing peritonitis and thus allowing recovery. In 44 of the cases on record there were alcoholic antecedents in 8 cases: in 5 the trouble was referred to errors in diet; in 2 to getting chilled; in 6 to intoxication; to trauma in 2; puerperal fever in 2; pyemia in 2; to swallowing pus from an ulcer in 1; to cancer in 6; to articular rheumatism or typhoid 2 and 1; septic esophagitis in 1; round ulcer of the stomach in 4; and secondary to leg ulcer, to gastrostomy, and to bronchiectasia in 1 each.

About two-thirds of the patients were males, the youngest 11 and the oldest 76. The symptoms are not characteristic and are generally masked by the co-existing peritonitis. The affection was very seldom diagnosed during life. In 3 cases on record no stomach symptoms had been noted and the findings were an autopsy surprise. In 3 cases pus was found in the vomitus and these were the cases that terminated in recovery. The trouble is a diffuse acute suppurative inflammation of the stomach, principally located in the submucous coat, a suppurative infiltration spreading thence to involve the intermuscular connective tissue, and possibly also the serosa, while the mucosa may be swollen and permeated with pus cells. The rarity of pus in the vomitus is explained by Leube as due to the fact that the pus evacuated through the mucosa is digested in the stomach and thus is not macroscopically visible. Vomiting is generally excessive at first but subsides later, to recur again as peritonitis becomes installed. Fever is generally present, and of a pyemic type. In 3 instances there was thrombosis of the liver veins and in some others complicating suppurative pleurisy and pericarditis. The 3 cases personally observed are described in detail with the postmortem findings illustrated. The first description dates from 1656.

54. **Attempts to Introduce a Sound into the Colon.**—Lilienthal gives some radiograms which confirm the assumption that it is almost impossible to succeed in pushing a sound into the colon. When this can be done, it is owing to some individual peculiarity which allows the rectum, sigmoid flexure and descending colon to lie in a straight line.

55. **Round Ulcer of the Stomach Plus Gallstone Affection.**—The patient was a man of 36, who presented symptoms of round ulcer of the stomach, cholelithiasis and cholecystitis, with motor insufficiency. The latter was not due to the ulcer, but was the result of adhesion of the liver to the pylorus, the consequences of pericholecystitis, with resulting stenosis of the pylorus. The patient refused operative treatment at first, but finally consented after three years. He was restored to health by a gastroenterostomy.

Berliner klinische Wochenschrift.

56 (XLIII, No. 8.) *Experiences with the extended Freund Operation.—Erfahrungen mit der erweiterten Freund'schen Operation. J. Veit.

57 Das Antituberkuloseserum Marmorek. A. Hoffa.

58 *Weitere Ergebnisse meiner ösophagoskopischen Arbeiten. G. Glücksmann.

59 *Erfahrungen mit Radium-Behandlung. A. Blaschko.

60 Behavior of Uric Acid and Urea in Gout.—Ueber das Verhalten der Harnsäure und des Harnstoffs bei der Gicht. Falkenstein.

61 Ueber Herpes laryngis et pharyngis (nebst Beiträgen zur Frage der Schleimhauterythene. E. Glas. (Concluded).

62 Die Bekämpfung des Malaria-Fiebers. U. Friedemann.

63 (No. 9.) *Ueber Rachitis als Volkskrankheit. D. v. Hansemann.

64 Zur Frage der Zusammensetzung des Reststickstoffs im Blute und in serösen Flüssigkeiten (residual nitrogen in blood, etc.). C. Neuberg and H. Strauss.

65 *Zur Heilung der Larynxtuberkulose. A. Alexander.
66 *Ueber Aorten Erkrankung bei congenitaler Syphilis. C. Bruhns.
67 *Die chirurgische Behandlung der Kehlkopf-Tuberkulose (of larynx). G. Finder.

56. **Uterine Cancer Operations.**—Veit expatiates on the danger from virulent streptococci and other germs in the early stages of cancer and the danger from the almost invariably degenerated heart in the advanced cases. Antibodies against the germs have developed by this stage, but the heart is ill able to stand chloroform anesthesia. He prepares the cancer for the operation the evening before by curetting and covering with gauze saturated with an antiseptic solution. When the gauze is removed the vagina is wiped dry with sublimate and alcohol. He then administers antistreptococcus serum, and commences the operation by the "hunt for the glands." After detaching the vagina and suturing, he flushes freely the wound in the peritoneum and its vicinity with alcohol, wiping it quickly away. He has been using spinal analgesia instead of chloroform in these cases, and has been much pleased with the technic and results since he adopted it a year ago, although a large amount of the anesthetic is necessary for these abdominal operations. Even if a little chloroform may be required to complete the operation, the amount is trifling in comparison. He places great stress on absolute stillness in the room during the disinfection and anesthetization. His experience confirms Lennander's in regard to the lack of sensibility in the peritoneum. Traction causes pain, but not mere contact.

Venous thrombosis is prevented by tying off the afferent arteries. In his last series of 20 cases, 2 patients died for whom he was unable to procure enough antistreptococcus serum, while all the other patients made a smooth recovery. He regards this as significant. He even affirms that death after this, as after other operations, is always avoidable. The operation must be successful if all conditions for success are insured, with special regard to infection from the germs already in the cancer and the weakness of the heart.

58. **Esophagoscopy.**—Glücksman gives 21 views seen with the esophagoscope in various affections. Most of them are drawn from nature, but two were obtained with the aid of a photographic camera.

59. **Radium in Therapeutics.**—Blaschko relates his experiences with various skin affections treated with radium. He has been particularly pleased with the effect of what he calls a radium plaster, the radium bromid being spread evenly over a celluloid plate, in a very thin layer, protected with lacquer, and fastened to the skin with adhesive plaster. He has found radium an extraordinarily effectual and absolutely harmless remedy for circumscribed, superficial tumors, malignant and innocent, and for a number of otherwise obstinate, chronic inflammatory cutaneous affections.

63. **Rachitis as Result of Domestication.**—Rachitis occurs among children and among animals as the result of defective hygiene, and von Hansemann states, is never observed in animals or children living in freedom. It develops almost inevitably in monkeys kept in captivity, no matter where. It is never observed in uncivilized peoples. In all his extensive research he has never found any evidences of rachitis in a native African. He has made numerous inquiries and has had specimens and pictures sent him of every case of alleged rachitis of which he could learn in the native tribes of the East Indies and Africa. In every instance the trouble proved to be some anomaly in cartilage development, never true rachitis. The latter develops when there is lack of pure air and freedom of movement. It is not known in Japan, but will probably appear there if the Japanese adopt European methods of building houses and dressing the babies. He remarks that we have been able to domesticate dogs, horses and cattle, but not cats. Cats are tamed, but not domesticated. This aspect of domestication was presented by von Hansemann at the Lisbon congress.

65. **Cure of Laryngeal Tuberculosis.**—Alexander gives the details of 7 cases of laryngeal tuberculosis, in which the patients were clinically cured by general and operative measures. In some cases curettement and lactic acid cauterization seemed to do actual harm, and the laryngeal process did not heal until left to itself under general measures. In one case healing proceeded by a kind of membrane formation. No operative measures were attempted in this case for fear of arousing the bacilli bound up in the membrane.

66. **Aortic Affections in Congenital Syphilis.**—Bruhns has found in a number of cases of congenital syphilis indications of inflammatory foci which correspond in every respect to the "productive mesaortitis" described by Chiari in acquired syphilis.

67. **Present Operative Treatment of Laryngeal Tuberculosis.**—Finder reviews the present status of the question and the technic practiced by various surgeons.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

68 (XXXII, No. 11.) *Ueber Schutzimpfung des Menschen mit lebenden abgeschwächten Pestkulturen (Vaccination against plague). W. Kolle.
69 *Die Meningococcen-Pharyngitis als Grundlage der epidemischen Genickstarre (basis of cerebrospinal meningitis). A. Ostermann.
70 Vaginal Cesarean Section.—Der vaginale Kaiserschnitt und die chirurgische Aera in der Geburtshilfe. A. Dührssen.
71 Ueber Lysolvergiftung (intoxication). Puppe.
72 Ueber die Anwendung von Oelklystieren bei der chronischen Obstipation der Brustkinder (oil enemas for nurslings). M. Winsch.
73 Valve Arrangement That Fits Into Any Tube and Transforms Any Syringe Into an Air Pump.—Ein Ventilschaltstück, welches jede grössere Spritze zu einer für Stauung und Punktion tauglichen Luftpumpe macht. W. Gross.
74 Address on Awarding the Kussmaul Medal to Bier. Rede. V. Czerny.

68. **Vaccination Against Plague.**—Kolle reports successful results from inoculation of 42 men with cultures of living plague bacilli attenuated by keeping the cultures at a temperature of from 42 to 43 C. The men were kept under observation for four months at least after these protective inoculations, and the absolute harmlessness of the method was fully established. The work was done in collaboration with Strong of Manila, and has already been reviewed editorially, April 14, 1906, page 1114.

69. **Prophylaxis of Epidemic Cerebrospinal Meningitis.** Ostermann remarks that the measures to prevent the spread of meningitis in the great epidemic in Silesia last year proved utterly useless. Never was there such an extensive and obstinate epidemic, and never one so strictly supervised from the start, with medical prophylaxis so scrupulously enforced. Flügge thinks that he has discovered the reason for this failure to be the extensive distribution of the meningococci in the mouths and throats of sound individuals in the environment of the sick. At most the cocci cause in them a catarrhal pharyngitis. The cocci die off quickly on clothing, and on articles contaminated. They thrive, however, as on a congenial culture medium, in the throats of other individuals. Here they persist and infection is spread from this source. Ostermann discusses how best to cope with this danger. Nothing is yet known which will destroy the cocci in the throats without injury to the tissues, but he hopes that some substance will soon be discovered which will answer the purpose in local application. The cocci do not cause general disturbance, but remain strictly localized.

He outlines a warning circular for distribution among the laity. It describes the dangers of the disease and its dissemination by contact, by droplets of moisture in coughing and loud speaking, etc. The public are warned to observe the following precautions for three weeks after contact with a case: 1. To avoid unnecessary intercourse with other people, especially in large gatherings, and to avoid contact, kissing, and the use of common drinking and eating utensils. 2. The discharges from mouth and throat should be deposited on rags or paper handkerchiefs, which should be burned at once. If handkerchiefs are used, they should be boiled for ten minutes or left for an hour in "cresol water." If any of the discharge gets on the fingers they should be washed in this solution and floors and clothing soiled with the discharges should be copiously moistened with it. 3. During speaking and coughing keep at arm's length from other persons. The article issues from Flügge's Hygienic Institute at Breslau. It adds that as the cocci die so soon, it is of little use to send material to a bacteriologic institute for examination. It would be much better to send a bacteriologist to the spot when a case of meningitis occurs, and the author pleads for the appointment of a special bacteriologist to be sent at once to the place and there to co

operate with the local officials. It is wise to regard every individual in the immediate environment as probably infected. The great extent of the epidemic in Silesia was probably due to the fact that the men are nearly all miners and are thus thrown into very intimate contact with each other. The cocci taken home by some of the sound "carriers" found a congenial soil in the throat of some predisposed member of the family, or were handed along to some other family. This explains why the intermediate links in the chain were not always apparent. Isolation of the sick need not be so strict as heretofore, and the disinfection of the rooms after recovery may be restricted to washing the floor, bed etc., with a solution of sublimate, and soaking suspicious body linen in the same solution. The remarkably low resisting powers of the meningococci, as soon as they have left the human body, render further measures superfluous.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 472.

75 (LXIII. No. 1.) *Zur Frage der tuberkulösen Infektion im ersten Kindesalter (in infancy). B. Salge.
76 *Ueber Agglutination bei Skrofulöse. A. N. Schkarin.
77 *Die Azidose des Säuglings (in infants). L. Meyer and L. Langstein.
78 *Blutdruckmessungem an gesunden und kranken Säuglingen (blood pressure in infants). J. Trumpp.
79 Ueber den blauen Kreuzfleck und andere mongoloide Erscheinungen bei europäischen Kindern (mongoloid signs in European children). A. Epstein.
80 Ueber die Molekül-Konzentration des Blutserums bei nephritischen und nicht nephritischen Kindern. G. B. Allaria.
81 *Akute postoperative Magendilatation im Kindesalter (dilatation of stomach in children). C. Beck.
82 (No. 2.) Die Masern in Strasburg speziell an der Kinderklinik daselbst, und die im Laufe der Epidemie von 1903-04 beobachteten Kombinationen von Masern mit Diphtherie und Scharlach (1,205 cases of measles). G. Kien.
83 *New Symptoms of Affections of Rectal Mucosa.—Ueber neue Symptome der Affektionen der Mastdarmschleimhaut. K. Svehla.
84 Versuche ueber die Chlorausscheidung bei orthostatischer Albuminurie (elimination of chlorin). P. Philippson.
85 Erfahrungen ueber Mastdarmpolypen im Kindesalter (rectal polyps in children). H. v. Mettenheimer.
86 Befunde bei akuter, nicht eiteriger Encephalitis eines Kindes. B. Weyl.
87 Eine seltene Form der Spina bifida cystica. E. Grossmann.
88 Ueber two Fälle kongenitaler Atresie des Ostium venosum dextrum. M. Kühne.

75 and 76. **Tuberculous Infection in Early Childhood.**—Salge tested 80 children for serum agglutination of tubercle bacilli. All but 9 were infants. In 20, that is, in one-fourth of all the children, the reaction was positive. These findings were discussed editorially in THE JOURNAL, May 19, page 1528, as also the following article by Schkarin. The latter found positive agglutination in 25 per cent. of the children examined, belonging to what Czerny calls the "exudative diathesis," while 62 per cent. of those with what Heubner calls "scrofulosis," gave a positive reaction, and nearly 80 per cent. of those with clinically evident tuberculous processes.

77. **Acidosis in Infants.**—Among the causes of acidosis in infants with acute stomach trouble, Meyer and Langstein include hunger, disturbance in carbohydrate metabolism, and great increase in the volatile fat acids in the feces. The latter reduces the alkalinity to a notable extent, evidenced by the fact that acids appear in the stools almost completely neutralized. This explains the high ammonia coefficient in catarrhal affections of the intestine, as also in other severe nutritional disturbances. In such conditions entailing acidosis, the ingestion of fat increases the amount of the intermediate acids, and also contributes materially to the formation of fat acids in the intestines. Salge has been very successful in curing infants with catarrhal intestinal affections by removing the fat from their milk, even when breast milk was used.

78. **Blood Pressure in Infants.**—Trumpp presents here the data of 1,300 measurements of the blood pressure in healthy and sick infants. He used Gaertner's tonometer without disturbing the infant in any way. He wished to learn if measurements of the blood pressure might serve as an indicator of whether or not increase of weight was due to normal growth or to the retention of water. His experience in 2 cases seemed to confirm this last assumption, the blood pressure falling and rising abruptly, parallel to the weight.

81. **Acute Postoperative Dilatation of Stomach.**—Beck describes a case observed in a girl of 15 after appendicectomy. He knows of only one similar case in a child on record (Staffel, 1888), in which the patient was a lad of 11, operated on for contraction of both knees and deformed feet. The child succumbed sixty hours after the first symptoms: vomiting and extension of liver dullness over the entire abdomen to the symphysis, with a small area of resonance over the stomach. The amounts of fluid vomited by Beck's patient were far in excess of the amounts ingested. Differentiation was based on the comparatively tardy onset of the vomiting, the third day after the operation—this was the more striking, as the patient had not vomited under the anesthetic—and on the physical signs, the normal pulse and temperature, and the absence of fecal elements in the vomit. The stomach should be rinsed out daily; morphin subcutaneously will aid in reducing the tendency to vomit. The thirst should be relieved by sucking ice or rinsing the mouth with ice water, swallowing very little, supplemented by saline infusion and nutrient enemas. The atony of the stomach may cause compression or kinking of the duodenum, and this may be combated by the patient lying on the side or abdomen, or changing to the knee-elbow position. If these measures fail, gastroenterostomy is indicated. If the dilatation subsides, the atony of the stomach may require faradization and administration of strychnin. After recovery, great care must be exercised in the diet. Beck attributes the dilatation in his case to a postnarcotic, toxic paralysis of the stomach, with compression of the duodenum by some local peritonitic adhesions, which later retrogressed. His patient was dismissed cured in about a month, but required lavage of the stomach once or twice a day for several days before the dilatation gradually subsided.

83. **New Symptoms of Rectal and Anal Affections.**—Svehla has had occasion to observe a number of cases in which some slight irritation of the rectal mucosa, evidenced by hyperemia, or fissure of the anus, caused special symptoms hitherto supposed to be characteristic of other affections. Among these symptoms are colic-like pains, and pains in the legs, and more especially pains such as have heretofore been regarded as peculiar to hip-joint disease. In men he has known fissure of the anus to induce prostatorrhea and thus to simulate a gonorrheal affection. He cures fissure of the anus by arresting the painful spasm by a cocain suppository and salve. The relief from pain puts an end to the reflex contraction, and the fissure then heals in peace under sitz baths three times a day and after stool, with local application of a salve, and measures to insure soft stools. One or two 0.01 gm. cocain suppositories are used daily. The largest number ever required by his patients was 22, healing generally being complete in about six days. Slight irritation of the mucosa around the anus, in infants, is sufficient to cause the symptoms mentioned. [The cocain, however, must be used with caution, as there is possibility of inducing a habit.]

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed, page 1655.

89 (XXIII. No. 2.) *Ueber Beginn, Dauer und Erlöschen der Menstruation (duration and end). R. Schaffer.
90 *Tuberculosis of Kidneys and Bladder in Women.—Ueber Nieren- und Blasen-Tuberculose bei Frauen. S. Mirabeau.
91 Zur Aetiologie letaler Atonien post partum. E. Martin.
92 *Fall von Puerperal-Fieber geheilt durch Total-Exstirpation des Uterus. O. Vertes (Budapest).
93 *Importance of Appendix, Etc.—Bedeutung des Wurmfortsatzes und der lymphatischen Apparate des Darmtractus. E. Albrecht (Frankfurt a. M.)
94 Statistische und anatomische Ergebnisse bei der Freund-Wertheimschen Radikal-Operation des Uterus-Karzinoms. R. Schindler (Gratz).

89. **Menstruation.**—Schaeffer has been collecting data in regard to the commencement, duration and extinction of menstruation. His material includes 10,500 women examined at the Berlin Gynecologic Clinic. He tabulates his data and compares them with those of other writers.

90. **Tuberculosis of Female Urinary Apparatus.**—Mirabeau's later experience has amply confirmed his previous assertions in regard to the secondary nature of tuberculosis of the female bladder. It is always of renal origin, and has no direct connection with tuberculous processes in the genitals. He affirms also that in more than 50 per cent. of all cases only one kidney is affected. A positive diagnosis can be made without fail by the aid of cystoscopy and catheterization of the ureters, but

palpation of the thickened ureter is the most important diagnostic symptom in general practice. In case of unilateral affection, the functional capacity of the sound mate can be determined, as a rule, with sufficient accuracy by clinical observation and chemical and microscopic examination of the segregated urine. It must not be denied, however, that in isolated, dubious cases functional kidney tests may afford valuable information. The only treatment, he says, is early removal of the affected kidney. An existing pregnancy is no contraindication to operation. The tuberculous enlarged ureter can be readily palpated in bimanual examination of the vault of the vagina. Non-tuberculous processes never induce this characteristic thickening. It may be regarded as a sure sign of descending tuberculosis. Its absence on the other side indicates presumptively that the connected kidney is sound. The ureter shows this characteristic thickening even in the early stages of the affection, while the bladder is very little if at all affected. As a rule, patients with renal tuberculosis are treated for years for cystitis or gynecologic troubles, and only the lack of success of these measures suggests some morbid process elsewhere. Even then, gallstones or some gonorrheal affection is thought of rather than tuberculosis. Early search for the thickened ureter will reveal the true nature of the trouble in time for promptly successful operative treatment.

92. **Puerperal Fever Cured by Removal of Uterus.**—In Vertes' case the infection was due to the staphylococcus which had induced a septic affection in the uterus, although not very virulent. Colonies did not grow until after forty-eight hours of cultivation. It is the first case in Hungary treated by removal of the uterus. The presence of a large myoma justified the hysterectomy. The chills did not recur afterward.

93. **Importance of the Appendix and Lymphatic Apparatus of the Intestines.**—Albrecht styles the appendix the "tonsil of the large intestine," believing that it is part of an important lymphocyte camp in the intestines. The main task of the apparatus, he says, is the supplying of antibodies in fluid and organized form. He thinks it probable that the lymphatic apparatus of the entire body produces antibodies against not only the pathogenic, but also the saprophytic bacteria of daily life. It is possible, he adds, that the formation of antibodies is only part of a more general reaction to organized matters.

Riforma Medica, Naples.

Last indexed, page 1485.

95 (XXII, No. 6.) Gallstones with Missing Gall Bladder.—Caso di calcolosi delle vie biliari e di assenza della cistifellea. V. Perego.

96 *Rare Forms of Typhoid Fever.—Ricerche cliniche e batteriologiche sopra alcune forme di tifo poco frequenti. A. Bruno.

97 (Nos. 7-8.) La diplococcemia nella pneumonite crupale. G. Memmi.

98 *Sulla narcosi cloro-morfio-scopolaminica. E. Lorenzelli.

99 Nuovo contributo clinico alla chirurgia dello stomaco. N. Glannettasia. (Commenced in No. 6.)

100 *Nuove ricerche sull' apparecchio tiro-paratiroideo. G. Lusena.

101 *Contributo all' etiologia dei reumatismo articolare acuto. G. Volpe.

102 *Contributo alla fisio-patologia del grande epiploon (omentum). A. Cernezzi.

96. **Unusual Forms of Typhoid Fever.**—Bruno analyzes 3 cases of typhoid with peculiar manifestations, and advocates puncture of the spleen as a valuable diagnostic aid in dubious cases. He never found it in the least injurious, while the findings were always decisive.

98. **Chloroform Morphin-Scopolamin Anesthesia.**—Lorenzelli reports the use of this method of anesthesia in 40 cases at Ferrari's clinic. The impressions were favorable. The absence of vomiting, the small amount of chloroform required, and the reduction of the patient's excitement and dread of the operation commend the method. The greatest inconvenience is that the dosage can not be individualized as the response of different individuals is not known. Another disadvantage is that the tongue is apt to drop back into the throat, and requires constant surveillance to prevent suffocation.

100. **Research on Thyroid-Parathyroid Apparatus.**—Lusena has been studying on dogs the physiopathology of the thyroid and parathyroid glands for more than eight years. His findings confirm those of others, especially in regard to the syndrome of severe intoxication which follows removal of the parathyroids alone and the attenuation of the intoxication when the thyroid is removed soon after, or pieces of parathyroids are transplanted into the animals or when parathyroid extract is injected or parathyroids ingested. These measures help the animal to survive the severe intoxication that follows removal of the parathyroids. He has found also that temporary obstruction of the circulation through the thyroid (less than six hours) has the same effect as extirpation of the thyroid in attenuating the manifestations of the intoxication that follows removal of the parathyroids. Suspending the functions of the thyroid for even a few hours enabled the animals to survive the height of the intoxication, and it gradually became attenuated afterward. His experiments all had positive results.

101. **Bacteriology of Acute Articular Rheumatism.**—Volpe has had constantly negative findings and thinks that none of the germs hitherto proposed can be accepted as the true cause of this disease.

102. **Absorption of Necrotic Kidney by Omentum.**—Cernezzi's experiments and research on the physiopathology of the omentum showed that it is capable of completely absorbing the kidney when this organ is excluded from the circulation and from its hilus and necrosis ensues. If the conditions do not favor this encircling of the kidney by the omentum and formation of adhesions, then the animal promptly succumbs to fatal intoxication.

Sei-I-Kwai, Tokyo.

Last indexed, XLV, page 1993.

103 (XXIV, Nos. 11-12). Experiments on Dogs During Kakke Investigation. Baron Takaki.

104 Experiences During Russo-Japanese Naval War, 1904-1905. S. Suzuki. Read at annual meeting of Association of Military Surgeons. See THE JOURNAL for Oct. 14, 1905, p. 1194.

105 (XXV, Nos. 1-2.) *Etiological Investigation of Scurvy. K. Okada and Y. Saito.

105. **Etiologic Study of Scurvy.**—Okada and Saito report the discovery of a special micrococcus in the blood in cases of scurvy, which reproduces the principal manifestations (hemorrhages) of the disease in animals. It has agglutinative properties, and they believe it to be the specific causal agent. They cite among other arguments as to the infectious nature of the disease, that physicians unanimously report that when a case develops all the persons occupying the same room with the patient contract the disease. On the other hand, those who keep their bodies clean and are well fed are not attacked by the disease. The micrococci proved very resistant to desiccation and cold, but succumbed readily to the action of steam and of carbolic acid (2 per cent.), corrosive sublimate (10 per cent.) and alcohol (30 and 50 per cent.).

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF THE ECLECTIC TREATMENT OF DISEASE. Designed for the Many Students and Practitioners, Who Are Now Diligently Searching for Knowledge of the Most Direct Action of Drugs, as Applied to Specific Conditions of Disease. By F. Ellingwood, M.D., Professor of Materia Medica and Therapeutics and *pro tempore* Professor of the Practice of Medicine in Bennett Medical College, etc. In two Volumes, Vol. I. Cloth. Pp. 455. Chicago: Published by the Chicago Medical Times Co., 1906.

OPHTHALMIC YEAR BOOK, Containing a Digest of the Literature of Ophthalmology, with Index of Publications for the Year, 1905. By E. Jackson, A.M., M.D., Professor of Ophthalmology in the University of Colorado, and G. E. de Schweinitz, A.M., M.D., Professor of Ophthalmology in the University of Pennsylvania, with 42 Illustrations. Vol. III. Cloth. Pp. 286. Denver, Colo.: The Herrick Book and Stationery Company, 1906.

CAUSE AND PREVENTION OF DENTAL CARIES. By J. S. Wallace, M.D., B.Sc., L.D.S., Hon. Dental Surgeon, West End Hospital for Nervous Diseases; and Assistant Dental Surgeon, National Dental Hospital, W. Cloth. Pp. 81. Price, 2s. 6d. net. London: Ballliere, Tindall and Cox, 1906.

ENTOPTIC VISION. By W. F. Barrett, F.R.S., Professor of Experimental Physics, Royal College of Science for Ireland. Scientific Proceedings of the Royal Dublin Society. May Paper. Pp. 88. Price, 1s. Dublin: Published by the Royal Dublin Society, 1906.

ARMY LIST AND DIRECTORY, OFFICERS OF THE ARMY OF THE UNITED STATES. May 20, 1906. The Military Secretary's Office. Paper. Pp. 103. Washington: Government Printing Office, 1906.

BIENNIAL REPORT OF THE DEPARTMENT OF HEALTH OF THE CITY OF CHICAGO for the Years 1904-1905. By Charles J. Whalen, M.D., Commissioner of Health. Cloth. Pp. 368. Chicago, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

Vol. XLVI. CHICAGO, ILLINOIS, JUNE 9, 1906. No. 23.

Address

THE MEDICAL PROFESSION AND THE ISSUES WHICH CONFRONT IT.

PRESIDENT'S ADDRESS AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT BOSTON, JUNE 5-8, 1906.

WILLIAM J. MAYO, A.M., M.D., HON. F.R.C.S., EDIN.
ROCHESTER, MINN.

The American Medical Association begins its fifty-seventh Annual Session under the most auspicious circumstances. After an interval of forty-one years it again meets in Boston, the guest of this great commonwealth which has ably upheld the highest medical traditions since the founding of New England.

Another cause of felicitation: The sectional differences in New York have been overcome and the Empire State, for the first time in twenty-five years, presents a unified delegation.

The House of Delegates of the American Medical Association (which technically is the American Medical Association) represents directly about 55,000 and indirectly the 120,000 regular practitioners of medicine in the United States. The official organ, THE JOURNAL, reaches each week over 43,000 subscribers, and, under the able editorship of Dr. George H. Simmons, has become the leading professional magazine in the world.

The medical profession is to be congratulated on these evidences of a useful organization, but much remains to be done. In his individual capacity the medical man has not been found wanting. Go where you will in civilized lands, you will find the physician self-sacrificing, patient and charitable, upholding the honor and dignity of his noble calling. Collectively medical men do not have the influence which we might expect and without which great movements for the welfare of humanity can not be carried on. A lack of unity has prevented a realization of our hopes, and if we are to gain and maintain the pre-eminent position to which we are entitled we must unite for the common good.

The present organization of the American Medical Association is but a beginning: we must further the interests of this body unselfishly, not for ourselves alone, but that we may better fulfill our sacred obligations to mankind. The people must be educated up to a point where they can understand the broad humanitarianism of modern medicine. Society appreciates the saving of a sick person's life by the skilled physician, but fails to see the priceless gifts to the human race made by preventive medicine and sanitary science. It views everything in detail and misses the perspective. We have failed to secure the support of the mass of the people to much-needed sanitary reforms, because we have appealed to them as one individual to another without the weight of an authoritative organization.

That the people are ignorant of medical affairs is due to bad education rather than prejudice. They are more than two decades behind advanced medical thought; it is our duty to keep them better informed. The theory of medicine did not contain the essential principles of a science until within the last quarter of a century. Originally a part of priestcraft, the profession had its beginnings in a time of mysticism and superstition. Anatomy, gross pathology and chemistry were among the early foundation stones which made progress possible. Clinical treatment was based on a very few specific remedies and a considerable number of drugs of proved value in the cure or alleviation of disease. But, lacking a sound theory of causation, the results were not much better in the average self-limited malady than those claimed by the various "systems" based on the giving of inert or useless remedies which, like the incantation of the Indian medicine man, kept the patient and friends interested until cure came about through natural processes. The public found that the large majority of sick persons got well under any, all or no treatment, and, not rightly understanding the reason, have never been able to comprehend why one method or form of treatment, as long as it apparently yielded about the same average of results, was not as good as another.

The germ theory promulgated by Pasteur and given surgical significance by Lister, strengthened our foundation by adding to it the long-sought-for causation of the majority of diseases, and this, with the aid of experimental research, has led the practice of medicine out of the wilderness and established it as one of the exact sciences.

New and fundamental truths have followed each other so rapidly that we have scarcely been able to digest them and much less can we expect the public to have kept pace. The layman's view is that of twenty-five years ago. He accepts with avidity new dogmas and "pathys" based on theories incredibly foolish in the light of modern investigation, and we have allowed him to become fixed in these beliefs. We have permitted the public to be educated by "patent-medicine" advertisements and the voluble charlatanism of the commercially interested. In return we are classed with these schemers, and efforts for the general good are believed to be selfishly inspired.

The Utopianism of our profession is too idealistic for ready comprehension in this commercial age. The time has come for the public to be taken into our confidence; if we wish better results we must enlighten the people, for with them lies the final word.

THE PROFESSION AND THE PUBLIC.

General sanitary matters of the greatest importance are becoming understood through medical influences. The public has been and is being educated in regard to the "great white plague," tuberculosis, and statistics are beginning to show the effect of this diffusion of knowledge. In Massachusetts and some other states a committee has been appointed in each district to promulgate measures for the relief and control of tuberculosis. This should be imitated in every state in the Union.

We can already see the good which has resulted from the teaching of the habits of mosquitoes, the short distances they travel from their breeding places, and especially the necessity for the quarantine of patients afflicted with yellow fever and malaria, not directly to protect mankind, but to prevent infection of the little pests who act as carriers of the contagious micro-organisms.

Society must be taught the early symptoms of cancer, the greatest foe of humanity, that its manifestations may be recognized while in the curable period. A propaganda of this kind, inaugurated by the profession of Germany, has borne fruit.

The typhoid-fever crime of cities through polluted water supply is not the least of the many branches of popular education. There is no reason why a man who has become infected with typhoid from a city's neglect should not sue for damages as he would for personal injury sustained from falling through a defective sidewalk. Unavoidable sickness is bad enough, but when we stop to consider that the life of the individual is worth $5,000 to the state, and that those who recover undergo great disability and expense, the continuance of unsanitary conditions is criminal. The experience of Vienna, which was converted from a typhoid center to one of freedom from such outbreaks by bringing in a pure water supply, has now been repeated over and over again in every civilized land. Yet hundreds of deaths from this preventable source yearly attest that the lesson has not yet been learned.

How can the work of education be best continued? The answer, as shown by our very efficient chairman of the Committee on Organization, Dr. J. N. McCormack, is through the local society. Occasional meetings to which the public shall be invited must be devoted to questions of general interest, and the proceedings published in the local newspapers. The county society must become the unit, and the allied professions of pharmacy and dentistry urged to attend and take part in the deliberations.

To the *Ladies' Home Journal* and *Colliers' Weekly* the public owe the successful crusade against poisonous substances and intoxicating beverages which are sold under the guise of "patent medicines," patent only in the sense that the name is copyrighted; the constituents can be changed at any time and in any way.

Do you think that our American mothers will continue to give "Kopp's Baby's Friend" and "Mother Winslow's Soothing Syrup" to their babes when they find that these mixtures contain opium and that instead of securing rest the little ones are narcotized and that many deaths are directly attributable to this cause?

Will the American people continue to use Bromo Seltzer and similar dangerous preparations to an extent which causes them to exhibit blueness of the skin surfaces from poisonous coal-tar products, or become victims of drug habits from cocain catarrh cures, when they discover the harmful and dangerous character of these agents?

Will our prominent people, statesmen, politicians, ministers and ladies of note continue to allow their photographs over signed testimonials to be published, telling their fellow-citizens how much better they have felt after taking Peruna, Warner's Safe Cure and the various Nervines and Tonics, when they find that most of these preparations depend on alcohol for the stimulating effects which they describe? The success of most "patent medicines" depend on the fact that they contain drugs and stimulants which create a craving and must be repeated. Once get the public conscience awakened and we will have a demand that every "patent medicine," before being sold, shall have its exact component parts printed on its label, and its claims to cure verified by scientific investigation. The action of the Postoffice Department in denying the use of the mail service to some of the worst offenders against common decency is to be commended.

PUBLIC HEALTH LEGISLATION.

One of the few misfortunes of the individual freedom afforded by a republican form of government is that it enables the most ignorant man, through prejudice, to interfere with and delay needed legislation, with the result that, by the time the law can be passed, the immediate object to be obtained has often disappeared.

In Germany compulsory vaccination has practically caused smallpox to disappear from the army and country, a person properly protected being immune. In the state of Minnesota inability to enforce vaccination in the late smallpox epidemic permitted, from a few sources, 27,876 persons to become infected with this disorder; all due to a small but vociferous band of anti-vaccination agitators.

Contagious disease in any place is not a matter of local or state interest alone, as the ease and freedom of transportation render local control impracticable and properly place it in the hands of the general government.

The keenness with which the American people are watching the affairs at Panama argues well for the future. The communication of Dr. Charles A. L. Reed awakened public interest. His portrayal of red tape and obstruction to sanitation in the Canal Zone has resulted in obtaining for that most able army medical officer, Colonel Gorgas, power to carry out the necessary reforms and has made the Canal Zone the most sanitary place in Latin America.

Compare our record in the Spanish-American War with that of the Japanese in the war with Russia. We had 14 deaths from disease to 1 from wounds and more than 95 per cent. due to disregard of the simplest problems in sanitation—therefore, unnecessary and avoidable. In the Japanese army there were 4 deaths from wounds to 1 from disease, a difference of 56 to 1. This was not due to the fact that the Japanese had superior knowledge, but that their medical officers were thoroughly organized and in sanitary matters were supreme. The knowledge which they used was obtained in western institutions and was the product of the Occidental, not the Oriental, civilization.

The army and navy medical departments have worked intelligently against overwhelming odds. Their individual members have international reputations honestly achieved. Their schools for the special training of their men are in the highest degree efficient and deserving of every praise; but the departments have been so small as to be unable to act even as nuclei about which in time of war competent forces could be gathered and the militia of our country enter into conflict fearfully handicapped. The indications, however, are that these matters will now be rectified, and if so it will guarantee to the patriotic American that should he again be called on to serve his country his enemies would be in front and that he will not be destroyed by his own side through neglect of sanitary laws.

The United States Public Health and Marine-Hospital Service has been and is doing splendid work in sanitation. Its skilled investigators have revolutionized quarantine measures and have placed preventive medicine on a solid basis. Their powers should be extended so that such unnecessary outbreaks as occurred in New

Orleans shall not be repeated. They should be given control of national quarantine in all its phases.

MEDICAL EDUCATION, STATE LICENSURE AND RECIPROCITY.

What is needed is a higher standard of requirements and more and better supervision of professional schools. The Council on Medical Education is working hard and is now in a position not only to show what should be done, but to initiate needed reforms. No more important work has ever been taken up by the profession. At the present time medical education is uncontrolled and each state has its own standard of requirements. We can not rid onrselves of dogmas and "pathys" until we can secure a universal primary law as to the minimum amount of knowledge on fundamental branches. To accomplish this the American Medical Association must co-operate with and encourage medical colleges to do better work. The profession owes it to itself to investigate in some manner what the schools are actually doing and to make it known whether or not they fulfill their obligations to the student. No well-conducted college could object to such reasonable supervision.

Another question of great importance is that of reciprocity in medical license. The conditions now are wellnigh intolerable and restrain the individual freedom guaranteed by the Constitution. The boundaries between states are imaginary lines; yet a physician on one side of a border can not relieve human suffering on the opposite side without becoming amenable to the law or subjecting himself to vexatious examinations which he has already successfully passed in his own state. This must be met and speedily by agreement between examining boards as to the minimum of requirements. After all, this is but a part of the educational problem. If we could solve this, licensing boards could at once adopt more uniform examinations and reciprocity.

RELATIONS TO INSURANCE COMPANIES, CORPORATIONS, ETC.

We come now to consider some abuses from which the physician suffers. It is a matter of professional pride that, in the general condemnation of the life insurance companies, although every other part of the control has been shown to be corrupt, no breath of scandal has touched the medical department. Yet the local examiner has the most cause of all to be dissatisfied. The New York Life, some years ago, cut the fee for examination 40 per cent., apparently not as a matter of economy, for at that time the most corrupt practices existed, but rather to enable the agent more easily to pass "new business" at any cost. This action has lately been imitated by the Equitable and some others and has resulted in forcing the resignation of many of their best examiners. The general officers have taken great credit on themselves for voluntarily reducing their salaries 20 per cent. It is a rank injustice that the one body of men who have emerged clean from the insurance scandals should suffer the most for the crimes of others. A thorough medical examination to prevent fraud by the admission of unsafe risks is essential. With few exceptions the line companies pay a fair fee and less should not be accepted. The casualty companies, such as the Maryland, are the worst offenders, and some concerted action should be taken to compel them to mend their evil ways.

Lodge practice is another scheme by which officers of an association draw salaries ostensibly to give medical services at a figure below the possible point at which a professional man can live and continue his education. The people are badly served, as competent physicians can not be secured to do the work, and the whole scheme is properly condemned by the various medical associations all over the country.

Public service corporations abuse hospital privileges in a way that is no more or less than an open scandal. In Pittsburg the steel companies pay $1.00 a day for the care of their injured men at the hospitals, and for the class of patients under discussion this can not be provided for less than $1.60 per day. The companies pay the surgeons at the hospitals absolutely nothing for their services to its injured, which amount to thousands of dollars a year. The same condition exists with many of the large railroad and street car companies and other public corporations.

Hospital abuse by patients who are able to pay, through the neglect and indifference of the trustees, is prevalent, and thereby the profession is robbed of just returns for labor and the funds of charitable persons misused to an extent which is almost beyond belief. All hospitals should have competent individuals whose business it is to see that no one secures free treatment who is able to pay.

Some great hospitals go still further and receive any patient, rich or poor, allow him to have a suite of rooms and bath and several nurses if he can pay for the same; but will not allow him, even if he is willing to do so, to pay the surgeon who operates on or the medical man who takes care of him. If the patient is disposed to be more just than the trustees of the hospital, he can do so only by giving a gratuity at Christmas, as would be done with a servant. Such indignity should be resented by every right-feeling man.

It is a misfortune that the large majority of hospitals have no physicians among their directors. Hospital management is often extravagant and wasteful, due to official influence in furnishing comfortable berths for incompetent relatives or unfortunate friends in some salaried executive position.

Fortunately the list of grievances is not large, and I believe that they can be harmoniously adjusted if taken up with the proper authorities in a conciliatory spirit. Our first object must be to see that no poor person shall be subjected to the slightest inconvenience or annoyance and that every worthy charity shall have our united support; but we must look to it that the charitable practitioner's time, knowledge and skill shall not be misused.

THE PRACTICE OF MEDICINE AS A BUSINESS.

It is a hard matter to adjust the financial side of the practice of medicine; that doctors are poor collectors and bad investors is a notorious fact and makes them the easy prey of the various investment "gold bricks." A physician owes it to himself, to his family, to his profession, and especially to the community at large, to manage his finances well. Otherwise he can not pursue his studies and give to the sick his best efforts, which they have a right to expect and demand. No sensible man enters on a medical career with a view of making money. I have never known a physician who has become rich solely from this source, and it is better so, for beyond that reasonable competence which leaves him free to pursue his life work the care of money interferes with the highest aims of the true physician, and few who have been burdened with wealth have reached their ideal in a calling which makes no distinction between the rich and the poor.

One of the demoralizing tendencies in this commercial age is the money standard of success. Physicians are not called or chosen; accident or environment brings about their choice of profession. While professional life

broadens the mental horizon and increases sympathy, it can not change man's nature, and men who are unfair in business affairs are to be found in our midst.

The one crying evil, which fortunately is not widespread, is the giving of commissions—in other words, the selling of the confidence which the patient has in his practitioner—to some specialist who will divide the fee in return for reference of the case. The one secretly takes money from the patient without his consent, and the other, in order to complete the bargain, charges more than he should. This is equally harmful to the one who receives and to the one who gives. Such matters can not be kept secret, and I have personal knowledge of men of good attainments and remunerative practice who have been ruined through losing the confidence of their communities by this pernicious traffic. Some attempts have been made to justify it, but the very fact that it is secret shows that both parties are ashamed to have it known and is an acknowledgment of its moral obliquity.

Our relations with the allied profession of pharmacy are not on as ethical a footing as they were twenty years ago. Then the druggist was the faithful friend of the physician. To-day, in putting up from 50 to 60 per cent. of the prescriptions sent to him, the educated pharmacist can not use his skill as a chemist, but simply acts as a distributor of copyrighted preparations which the physician calls for a few times only to take up with something new and leave the shelves of the druggist filled with the unused remnants.

Many physicians compound their own prescriptions, to the detriment of the pharmacist. The proprietary medicine people have managed this very cleverly; to the medical profession they are continuously calling out that the druggist is "substituting;" with one hand they have given the physician remedies to dispense himself, and with the other furnished the druggist with "patent medicines" with which to compete with the physician, and these two natural allies have drifted apart. The average pharmacist can not live on physicians' prescriptions alone, but he should be treated justly, and both physician and druggist would profit by mutual concessions to the great benefit of the public.

The higher grade of pharmaceutical houses already see the danger to honest pharmacy in the forced promotion of "ethical" and fake nostrums under catchy names, and it is to be hoped, in the future, will confine themselves to the open compounding of legitimate preparations; and these and these only should be found on the advertising pages of reputable medical journals.

MEDICAL PROGRESS.

Graduation from a college is merely a commencement of a life study of medicine. Therefore, young men without special training under competent teachers should not be encouraged in wanton assaults on major surgical diseases unless justified by necessity. The future will demand schools for advanced training for those who desire to do special work.

The recent graduate in medicine should begin in his county society by contributions to the newer methods which will be interesting to the older men. This should be his kindergarten; from there he will carry his papers to the district meetings; and at the end of five years he will be competent to bring useful material to the state society and later to the sections of the American Medical Association.

In the practice of medicine the student days are never over. There is so much to be learned that a long and industrious life leaves one with the feeling that he is but a beginner. The most important habit a young physician can form is the "daily study habit." Let him put in even one hour a day with the reading of journals and books of reference and much can be accomplished. He should keep an account of the time, and if something interferes for a day he should charge himself up with it. A two weeks' vacation means fourteen hours to be made up. Most men can do more, and no man has a right to do less, no matter how busy he may be. The leaders in our profession make a daily average of five or six times this amount of study the year round, in addition to the demands of an active practice.

The practitioner must make frequent trips away for the purpose of observation. In no other way can he avoid the rut of self-satisfied content, which checks advancement and limits usefulness. No amount of diligence as a student can take the place of personal contact with men in the same line of work.

What are the rewards of so laborious a life? They can not be measured, because there is no standard of comparison. To realize that one has devoted himself to the most holy of all callings, that without thought of reward he has alleviated the sufferings of the sick and added to the length and usefulness of human life, is a source of satisfaction money can not buy. I know many a man grown gray in the profession with little of a tangible nature to show as a result of his work, but who is not only contented with his lot, but proud to have served in the ranks, and who looks back on a life of privation and hardship for the benefit of humanity as a privilege which he is thankful has been vouchsafed him.

Let us continue to strive as individuals for the honor and dignity of our profession. In this we but follow out the aims and ideals of those who have gone before and prepared the way. But the great movements of the future can not be brought about by individual action. They must be initiated and controlled by united effort, and in no other way can the epoch-making truths of preventive medicine be made to bear fruit. Unity is the spirit of the times; it marks the difference between the old and the new.

The vital need of the medical profession is a harmonious organization—an organization that will encourage right thinking and good usage among ourselves, help to secure needed medical reforms, compel redress of grievances and promote and encourage the highest interests of its individual members; and in this lies the future usefulness of our profession as a whole.

Orations

THE NATURE AND PROGRESS OF MALIGNANT DISEASE.

ORATION ON SURGERY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

JOSEPH D. BRYANT, M.D.

NEW YORK CITY.

My first words are words of thanks, profound and sincere thanks, addressed to my colleagues of the American Medical Association because of my estimation of the high honor conferred in inviting me to address you on this occasion. My first desire, the dominating desire of earnest appreciation, is that I may say something that will justify the choice of my colleagues and my presence before you. My first hope, the fond hope which I most cherish at this time, is that some one who may be influenced by what I shall say will gain in comfort and

life thereby; for, be the gain but little, even then those who are accessory to my presence may claim acquittal because of it.

Since it may not be known to all here present, I am prompted to say at once that, some time during the course of the meeting of this Association, an address, denominated "An Oration on Surgery," is a part of the scientific proceedings. In this instance it is not my intention to attempt a review of the whole field of surgery, nor even of a year's experience, but, instead, to devote the brief time given me to the consideration of a surgical topic which to-day is engrossing more of the time and energy of scientific medical endeavor than is any other subject in the entire range of surgery. Hence the topic of the evening, "The Nature and Progress of Malignant Disease."

It seems not unfitting, in a city whose early resistance to the oppressive encroachments on human liberty awakened the demand for American freedom, that an earnest warning should be voiced against the advancing encroachments on human comfort and life of a malevolent disease which obviously afflicts with dire results, all classes of vertebrate beings. The expression, malignant disease, is used here in the general sense, just as later the term cancer will be employed. It is better thus than to attempt to speak of the varieties of malignant disease, since only a general idea of its nature and progress can be considered in the comparatively short time allotted for the purpose.

Cancer is a general and not a local variety of disease. The field of its activity is quite as extensive as is the world itself. The vertebrate order of creatures is more or less afflicted with cancer throughout the entire classified series. The highest vertebrate orders of life suffer from cancer more than do all other orders combined. The civilized and the domesticated classes of higher rank suffer more from this form of infliction than do those of lower rank, or of the natural state. Mankind everywhere pays distinctive vital tribute to this disease; not, however, in equal proportions, but in accordance with the standard of the civilization of which he is a part. The higher the standard the greater is the contribution to malignant fate; the humbler and more natural the standard the less onerous is the demand. The rulers of mighty nations and the humblest human factors of savage existence, each in their respective ratios, succumb to the mysterious lethal influences of cancer. Also fish and flesh, staple articles of food of man, each in a varying measure, is the abode of malignant action, and more especially is the latter class thus afflicted. The fish of pure streams and ponds and those of salty habitations are in no small degree the subjects of cancer. The genteel trout and the beneficent cod are examples of this fact, respectively. Even the invertebrate oyster in one instance is widely reported to have yielded to malignant change.

The myriads of oysters subject to the scrutiny of hosts of gustatory and scientific observers for many years, with apparently but one reported instance of malignant disease under all of these circumstances, suggested to us the idea of reviewing the facts in this particular case. A careful examination was made, therefore, of the acknowledged record[1] of the case the recital of the chief points of which merits your indulgence at this time. It appears that the late Professor Leidy, the famous anatomist of Philadelphia, came into possession of an oyster having a large tumor of the soft parts which he presented to the late Professor Ryder in January, 1887. In commenting on the growth at that time Professor Ryder spoke as follows: "The tumor seems to have been benign in character, as the oyster in other respects appears to be healthy." A description of the tumor of quite minute and apparently of microscopic kind is reported along with the above statement, which is now regarded by competent authority[2] as being congenital, thus sustaining the belief in benignity expressed by Professor Ryder at the outset.

I consider it proper to enter thus fully into the merits of this specimen, since, for some reason, it has been regarded as the first and perhaps the only proof of malignant invasion of invertebrate life. We will now return to the main channel of the discourse.

The flesh of cows and oxen is the seat of cancer in the unsuspected proportion[3] of 2 per 1,000, as is revealed by the careful inspection of their slaughtered products. The young animals, however, of divers kinds, exhibit no such evidence under these circumstances.

Advanced age, both real and comparative, sets the pace of malignant progress, especially in mammals. Real age numbered by many years, and comparative age numbered by fewer, each alike invites the presence of cancer. And, too, in tissues of the human body this same age peculiarity is noted, those whose life's duty is ended, whose full years of usefulness are reached, become the frequent prey of cancer, while other contiguous tissues endowed with later function and those of the body at large remain in a healthy and useful state. In this connection it may be said that youth and youthful tissues comparatively seldom hold communion with cancer.

For a long time the solution of the problem of malignant disease has been uppermost in the minds of many of the best students of pathologic phenomena in the medical world. During the last few years the efforts directed to the solution of the mystery of malignancy, stimulated by the thought of the possible parasitic nature of the disease and the apparent increase in its extent and activity, have been markedly extended through the logical efforts of special commissions established for the purpose. Commissions organized under the patronage of crowned heads and public dignitaries of exalted station, and conducted by medical and lay minds of superlative attainment, supplemented by unlimited opportunity and ample financial support, are searching the animal world in the effort to shed light, beneficent light, on the mystery of cancer. In England and Germany especially, the resources of the governments and the sympathetic support of the King and the Emperor, respectively, are directed to the benevolent purpose of determining the origin and the true nature of malignant disease. Also in this country notable institutions of learning are patiently engaged in the efforts to accomplish the same purpose. Individuals of eminent attainment are of themselves fighting in the battle along lines of their own selection with the same object in mind. Laymen of munificent means, prompted by humane motives or perhaps by personal dread, offer bountiful endowments for the discovery of the nature and the cure of cancer. The thoughts and efforts of the civilized world, as represented in scientific medical attainment and benevolent endeavor, are to-day mainly centered on securing the control of tuberculosis and on determining the true nature and the cure of malignant disease.

1. Proc. of the Academy of Natural Sciences of Philadelphia, 1887, p. 25.

2. Profs. E. K. Dunham and Harlow Brooks.

3. Imperial Cancer Research Fund (Bashford).

It is proper to say, I believe, that the widely separated instances of cancerous infliction as noted between the civilized and barbarous peoples, between the dwellers in the flesh and salt media, and between the lower classes of mammals seem to indicate forcibly that the circumstances of human life in the civilized state have not given origin to cancer, although they may have added much, indeed, to its frequency.

That cancer is a distressing part of the history of the animal kingdom can not be gainsaid. And, unfortunately, the more comprehensively and critically the investigations relating to it are carried forward the more widespread it appears to be. As already expressed, mankind in the civilized and also in the undeveloped condition suffers from cancer, and it is probable that no race or condition of the human family is entirely exempted from this infliction. Also no organ or tissue of the human body is entirely free from its visitation. The dumb companions of man are similarly afflicted, but in a less degree, and it is altogether probable that as the search progresses along the various lines of animal existence malignant manifestation will appear now and again, reminding us, perhaps, that the penalty of the violation of a universal law of development of organized beings is relatively promptly enforced on the object or on the part concerned in the offense.

In this connection it is not amiss to heed the fact that experimentally and practically the transmission of cancer from man to animals or from one animal to another of different species has not yet been successfully witnessed beyond gainsay, notwithstanding the repeated attempts to attain the purpose and the results of long critical observation. On the contrary, the apparent transmission of cancer between animals of like species and its unquestionable extension by metastasis in those already afflicted is of common knowledge.

The vegetable kingdom suffers at times and in isolated places from a form of local progressive disease apparently akin in nature to the malignant characteristics of the animal economy. In fact, the realization that these peculiar vegetable afflictions were caused by a parasite in many instances prompted the renewed suggestion on the part of Hutchinson that similar appearing growths of human origin might later be found to depend on the presence of parasites. Since that time, more especially during the last fifteen years, the contention in this respect between the supporters of the parasitic and non-parasitic ideas regarding this disease has been continuous and spirited, and as yet without a generally satisfactory conclusion.

It is no part of the purpose of this address to discuss the various theories relating to the nature of the inherent cell activity characteristic of cancer, or of any other form of malignancy. To the members of the medical profession here present such a course would necessarily be inconclusive and disappointing. To those of the lay order whose feeble hold on technical expressions would present insurmountable difficulties of appreciation the result would be the same. Moreover, the chief aim of this discourse would be missing and, besides, as is expressed in a well-known play:

> "The result is a very pretty quarrel as it stands;
> We should only spoil it by trying to explain it."

The period at which this contention will be ended is too uncertain to merit other than hopeful anticipation, and too important to be neglected in any respect in opposing malignant advance.

The time when malignant disease first appeared in the path of human existence and added its insatiate affliction to the burden of human suffering can not be stated except in a general way. It is fair to presume, however, that at a definite period of early recorded time malignant activity in some form was present and contributed its portion to the physical distress of the age. But it is difficult, indeed, to find ancient documentary evidence of cancer in such countries as India, China, Egypt and Greece, despite the fact that their medical literature is quite extensive, especially that of Egypt, whose medical records contain descriptions of great antiquity, comparing favorably in forms of phrase and detail with many of those of the present day. Nor can the ancient history of cancer be correctly written at this late time, as it would not be possible to distinguish between cancer and benign tumor, on the one hand, and between ulcerated cancer and other severe forms of ulcer, on the other.

The comparatively limited knowledge in diagnostic discrimination at that time, as expressed in written characters, forbids the forming of definite conclusions in diagnostic purposes. It is apparent, however, that the ancient Greeks had a very good clinical idea of cancer, as a modern Greek writer, Couzis of Athens (1903), in reviewing the past history of Greek medicine, says that the practical knowledge of the Hippocratic school was not inferior to that of his own day. The works of Hippocrates (460-370 B. C.) barely mention cancer, stating in connection with the treatment that "deep-seated forms are best untreated, for if treated the patient soon dies; otherwise he may hold on for a long time." It is not difficult for us of the present day to comprehend the full significance of this statement, as no doubt a few of us, at least, have witnessed the exemplification of this ancient expression written quite 2,300 years ago. The old Greeks described fully the various distinguishing characteristics of cancer, noted the clinical differences in its various phases, portrayed quite accurately cancerous metastases and prescribed treatment not differing, especially in the palliative sense, from that in use at the present time. Galen (131-201 A. D.), in his extended works, considered cancer quite fully in its important aspects. But from his time to that of Ambrose Paré (1517-90 A. D.) little of special significance was added thereto.

Many of the notions entertained regarding the nature of cancer since Hippocrates' time seem droll to those whose enlightenment on the subject of bacteriology is a matter of recent years. The Galenic notion—probably that of Hippocrates—attributed cancer to the local effect of "overheated and unusually acrid 'black bile' that can not be purged away." Paré ascribed cancer to the effect of improper diet influencing unfavorably the liver and spleen, followed by "a shutting into the part to be attacked of thickened acrid black bile." The emotions, anger and hate, aggravated the condition, he said. Harvey (1578-1657), the discoverer of the circulation of the blood, regarded cancer as a parasite on the body, living an independent existence at the expense of the latter.

John Hunter (1728-1793) seems to have been the first to recognize the influence of traumatism as a causative factor of cancer, aided by the consequent exudation of coagulable lymph into the interstitial tissues.

Many attempts to inoculate cancer date from the experimental period inaugurated by John Hunter. And early in the nineteenth century positive results were reported and the parasitic doctrine became prevalent. The era of pathologic anatomy, which culminated in the histologic studies of Müller and Virchow, at first fa-

vored the idea of the parasitic nature of the cancer cell, but ultimately condemned it when Virchow showed, as then appeared true, that cancer cells were derived from pre-existing normal elements.

From this period to the present day, theories regarding the nature of cancer have multiplied to a bewildering extent. The two extremes at present are the following: (1) That cancer, like many other morbid processes, is due to a micro-organism; (2) that cancer represents a morbid proliferation of certain normal cellular elements as the result of diminished inhibitory action.

A few words more relative to the parasitic theory may not be amiss at this time. The view that cancer itself is a parasite was expressed by Harvey in 1651. By Dupuytren in 1805, Laennec in 1816, Cruveilhier in 1827, and Lobestein in 1829, all adopted this view as part of their teaching of pathologic anatomy. A little later the positive results of inoculation experiments were recorded, seeming to confirm the view, and Müller's description of the histologic elements of cancer in 1842 give a remarkably clear exposition of this theory, making the cancer cell the actual parasite which, if implanted in sound tissue, caused a cancerous growth. The question of transmission of cancer, however, remained unsolved, for it was then believed that cancer cells in the natural state could live but a short time outside of the body, and that their great size seemed to preclude their being taken up by the ordinary ports of entry. Also cancer did not appear on abraded surfaces, but in the parenchyma of tissues. In the face of these facts the parasitic origin appears to have languished, and to have been superseded by the later teachings of Virchow and others which derived cancer from pre-existing normal elements.

It was quite apparent at an early period of investigation that the study of the nature and activity of this disease could not shed substantial light on the problem of its control, when based alone on the few cases falling under the notice of a small number of individual observers. The logical corollary of this situation laid the foundation for statistical inquiry and collective investigation. It was not, however, until a comparatively recent date that statistical knowledge attained sufficient rank in this regard, to arouse apprehension respecting the presence of cancer. In fact, it was not until the possibility of its being of a parasitic nature was again set forth, and the fact that perhaps it was communicable, that observers of cancer were impressed with the acute sense of a new danger.

It should be stated, although perhaps superfluous, that the deductions based on statistical estimates are not always conclusive, except perhaps to the minds of those whose contentions are encouraged or supported by the calculations. A preconceived notion relative to a disease, or a prejudiced opinion regarding it, can usually gain substantial comfort from the study of plastic statistics. The product of the data may be "very like a camel," "or a weazel," or perhaps "like a whale," accordingly as a biased statistical Polonius may fancy. One has only to keep pace with the conflicting deductions often drawn from isolated examples of statistics, whether amended or not by additional knowledge, to realize the wealth of uncertainty that frequently attend statistical conclusions. Especially is this true in the instances of afflictions with subtle natures and divers environments such as characterize cancer.

The geographic and time-of-life distribution of cancer especially concern statisticians and sanitarians. The anatomic distribution appeals directly to practicing physicians and surgeons. The local occurrence-center-feature of the infection invites the reflections of pathologists and students of morphology. Geographically considered, cancer, as already stated, is a heritage of the human race in nearly all, if not in all, parts of the world. While it is yet unknown in some parts of South Africa (Snow) and other obscure places, it is not at all certain but that it exists, remaining hidden, however, from civilized view, because of the restraining influence of some heathen conception relating to it; especially as such conceptions have before this time thus controlled the doings of savage or superstitious peoples in other matters. Among the chief objections to the scientific value of statistical facts relating to cancer may be mentioned the inability to secure authentic complete diagnosis. The statement that a growth is malignant, when determined only by macroscopic examination, is so often fallacious as not to merit scientific confidence. Only microscopic reports of morbid growths should be given the privilege of membership in the rank of trustworthy data. I am aware that there are not a few distinguished observers who to-day seem to place quite as much confidence in the macroscopic findings of experience—their own experience—as in the conclusions of those with equal experience whose senses are fortified by the mechanism of a more exact knowledge. In any event such reports as these should be classed by themselves, unless confirmed by reliable microscopic testimony. According to the report[3] of qualified authority, the frequency of error thus arising is 7 per cent. in accessible growths, and for apparent reasons is increased when the growths are deep seated.

The undoubted increase in human longevity of recent time adds many, indeed, to the list of those who from augmented years fall within the age limit of cancer attack, and thus apparently increase the spread because of a seeming greater morbid activity. And, too, it should not be forgotten that many from without seek harbor in a city for the relief which its hospitals and extended experience afford, some of whom, unfortunately, add their sad contribution to the city's death rate from cancer. On the other hand, the life-saving means now employed in defending and rescuing the young from the baneful onset of infectious disease, is increasing the number of the living, and, therefore, neutralizing proportionately the apparent increase in death from cancer.

It is not impossible that the significance of the so-called "cancer localities" may be reduced to the standard of other fields of importance, when subjected to closer analyses of circumstances that are no essential part of cancer development or propagation. It is certainly evident that the slow and continuous increase of cancer, regardless of preventive measures and of human understanding is controlled by influences of such subtle kind, as thus far to perplex beyond satisfactory solution, the minds of the most astute observers.

The relative extent of cancer invasion of the accessible,[3] of the inaccessible, and of the intermediate parts of the human body in England and Wales during a three-year period affords an interesting study of this disease of great apparent significance, as will appear a little further along. Those superficial parts of the body falling readily under the scrutiny of the unaided eye and the touch of the physician are manifestly the seat of accessible cancer. Those deep and internal parts of the body, conveniently placed beyond the limits

of unaided vision or mere touch, are the sites allotted to inaccessible cancer. Those portions of the body within the reach of the finger and aided inspection are, for the most part, the sites of intermediate cancer.

The development of cancer of the parts included in each of the foregoing divisions of the body, is comparatively much less manifest in individuals under 25 years of age, than in those above that period, standing in this respect nearly as 1 to 70. The male sex suffers nearly 22 per cent. greater infliction from malignant disease than the female, during this time, which can be accounted for in part, I think, by the greater strenuousness of the male and the effect of the exposures incident thereto. The probable reasons for the greater infliction of the sexes under, than over, 25 years of age, it seems to me, have been considered sufficiently already.

The comparative difference between the frequency of occurrence of accessible and inaccessible cancer in both sexes, under and over 25 years of age is astonishing, even when proper deductions are made for the greater uncertainty of diagnosis in the latter kind. Inaccessible cancer in males of 25 years and under is 80 per cent. more frequent than the accessible kind. Inaccessible cancer in females of 25 years and under is nearly twice as frequent as accessible cancer. Inaccessible cancer in males above 25 years of age is three times more frequent than the accessible variety. Inaccessible cancer in females above 25 years of age is about 2¼ times more common than accessible cancer. Inaccessible cancer in males regardless of age, is approximately three times more frequent than the accessible variety. Inaccessible cancer in females, irrespective of age, is 2 1/5 times more common than the accessible. Inaccessible cancer is, without regard to age or sex, a trifle more than 2½ times more common than cancer accessibly located.

While it is now, and has long been conceded, that external influences, traumatic and otherwise, contribute to the frequency of accessible cancer in a greater or less degree, it is also self-evident, I think, that other and more potent agencies than these must be invoked to account not only for the occurrence of inaccessible cancer, but also for its great preponderance over those accessibly located at all periods of life, more especially the dominant one, that above 25 years of age. The increase in cancer visitation, in connection with advancing years, has long been a matter of common knowledge. But that the location of cancer, at all times of life and especially in adult life, should be of inaccessible, rather than of accessible nature, is more than remarkable, it is even startling, suggesting in no common tone the idea that, directly or indirectly, subtler influences than external traumatism or infecting agents can exercise are active in the development and spread of cancer. Perhaps it may be consistently said that the traumatisms thoughtlessly inflicted on the gastrointestinal tract by the yielding to the temptations and pleasures of life—while less emphatic than those directed to the external surface—are none the less potent for evil because of the fact that their frequent and prolonged action may increase correspondingly an ill effect. However this may be, it appears quite reasonable to some that cancer organisms coming somewhere from without, implant themselves in the tissues and develop there, notwithstanding the inhibitory effect of cooking, the power of digestion, the opposition of phagocytosis, and the fickle element of chance.

It is fitting now to remark that there appears to be no good reason to believe that the food of a people influences their relation to malignant disease in an appreciable degree.

Intermediate cancer in both sexes under 25 years of age is about half as frequent as is accessible cancer in both at the same period, possibly showing thus early in life the benign effect of protection of the intermediate parts from ordinary external influences. In the male after 25 years of age, intermediate cancer shows a comparative decrease in rate from that of the accessible form of about 32 per cent., suggesting that the evil effect of external influences are superior in potency or greater in number in the male than are those causing intermediate cancer. In the female during this period (after 25 years) the rate of accessible cancer exceeds that in the male by about 37 per cent. The intermediate variety, however, at this time in the female exceeds the accessible form by more than 48 per cent., showing the rapid increase in the intermediate variety due to pelvic disease, which can not be attributed in any practical degree to infection, but mainly to the traumatisms of maternity and the age limit of certain near-by tissues. It should be stated in this connection that the liability in both sexes to cancer of the gastrointestinal tract, gradually and quite uniformly diminishes from the stomach downward toward the external opening, but not including it. This fact seems to justify the thought already stated regarding the possibility of the effect of dietary traumatism on the stomach and the upper intestinal tract.

The age limit of the tissues of the stomach in health conforms to the nutritive requirements of the life to which they are all important, consequently this feature of the causation of cancer, which so freely contributes to the total of this disease in the mammary gland and the uterus, can play no part in the causation of cancer of the stomach, making it, therefore, the more apparent that alimentary traumatisms and dietary abuses are dominant influences in the causation of gastric cancer. Another fact which seems to confirm this position is that cancer in the male in the alimentary canal is quite seven times as common as in the female, notwithstanding the further fact of the general tendency of females to suffer from cancer of the alimentary canal at an earlier age than males. Surely, if cancer of the stomach were dependent in an appreciable degree on parasitic infection of alimentary substances this great difference in the relative proportions of infliction of the sexes should not exist. Finally, in males 80 per cent.[4] of all cancer affects the alimentary canal. In females 80 per cent. of all cancer affects the reproductive tract, including therewith the breast.

It seems that not a little that has been said in this relation is corroborative of the belief of those who regard cancer as a non-parasitic disease, which, in any circumstance, is not communicable.

A longer continuance in theoretical indulgence would necessarily deprive us of the opportunity of speaking in an emphatic manner, of an exceedingly important practical part in the contest against malignancy. This statement is prompted by the facts, that cancer appears to be on the increase in civilized countries, and also that the limit of effective operative therapy, the only agent of cure of general settled repute, has already quite reached the confines of highest efficiency, under the present established lines of action. It naturally occurs to thoughtful members of the profession, therefore, to enquire regarding what can be done by way of admonition and protective forethought, that will secure the holding of that already in hand, while the search for increased power in

4 Middlesex Hospital Reports, 1905.

curative therapy is advanced, let us hope, to a more successful issue.

As in any other field of human contention, so here the resources of every avenue of effort should be determined with care, and utilized with vigilance and pertinacity. The operative warriors in the conflict against malignancy, have striven faithfully and logically during the last years of the struggle, gaining advanced foothold by means of approved technic and prompt aggressiveness. By these masterly means in the cure of cancer of the breast, of the uterus and of the stomach, many, many years of comfort and happiness have been added to the lives of the afflicted and given to those who rejoice because of their preservation. These striking illustrations of cure in organs so profoundly concerned in the inception and preservation of life, are also an earnest of the outcome in other fields of operative endeavor in this respect. Unhappily, our fond anticipations of approaching relief, encouraged by this gain on malignant disease, are so often demolished by the ruinous delay of the afflicted, in utterance and action, as well nigh to arrest the increasing hope from operative measures. Too often, indeed, during the consideration of operative interference is heard the utterance of the sad truth, "too late," "too long deferred," and the like, on the part of all concerned. The remedy for this lamentation is prompter surgical action; and prompter surgical action requires a prompt acknowledgement of the presence of an unwelcome growth or manifestation on the part of the sufferer, supplanted by earnest co-operation in diagnosis and treatment.

It is surely not amiss to repeat, that the outcome of operative endeavor in malignant cases, has well nigh reached the highest possible success, unless aided by increased faith and lessened secretiveness on the part of the sufferers from a malignant infliction. Those who are afflicted with accessible growths are comparatively early aware of the presence of these unwelcome visitors. And when they shall have exercised the same degree of resentment because of physical intrusion on the part of a growth, as commonly distinguishes social or business intrusion on the part of a meddler, then, indeed, will much be gained for increased success in the struggle against malignancy. Since it now appears that cancer is located most often in the deep internal parts, beyond the safe limits of unaided sight and mere touch—(inaccessible cancer) 2½ times more frequently than is accessible cancer, regardless of age or sex, then, indeed, is the fact doubly impressed, of the necessity for prompt acknowledgment of the presence of morbid manifestations and prompt determination of their nature. The handicap imposed by inaccessible cases because of their greater distance from the surface, often enables the disease to advance undiscovered to a degree forbidding operative action when their presence is finally known. In too many instances of cancer, especially the inaccessible kind, the reasonable suspicions of its presence on the part of the patient or friends, are quieted by the soothing platitudes of medical advice, until all opportunity of relief is at an end. The physician and the surgeon should join in the observation and treatment of all such cases as these, early fostering a mutual plan of action that contemplates prompt explorative investigation in doubtful instances, and forbids delay in those of undoubted character.

It is "carrying coals to Newcastle" to state in this presence, or in that of any medical gathering of the present day, that cancer invades contiguous tissues early in the course of its development. How early no one can know. How late no one can tell. Of this, however, we are assured: Malignant activity is measured by the inherent nature of the morbid process, or by the receptive character of its host, and sometimes by both, and unfortunate indeed is the patient who is the helpless victim of both of these influences. But, on the contrary, correspondingly fortunate is one in whom each af these influences is at a minimum. A knowledge of such facts should admonish us to be charitable on the one hand, and discreetly aggressive on the other; charitable to the professional brother whose operative results may, therefore, be less fortunate than our own; discreetly aggressive so that the area of infliction may be timely removed by operative effort. Early explorative determination of the nature of disease, followed at once by operative relief in suitable cases, is today the potent measure of succor pending the advent of means of greater beneficence than those now at hand.

In emphasizing the pre-eminent importance of early measures of relief, one has only to point to the astonishing results which have attended the operative practice of many distinguished surgeons of this and foreign countries. And I believe that it will not be regarded by anyone as evidence of unwarranted pride or of bad taste, if in this connection and on this occasion, we should mention the name of our distinguished president.

If to these means of cure there be now added another for the sake of greater security, the picture in this respect will be complete—a means contemplating the education of the people on the great importance of overcoming reticence regarding such matters in their incipiency, rather than sacrificing life by senseless delay. Patients should be taught that the evidences which they may regard as important and entitled to serious thought and decided recognition, are but a step removed from the presence of hopeless despair and final destruction. They should be told that the subtle onset of malignant disease often baffles the keenest perceptions of the most experienced, requiring for arrest and for cure the best we have, and far too often, more than we can give. The exercise of vigilance in patients already operated on by those who are profoundly concerned in the cure, should be periodically and untiringly practiced, in order that the first evidence of disease may be quickly detected and remedied by renewed operation. The stake of the contest in such cases as these is a human life, and all the comfort and happiness relating thereto. Every victory is another triumph over malignant infliction, of which there are very many in surgical experience. In the general struggle for victory against malignant disease, it should not be forgotten that all those fall who do not seek relief; and that all those who early seek relief, will surely secure added years aud increased comfort, and that not a few will be finally cured. And important it is to remember that the number cured will be measured by the promptness of early diagnosis and curative action followed by untiring periodic scrutiny of the vulnerable points of return. The degree of fortitude required to sustain a patient under repeated malignant attacks, and prompt operative defense, is akin to that with which martyrs are endowed.

Finally, an emphatic warning should be given to all against the seductive influence exercised on the afflicted, by the "perversions of judgment and vain imagings" which too often allure them from the path of scientific beneficence, trodden by honest, sympathetic aid, into the wilderness of arrant quackery, infested by ghouls of heartless gain. Nor should one hasten unduly to substitute for established method in operative cases, means

which are still on trial, even though encouraged to do so by honest, yet unsettled opinion.

Rather than this one should grow in courage, stimulated by examples of successive cures from early effort, and by sentiments attuned in verse by our profession's greatest poet and our hosts' brightest ornament:

"Here stand the champions to defend
From every wound that flesh can feel;
Here science, patience, skill shall blend
To save, to calm, to help, to heal."

HOW PROGRESS COMES IN MEDICINE.

ORATION ON MEDICINE AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION AT BOSTON, JUNE 5-8, 1906.

FREDERICK C. SHATTUCK, M.D.
BOSTON.

During the past year there has been no very conspicuous advance in medicine. Advance there has been, of course, but it has been all along the line rather than any one direction. I propose, therefore, to-night to attempt roughly to sketch, as far as the limitations of time and my knowledge permit, some features of the progress of medicine in the past, its irregularity, apparent lack of logical sequence, dependence on the progress of science (knowledge) as a whole, the way in which advance along a very narrow line may lead to advance along the whole front.

We may for a moment compare the whole body of scientific workers to an army determined to enter into and possesss the empire of ignorance, a country of vast extent and presenting every conceivable physical difficulty to advance and occupation. This is one obstacle. Another lies in the fact that the army has not—nor can it have—an organization comparable to that of the ordinary army with its commander-in-chief, chief of staff, corps and division and brigade commanders, although it has the corps and divisions. Each has its leaders, who owe their position solely to merit. Influence, dynastic, political, family, does not count. Promotion is from the ranks. The rise to high position may be very rapid; deposition is occasionally correspondingly so. Far more than in even Napoleon's army *la carriere est ouverte aux talents.* The freest criticism is permitted, nay encouraged; government is largely by discussion based on observation and experiment. There are many scouts and skirmishers who are necessary to any advance, even of a division. There are also, alas! camp followers. As organized to-day we may distinguish six army corps—anatomy, physiology, chemistry, physics, pathology, clinical history.

Permit me now, dropping analogy, to call your attention to some of the lines of march which have been traversed, some of the territory won, some of the means by which it has been gained.

Gross anatomy was about as well, though, of course, not so widely known three hundred years ago as it is to-day. Medicine had got about as far as it could until the knowledge of a heart, of blood, bright and dark, of blood vessels, was vivified by Harvey, who, without instruments of precision, by experiments on living animals, by clear sight and straight thought, solved the mystery of the circulation of the blood. This step in physiology, in knowledge of function, threw a flood of light backward on structure and was indispensable to further progress. Harvey, a practicing physician, paved the way for Malpighi, anatomist, father of histology, who saw what Harvey had no means of seeing—the capillary circulation. He was contemporary with Leeuwenhoek, the lens-maker, improver of the microscope, and then the microscopist making important contributions to the structure and function of the living organism. Here we see one of the first contributions of physics to medicine. It is remarkable that Leeuwenhoek could do what he did with the simple microscope. He had been in his grave more than a century before any essential advance was made in the compound microscope, gradually leading up to the instrument which has played such a vital part in the progress of modern medicine, and to which I shall again have occasion to allude.

Bichat, indeed, performed his great work and founded the anatomy of the tissues without the aid of the microscope, so imperfect in his day that he thought it more likely to promote error than to discover truth. The ultimate anatomic component of the tissues and organs alike, the cell, though seen and described by Robert Hooke long before, was first seen in its developmental relations in plants by the botanist, Schleiden. Schwann extended this knowledge into animal life. Thus was founded the physiology of the cell. Fresh impetus was given to embryology, so deeply indebted to Caspar Friedereich Wolff of the previous century, and the way was smoothed for Virchow and the pathology of the cell.

In the past hundred years the anatomy of the central nervous system has not been illuminated by anatomists. The microscope showed that the grey matter is composed mainly of cells, the white of fibers. No mere anatomic study could possibly have differentiated the function of grey and white matter, the anterior and posterior nerve-roots, the motor and sensory nerves running in a common cable. Charles Bell, the surgeon, by vivisection, made a great step in physiology and thus advanced anatomy. Marshall Hall, the physician, and Johannes Mueller, the physiologist, again made a further advance in explaining reflex action and its mechanism. Waller, the physiologist, teaches us the lesson of the degeneration of nerve fibers separated from their centers. Anatomy never could have taught us the great lesson of cerebral localization, nor could animal experimentation or physiology alone. The starting point came from the clinician who, through careful comparison of the experiments of disease on the human being during life and after death, pointed out the way for physiologic experiment to follow. Critical clinical study first, pathologic anatomy second, physiology third, anatomy fourth; structure and function, function and structure; indissolubly bound together; advance in one must lead to advance in the other.

Time does not permit me to take up chemistry by itself. In other connections I shall allude to the help it has given to medicine and its progress. Chemistry looms large in the future, and we must look to the biologic chemist to solve, or aid in the solution of, some of the biggest problems which confront us to-day.

Morgagni may be regarded as the founder of pathologic anatomy, John Hunter of its greater outgrowth—pathology. Pathologic anatomy, however, remains sterile until wedded to clinical observation. Laennec is the high priest who officiated at this alliance. Borrowing percussion from Corvisart, who resurrected it from the grave of Auenbrugger, and, with the aid of physics, developing mediate auscultation, he compared the signs of thoracic disease in life in the ward with the changes wrought by it after death, and in ten years performed one of the most stupendous feats in medicine, putting

the recognition of cardiac and pulmonary disease in the living at a level from which it had advanced little for sixty odd years, when the physicist with his *x*-rays made a new advance. Not only so, but Laennec's conception of tuberculosis in the lungs was far more true than that to which a too exclusively anatomic point of view led Virchow, whose great authority again led astray Buhl, Niemeyer and a host of pathologists and clinicians. How Laennec's view of the unity of tuberculosis was confirmed and extended I shall touch on later. Louis follows close on Laennec and enforces the lesson of the value of method and accuracy in the study of disease. It is he who inspires his young American pupils to separate typhus and typhoid fever. Neither pathologic anatomy nor clinical study alone sufficed; in conjunction they succeeded. The power to distinguish between the two diseases clinically has done much to bring about the practical extinction of the contagious typhus. In very recent times the clinical resemblance of typhoid fever, the estivo-autumnal form of malaria and of trichiniasis was in some cases so close as to render timely diagnosis difficult, to say the least. Laveran's discovery of the plasmodium, Widal's of the reaction bearing his name, and Brown's of eosinophilia in trichiniasis go far to insure diagnosis, to aid treatment, to promote preventive medicine. Laveran directly aided diagnosis, but he also paved the way for Theobald Smith's brilliant demonstration of the cause of Texas cattle fever, of the rôle played by insects in the transmission of certain infections to man and animals. Thus the accusation of Manson of mosquitoes in general has ended in the conviction of some species as necessary links in the development, first, of malaria, next of yellow fever. The mysterious sleeping sickness of man and the tsetse fly disease of horses in Africa are found to rest on a similar pathology. The alarming spread of the sleeping sickness coincident with opening up the country and increased travel is noteworthy. In 1873 Obermeier discovered the spirillum of relapsing fever. In the African form of the disease at least it seems to have been recently conclusively proved that a tick plays the part of intermediate host. The life history of the teniæ was worked out by close observation and experiment without much aid from the microscope, such is their size; but the analogous life history of these minute forms of life and their relation to disease must, per force, await the modern microscope. These are some of the latest triumphs in the application of bacteriology to medicine.

Bacteriology was brought into being by the conjunction of the perfected microscope: the chemist Pasteur, who gave the death-blow to the doctrine of spontaneous generation; another chemist, Hoffman, who made his own fortune and then promoted the welfare of humanity by his discovery of the anilin dyes which enable us to see and distinguish organisms many of which are otherwise invisible or unrecognizable; and the physician, Koch, whose solid media on plates so greatly facilitated the isolation and perpetuation of pure cultures of this and that organism. Cut out any one of these four links and we should not be where we are. Laennec's conception of the unity of tuberculosis of the lungs is confirmed, and it is proved that lupus and scrofula, which I have heard the great Hebra suggest to be manifestations of syphilis in the second or third generation, are tubercular in nature.

More than a century has elapsed since Edward Jenner, the provincial practitioner, conferred one of the greatest boons humanity has ever received by rendering it possible to practically annihilate the loathsome and deadly smallpox. The great pox remains a mystery—*pace* the *Spirochæta pallida*. We anxiously await some discovery which will do for scarlet fever and measles what Jenner's discovery did for variola, what antitoxin has done for diphtheria. We are still in outer darkness as to the pathology of these eruptive infections, though the studies of Councilman and his pupils fill us with hope.

The demonstration by Fitz of the relation of the appendix to peritonitis and his work on the pancreas involve another combination of accurate pathologic knowledge, clinical observation, unusual critical acumen, and the experience of the past as collected and recorded in the library, a factor in the progress of medicine the importance of which is daily winning recognition. Would that we had with us to-day in the flesh James R. Chadwick, to whose enthusiasm, energy and devotion in building up the Boston Medical Library not this community alone, but the country at large is deeply indebted. His interest, counsel and duplicates were always at the service of infant medical libraries, to many of which he was wet nurse.

Between Sir Humphrey Davy, chemist, and Morton, dentist, the possibility of surgical anesthesia lay in an almost dreamless sleep for half a century. How sudden the awakening, how momentous its effects! Surgery ceases to be a last resort. Half its terrors are shorn away. Bacteriology shears away the other half, and today scarce an organ, cavity or part remains a sanctuary of disease. Anatomy, physiology, pathology are all enriched by the surgeon's knife used for beneficent purposes on the living man—literally vivisection. I specify alone tubercular peritonitis, supposed to be necessarily fatal until the surgeon, operating under the false diagnosis of ovarian cyst, proved that it may be recovered from. Some cases of tubercular peritonitis need the knife; but many cases get well without any sort of operative intervention. For this advance, I repeat, we have to thank the surgical clinician.

The story of myxedema seems to be one of the most thrilling in medicine, and serves my present purpose in that it shows how the searchlight of clinical observation may illuminate dark places in physiology and pathology. The anatomist finds and describes the ductless glands. The physiologist is at a loss to explain their function. The thyroid is a riddle. Its endemic enlargement, often associated with faulty development alike bodily and mental, is noted, excites interest and speculation, but is another riddle. The great clinician, Gull, describes "A Peculiar Cretinoid State Supervening in Women in Adult Life." He puts forward no theory, but describes merely what he sees, a change coming over previously healthy grown women, producing a state similar to that of the cretin, and quite apart from endemic influence. He opens eyes which so easily overlook what is directly under them. Ord makes the first autopsy, and from the mucin reaction in the swollen tissues cuts the name down to one word, myxedema, still mainly descriptive. So also is Charcot's name—cachexie pachydermique. Clinical surgery now steps on the scene, and we see that the result of the extirpation of the thyroid for goiter, as reported by Kocher and Reverdin, is identical with myxedema. Thus the pathology of the condition is rendered clear, and for the first time we get a definite idea as to the function of the thyroid. The riddle is largely solved. Very soon myxedema becomes one of the most gratifying diseases to treat, and the remarkable fact appears that neither cooking nor gastric digestion notably impair the efficacy of the gland. It is note-

worthy that this great advance comes purely from clinicians, medical and surgical. The experiments of Schiff and Horsley on monkeys, although interesting and confirmatory, are not essential stones in the structure. The evidence is sufficiently complete without the aid of what is ordinarily termed the laboratory; and here it may be remarked that the tendency of the present day is too much toward the limitation of the term scientific medicine to that part of investigation carried on either apart from hospitals or by men not directly dealing with the sick. The work of the clinician may be every whit as scientific as that of his laboratory brother. The purely laboratory man has the advantage that he can inaugurate, systematize and govern his experiments, most of which must be on animals. The clinician has the advantage that the experiments performed for him by disease are on human beings and are oftentimes of such a nature as can not possibly be made artificially. On the other hand, the clinician is apt to find his time and strength so drawn on by individuals clamorous for relief that his highest work suffers. Does medicine afford a better illustration of the interdependence of workers in different fields than lies in the story of myxedema? Great as was the specific discovery of the function of the thyroid, still greater was its direct outgrowth, the broad fact of internal secretion, the sole function of the ductless glands, perhaps also an important function of glandular structures pouring out a secretion through a constant and definite channel.

Before turning aside from the work of the clinician I should like to mention one other advance which has been made and several riddles which still confront us. In the index of Watson's Practice, a book not read to-day as much as it should be, American edition of 1872, neuritis is found only as optic neuritis. James Jackson had recognized paralysis due to alcohol. Buzzard popularizes the knowledge that the trouble is seated in the peripheral nerves in these cases, and that alcohol is only one of many toxic agents liable to cause this result. How easy it is to-day to recognize multiple neuritis, usually to determine its cause in any given case; but there were just as many cases of it fifty years ago as there are to-day. Jaundice was formerly a disease. It is now a symptom only. Rheumatism we now recognize as a tangled skein, the threads of which we are just beginning to unravel. We are dissatisfied with diabetes as a final diagnosis, and are groping for light which may enable us to differentiate the causes of sugar as we have those of bile in the blood and the tissues. We suspect an infection behind purpura. We speak of purpura simplex and purpura hemorrhagica. We know that there are many infections which, when intense, are liable to cause hemorrhage. Our ignorance is dense as to the part played in any case by individual peculiarity as well as to other features of many cases of purpura.

From the side of physics has come one of the most notable of recent advances. Roentgen rays are doing much for the clinician, medical as well as surgical. Are there *y*- and *z*-rays? How long must we wait for their discovery? What will be their practical application? Physics, again, has given us the ophthalmoscope and exposed a prolongation of the brain to direct vision. The aurist owes it much. It enables us to illuminate the interior of the bladder, larynx and trachea, and other cavities; to localize pathologic processes, to watch their progress in the living body, intelligently to relieve and cure conditions which otherwise and formerly were necessarily left to that *vis naturæ* which may be *medicatrix*, but is too often *lethalis*.

The debt of medicine to all those half-truths which are too indiscriminately classed under the terms quackery or charlatanism is real and should be recognized. We believe homeopathy to rest on assumptions unfounded in fact, untenable to-day. The most bigoted of us, however—for there is a bigotry of science as well as of religion—can not deny that homeopathy has advanced medicine, leading to a clearer knowledge of the limitation of the therapeutic action of drugs, of their uses and abuses.

The power of suggestion, the influence of mind over body, whether exercised through hypnotism, mind cure, faith cure, Christian science, what you will, throws a flood of light on physiology and pathology, stimulates the study of experimental psychology, illuminates the influence of the nervous system on the circulation and thus on nutrition. An eminent orthopedist recently classed the natural bone setters, so-called, as forerunners of science, at a time when ignorance as to the action of trauma and disease on joints was profound. They, relying on common sense and observation alone, achieved results which science, timid from knowledge of its ignorance, failed to achieve. There is always a germ of truth in every form of irregular (unscientific) healing—a fact which it behooves us to recognize and be ready to apply.

The services of a laywoman, Lady Mary Wortley Montague, in the introduction of inoculation for smallpox, bitterly fought by our profession of the time, should not be passed without recognition.

All the sayings of a wise man are not necessarily wise, and Solomon, probably when tired or dyspeptic or worried with some family strife, said that there is nothing new under the sun. New things, certainly new in their relation to us, are coming forward every day. Not only so, but the new things spread abroad with wonderful rapidity in these telephonic days, becoming common property.

I have brought you nothing new to-night. I have simply tried to illustrate from the history of the past, how imperfectly I only too well realize, the apparently inconsequent advance of knowledge, the correlation of the sciences, the way in which a fact seemingly perhaps unimportant is always potentially fruitful, often bearing fruit of a totally unexpected kind, it may be after many days. In a positive sense we know more than our predecessors; in a relative sense we may be said to know less. The farther we advance into the empire of ignorance the larger we find it to be, each mountain peak showing higher peaks in the distance.

Life consists in the exercise of our faculties, happiness in the performance of duty and in achievement. We have an abiding faith that "all things work together for good."

Paratuberculosis.—A. Ferranini (*Arch. Gén. de Méd.*), suggests that what is commonly called hereditary predisposition to tuberculosis may be really only the manifestation of an infection by the tubercle toxin transmitted from tuberculous parents in an extremely attenuated form—a paratuberculosis. All the symptoms of the so-called predisposition, he thinks, are those that might easily be due to a very attenuated tuberculous infection, and this view is supported by the clinical and experimental observations of later immunity to the graver forms of the disease. For further testing the question he suggests the use of the serum reaction of Arloing and Courmont, which is positive with negative tuberculin test, would indicate paratuberculosis, and also the urinary test of Mariani and others for the presence of latent or attenuated tuberculosis.

Original Articles

THE CAUSE OF THE HEART BEAT.

W. H. HOWELL, M.D., PH.D.
Professor of Physiology and Dean of the Medical Faculty, Johns Hopkins University.
BALTIMORE.

(*Concluded from page 1670.*)

The Auriculoventricular Bundle.—It was formerly held that the myogenic theory is inapplicable to the mammalian heart because no muscular connection exists between auricles and ventricles. This objection has been completely removed in recent years.

On the anatomical side the work of Kent, W. His, Jr., Retzer, Braeunig, Humblet and Tawara has shown beyond doubt that a small muscular slip passes from the auricle into the ventricular septum. In man, according to Retzer, this bridge is about 1.5 mm. in thickness, 2.5 mm. in width and 18 mm. long.

On the physiologic side the experiments of His, Hering, Humblet, Fredericq and especially of Erlanger, have proved with equal certainty that it is along this narrow bundle that the wave of excitation is conveyed from auricle to ventricle. The last named observer has shown in a series of brilliant experiments that if this bridge be compressed by a specially devised clamp, the sequence of the ventricular on the auricular contractions may be removed either completely or partially. In the former case there is complete heart block, and the ventricle, after a preliminary pause, beats with a slow rhythm entirely independent of that of the auricle. In the latter case the block is partial, and the ventricular beats exhibit a 1 to 2 or 1 to 3 rhythm, as compared with those of the auricle.

Erlanger has succeeded in showing that in man under certain pathologic conditions an exactly similar condition prevails, forming the important feature of the Stokes-Adams syndrome.[26]

Autopsies, indeed, have shown that in some of these cases a demonstrable lesion exists in the region of the bundle. No one can deny the importance of this bundle as the physiologic link connecting auricles and ventricles. If it so happened that the tissue composing it was entirely devoid of nerve fibers the myogenic hypothesis would be practically demonstrated. According to Tawara, however, the bundle is provided with a nerve network similar to that found enveloping the muscular tissue of the rest of the heart, and naturally the neurogenists attribute to this network the functions that the myogenists would assign to the muscular bundle itself.

A definitive answer to our problem is, therefore, again postponed. The myogenists may, however, urge with justice that the probabilities here are once more in favor of his view. This bundle constitutes the only known muscular connection between auricles and ventricles, while nerve connections between the two chambers exist freely in other parts of the auriculoventricular ring;[27] yet severance of this small muscular bridge is all that is necessary in order to interrupt completely the physiologic connection between auricle and ventricle. Investigation of this interesting structure has but just begun. We may hope that future work will develop facts of fundamental significance for the physiology and pathology of the heart. Already one suggestion has arisen out of the work, which indicates the possibility of a new point of view regarding the cause and sequence of the heart beat. Tawara maintains that the cells composing the bundle are not ordinary heart muscle, but that variety of cardiac muscle which has been designated as Purkinje fibers or cells. He believes that the bundle after entering the ventricle spreads out to constitute the Purkinje cells that are known to form a layer beneath the endocardium, and one may conceive that this layer has a still further distribution within the mass of the heart musculature. There is thus presented the possibility of a widespread occurrence of a specially modified type of contractile tissue which may be intimately connected with the phenomenon of automatic rhythmicity as well as of conduction. We must, however, await further investigation before attempting to speculate on this modification of the myogenic theory.

The Action of the Accelerator Nerves.—It has been known that the hearts of both warm-blooded and cold-blooded animals may be kept alive for hours after excision from the body, provided they are supplied with an artificial circulation.

Recently the possibilities of thus maintaining an isolated heart, or of reviving its activity after death, have been developed in a remarkable way. Kuliabko was able to restore the beat of the heart in animals that had been dead three or four days, by the simple process of supplying the coronary vessels with a Ringer's solution. He obtained also similar successful results on human hearts as late as twenty hours after death. In an experiment made on the heart of a man who had been dead eleven hours, Hering was able to restore its beat for a period of several hours. Hering has made use of this possibility to study the source of the heart's automatic rhythm.[28] He found in the course of experiments on the isolated mammalian heart that the inhibitory and accelerator nerves continued to give their respective effects for a long period of time. In one case in a monkey the vagus retained its inhibitory action for six hours after death, and the accelerator for more than fifty-three hours. On the other hand comparative experiments made on rabbits and dogs showed that sympathetic nerve ganglia, such as the superior cervical or the ciliary, lose their irritability very quickly after death, even when supplied with an artificial circulation of Ringer's solution. It seems probable from these experiments that the maintenance of an automatic rhythm in the heart so long after excision or after somatic death can not be due to the activity of intrinsic ganglion cells. Since, moreover, the accelerator fibers retained their irritability in these experiments for very long periods after death it would seem probable that they do not end in the ganglia of the heart but are distributed rather directly to the heart muscles. Such a conclusion implies that the rhythm of the heart beat originates in automatic processes within the muscular tissue itself.

THE MYOGENIC THEORY OR THE NEUROGENIC THEORY?

From consideration of the brief review of the current literature and discussions on this subject it appears to me that every impartial observer will be forced to come to the same conclusion as that reached by Hofmann in his excellent critical paper published in 1898, namely, that the myogenic theory is the most probable of any that have been proposed so far. The theory in its most general form assumes that contraction waves or excitation waves arise in the sinus region and are conducted by the muscular tissue over the whole heart, the visible

26. Erlanger: The Jour. of Exper. Medicine, 1905, vol. vii, No. 6; *ibid.*, 1906, vol. viii, No. 1.
27. See Lomakina: Zeits. f. Biol., 1900, vol. xxxix, p. 377.
28. Hering: Pflüger's Archiv., 1903, vol. xcix, p. 253.

effect at each point being dependent on the condition of the musculature at that moment. At the passage from auricle to ventricle there is a slowing of the conduction due to the small size and special properties of the narrow bundle connecting the two chambers. Moreover the condition of the musculature at any point may be influenced in opposite directions by nervous influences, inhibitory and accelerator, which, however, have nothing to do directly with the origination or conduction of the initial motor impulse.

This theory gives in general an adequate explanation of the phenomena of the normal heart beat, and of those variations that occur under pathologic and experimental conditions, but in order to apply it in detail we need to know more of the processes that lead to contraction and relaxation. In fact, the phenomenon of the co-ordination of the beat is not sufficiently accounted for, whether we adopt the myogenic or the neurogenic theory. The difficulty is apparent if we stop to consider those conditions which lead to inco-ordinated contractions, such as are exhibited in the peculiar fibrillated movements of auricle or ventricle. In this condition the mass of the musculature of the ventricle, instead of contracting simultaneously or in a rapid wave running from one end to the other, exhibits feeble local contractions and dilatations which involve only small areas, and give the entire ventricle the appearance of a fluttering, trembling mass.

One of the most remarkable means of thus throwing the co-ordinated contraction of the ventricles into inco-ordinated fibrillary movements is the heart puncture as described by Kronecker and Schmey.[29] A needle thrust into the heart at the lower border of the upper third of the septum may produce the transformation almost instantaneously. In my experience the phenomenon is somewhat difficult to obtain. In many cases the heart may be punctured a number of times in the region indicated with no other result than a temporary acceleration of the beat. At other times, however, the first thrust of the needle is followed by the development of fibrillary contractions. Kronecker's first explanation that the needle penetrates a co-ordinating nerve center situated in this part is, as we have seen, not supported by other facts; and his second suggestion that the phenomenon is due to excitation of a vasomotor center which causes an ischemic condition of the ventricle is likewise difficult to accept, in view of the small evidence that we possess of the existence of vasomotor nerves to the cardiac vessels.

It is, I believe, equally impossible to furnish an entirely adequate explanation of the phenomenon on the myogenic theory, although possibly, a fuller understanding of the properties of the tissue composing the auriculoventricular bundle may throw some light on it. In the terrapin I have seen a similar phenomenon occur in the auricles as a result of stimulation of the vago-sympathetic nerve, when the heart was being irrigated with a solution containing an excess of calcium chlorid (0.138 per cent.) or a solution which was lacking in potassium salts. The fibrillation in the former case took place at the end of the stimulation, that is, after the inhibition had passed off.[30] It may be, therefore, that the fibrillary contractions are the result of those influences which lead to the development of an augmented rhythmicity throughout the muscular tissue. In our present condition of knowledge, however, it is perhaps wiser not to speculate on the cause of this singular phenomenon.

THE FUNDAMENTAL QUESTION.

Whichever of the two opposing theories we may adopt there remains for discussion the further deeper question of the initial cause of the heart beat. Under normal conditions it will be remembered that the beat arises spontaneously in the sinus region, the rest of the heart contracting in turn only as a result of the stimulus received from the venous end.

The Automaticity of the Heart Beat and the So-called Inner Stimulus.—It has been customary to refer the cause of the spontaneous beat to the production of an inner stimulus, and we have to consider what suggestions have been offered as to its nature and origin. Haller assumed that the venous blood excites the heart, acting presumably as a chemical stimulus. This conclusion seems to have rested mainly on the observation that the heart ceases to beat when deprived of blood. Those who advocated this view made no hypothesis as to the special constituents of the blood which are charged with this important function. Later some of the older observers suggested that the blood acts simply as a mechanical stimulus to the heart, its pressure on the heart walls being the initial cause of the beat.

The experimenters of the early part of the nineteenth century had abundant opportunities to observe that in the cold-blooded animals the heart continues to beat for a long time after removal from the body and even when its cavities are widely opened by incisions. This fact influenced most of the physiologists throughout the nineteenth century to take the stand that the blood has no direct influence on the production of the heart beat. While it furnishes nutriment to the heart as to the other tissues, it is not immediately concerned in the causation of the beat. On the contrary it was assumed that the inner stimulus is autochthonous, that is, arises within the heart itself as a result of its own metabolism. The most concrete statement of this point of view is found in the aphorism used by Langendorff, "*Das Lebensprodukt der Zelle ist ihr Erreger.*"[31] That is to say the normal catabolism within the heart muscle or its intrinsic nerve cells gives rise to some substance which acts as a stimulus. There is no evidence, however, other than the automaticity itself, that such a stimulating substance is produced and no suggestion is made as to its nature. That a substance of this sort is not produced during the specific catabolism leading to the contraction is indicated by the fact that in a heart brought to rest by the inhibitory nerve the inner stimulus continues to increase during the period of quiescence, until at last it breaks through the inhibitory control and the heart again beats.

Those who hold to this view, therefore, must assume that this unknown stimulating substance is a product

29. Kronecker: Zeits. f. Biol. (Jubilee volume), 1896, p. 529.

30. Dr. Erlanger tells me that in several cases he has observed that stimulation of the vagus nerve in the dog, during experiments in which the chest was widely opened and the pericardium was dissected off, was followed after interruption of the stimulation by a period of inco-ordinated contractions. McWilliam (Jour. of Physiol., 1888, vol. ix, p. 392) records that in the isolated heart of a cat stimulation of the vagus caused rapid fluttering movements of the auricles instead of the usual inhibition. Knoll (Pflüger's Archiv., 1897, vol. lxvii, p. 591) refers also to the fact that in the mammalian heart stimulation of the vagus may call forth fibrillary movements in the auricles. Direct stimulation of the heart with induction shocks, if strong enough, will throw the heart into fibrillary movements and a similar result follows or may follow conditions of marked anemia. In strips of the ventricle from the terrapin's heart it is sometimes observed that excessive doses of calcium salts in the bathing liquid may so change the irritability of the muscle that a simple induction shock calls forth fibrillary movements instead of the usual contraction (Schultz).

31. Langendorff: Archiv. f. Anat., u. Physiol. (physiology division), 1881, supplementary volume, p. 1.

of the resting metabolism of the heart. This, in fact, is the view advocated by Engelmann.[32] He holds that there is a continual production of stimulating substance at the sinus end of the heart, which as soon as it reaches a certain quantity excites the muscle and starts a wave of contraction. Since, moreover, each systole is followed by a period of inexcitability which constitutes the diastolic or resting phase, it is a necessary part of this theory to assume that the process of contraction in some way arrests the production of stimulating substance and indeed destroys or antagonizes that already formed. Hering[33] seems to adopt a similar point of view. Without venturing on any speculations regarding the nature of this stimulating substance or the processes leading to its production, he develops the idea that a similar process may occur in the atrioventricular region or in the ventricle itself, the effective stimulus produced in these latter locations being designated as heterotropic in contrast with the normal stimulus which arises at the venous end. In other words he adopts the view that parts of the heart other than the sinus region may develop automaticity under certain conditions.

Many investigators have been unwilling to remain content with such general explanations and have sought, therefore, to ascertain what substance or substances constitute the actual stimulus for the heart's contractions, or bear such a close relation to this phenomenon as to form a necessary step in its development. Most of the investigators in question have directed their attention to a careful examination of the specific influence of the individual constituents of the blood. They have followed the general line laid down by Haller in seeking the immediate cause of the heart's activity in the action of the blood itself. The fact that an apparently bloodless heart continues to beat is no argument against such a view, for it is obvious that a heart whose cavities have been depleted of blood by washing is still saturated throughout its substance with tissue lymph, which must be considered in this connection as an actual part of the blood.

One somewhat peculiar view of the relations of the blood to the heart beat has been proposed by Kronecker. As far back as 1874[34] this author expressed the opinion that the heart muscle can continue to contract only when it receives a constant supply of fresh food material. Subsequently in a series of papers published by himself and his pupils[35] he attempted to show that the serum albumin contained in the blood (and lymph) forms the immediate source of the energy of the heart's contractions, and that these contractions can continue only as long as a supply of this material is present in the liquid bathing the tissue. The insufficiency of the experimental data on which this hypothesis was based has been demonstrated by others[36] and the progress of investigation in recent years has been such as practically to remove it from the field of discussion. At the time that Kronecker's chief investigations were made the importance of the effect of the inorganic constituents of the blood was not adequately understood.

Recent Investigations.—The most modern and seemingly the most hopeful line of investigation on the cause of the heart beat was started by Ludwig in 1875. Under his guidance Merunowicz began the study of the relations of the inorganic constituents of the blood to the heart beat. Before that time and for many years subsequently, perhaps even at the present day, physiologists were accustomed to consider only or mainly the organic constituents of the heart or of the blood in discussing the cause and conditions of the rhythmic beat. In the theories of Langendorff and of Engelmann referred to above it is implied, although not specifically stated, that the unknown substance constituting the "inner stimulus" is organic in nature. Merunowicz was able to show that aqueous solutions of the ash of blood, free from all organic matter, have a remarkable efficacy in causing and maintaining the contractions of the frog's heart.[37] He attempted to analyze the specific influence of the several constituents of the blood ash, but in this effort he and the workers in the same laboratory who continued his investigations, were unfortunate in overlooking the importance of the minute amounts of calcium salts present.[38] Nevertheless it was made clear by their work, particularly by that of Merunowicz, that the inorganic constituents of the blood have an important relationship to the development of the heart beat.

In 1883, Ringer, by a fortunate accident, was led to study the effect of calcium salts on the heart's contractions,[39] and on the basis of his experimental results he devised an artificial serum, known now as Ringer's solution, which is capable of maintaining the beat of the heart in a wonderful way. This solution contains certain amounts of sodium, potassium and calcium salts, and for some hearts also a trace of alkali in the form of sodium carbonate. Its extraordinary efficiency in developing and maintaining the beat of the isolated heart both in the cold-blooded and the warm-blooded animals is known to all physiologists. The heart of the dog, rabbit, cat and of man himself has been kept beating on this inorganic diet for many hours, or even for days. Locke has succeeded recently by making use of a modified Ringer's solution, containing dextrose, in keeping a rabbit's heart beating for four days after removal from the body. The action of this artificial serum and the specific effects of its different constituents have since been the object of a large number of investigations by Ringer himself and by many other workers in various parts of the world.[40] It is entirely evident that a simple aqueous solution containing only sodium, calcium and potassium salts, together with oxygen, cannot furnish nutriment to the heart in the sense of supplying it with a source of energy for its contractions. The rôle of these salts must be found in their relations to the origination of the heart beat, that is to say, their connections with the chemical changes in the organic constituents which give rise to the energy of the contraction.

Experiments on the hearts of the cold-blooded animals indicate that so far as the circulating liquid is concerned the potassium salts do not form an absolutely necessary constituent. The heart as a whole, or different parts of it, may continue to give rhythmic beats when immersed in or supplied with a solution containing only sodium and calcium salts. There is no doubt, however, that for the heart as a whole, and, therefore, especially for the venous end of the heart, the presence of potassium salts makes a better balanced mixture, and one which maintains a normal beat for a longer period

32. Engelmann: Archiv. f. d. ges. Physiol., 1897, vol. lxv, p. 109.
33. Hering: Centbl. f. Phys., 1905, vol. xix, p. 129.
34. Ludwig's Festgabe, 1874.
35. Kronecker and McGuire: Archiv. f. Anat. u. Physiol. (physiology division), 1878, p. 321; also von Ott: *Ibid.*, 1883, p. 1; Kronecker and Popoff: *Ibid.*, 1887, p. 345; Brinck and Kronecker: *Ibid.*, 1887, p. 347; White: Jour. of Physiol., 1896, vol. xix, p. 344.
36. See Howell: Amer. Jour. of Physiol., 1898, vol. ii, p. 47; also Greene: *Ibid.*, p. 82.
37. Arbeiten aus d. phys. Anstalt in Leipzig, 1875, p. 132.
38. Gaule: Archiv. f. Anat. u. Physiol. (physiology division), 1878, p. 291; also Stiénon: *Ibid.*, 1878, p. 263.
39. Ringer: Jour. of Physiol., 1883, vol. iv, p. 29 and p. 370.
40. Locke: Centbl. f. Physiol., 1905, vol. xix, p. 737

of time. We must bear in mind that the heart muscle contains a considerable store of potassium, and the fact that it continues to contract rhythmically when supplied with a mixture containing only sodium and calcium salts, is no proof that the potassium does not continue to play its important and necessary rôle, whatever that may be. All the evidence from experimental work indicates that the potassium salts are concerned chiefly with the production of the condition of relaxation, the phenomena of diastole and inhibition.[41] In the matter of the contraction of the heart, therefore the rôle assumed by the sodium and the calcium respectively, has excited the chief interest. One set of observers (Loeb, Lingle[42]) have believed that the sodium salts (or rather sodium ions) stand in the most immediate relation to the process originating the contractions. "Among the ions found in blood, those of sodium are the producers of rhythmic activity. They constitute the primary stimulus." While others (Ringer, Howell, Langendorff, *et al*) believe that it is the calcium salts which are most directly concerned in the actual contraction, although the manner and extent of their action are differently interpreted by the several authors. A large literature has sprung up in recent years on the specific effects of these salts under different conditions.

The time at my disposal does not permit me to enter into the details of the discussion, and, indeed, the facts at present are not so numerous nor so definite that one is able to draw any very satisfactory conclusions in regard to their real manner of action. Instead of attempting to present or discuss these details permit me to call your attention to certain general conclusions that may be derived from the accepted fact that these inorganic elements play an essential part of some sort in the processes underlying the heart beat.

GENERAL CONCLUSIONS.

In the first place what is or may be their relations to the so-called inner stimulus? Langendorff[43] and others while admitting the necessity of these substances, characterize them simply as conditions which must be supplied in order that the inner stimulus may act; conditions of the same general character, for example, as a suitable temperature or the presence of oxygen. From this standpoint, therefore, the inorganic salts have nothing to do directly with the initiation of the beat, although this phenomenon can not take place in their absence. On the other hand Lingle has stated that the sodium ions form the direct stimulus to the heart's activity, while I have been quoted by several authors as advocating the view that the calcium ions constitute the inner stimulus. I must object to this interpretation of my views on the action of the calcium salts. In my last paper on the subject I have stated simply "that the energy of the heart beat is derived from material stored in its own substance. For the utilization of this supply of energy, however, certain conditions are necessary, and the principal one of these conditions seems to be the presence in the liquids of the heart of a supply of calcium in some form." And again, "Under normal conditions the stimulus that leads to a heart contraction is dependent on the presence of calcium compounds in the liquids of the heart."

These views do not differ materially from those finally accepted by Langendorff, except in the fact that he supposes the creation in the heart of some as yet unknown substance which acts as the "inner stimulus." We have no proof that any such substance is formed and, indeed, to my mind there is no necessity for assuming the existence of a specific inner stimulus. In discussing such a point one must define first of all what is meant by a stimulus. Ordinarily by this term we mean some form of energy which, acting on the irritable living substance, causes it to exhibit its specific form of activity. If the chemical reaction underlying functional activity is directly induced by a special compound or even by a specific ferment, I presume that we should be justified in characterizing this compound or this enzyme as a stimulus. But if, as may well be the case, the living substance is of sufficient instability to break down spontaneously, under the conditions prevailing in the tissue, then the chain of events leading to the display of functional activity may be inaugurated without the activity of a specific inner stimulus. It is in this manner that I conceive that the spontaneous beat of the heart arises.

The immediate cause of the contraction is a chemical reaction or a series of such reactions. In accordance with the knowledge of our day we may assume that the first step in this series consists in the dissociation, the falling into pieces of a complex, unstable molecule, and that this dissociation is followed by an oxidation of the split products. The undoubted necessity of the oxygen for the normal production of a heart contraction may be referred, therefore, to the part that it plays in the second stage of the process, and not to its action as a primary or initial stimulus. The "inner stimulus," if such a thing exists, must be concerned in the production of the initial step of dissociation. We may inaugurate this first step, as is well known, by the application of some external form of energy, such as a mechanical impulse, an electrical current, a nerve impulse, etc., and it is conceivable, of course, that it may be started, as Langendorff and Engelmann have supposed, by some specific substance formed in the metabolism.

It seems to me, however, equally as probable or more probable that this initial step takes place really automatically or spontaneously, in consequence of the instability of the substance in question. My own work has convinced me that the calcium salts are in some way of prime importance in this matter of the initial dissociation of the energy-yielding substance, but I do not believe that they act as a direct chemical stimulus. Speculations on this subject must at present go beyond the limits of our real knowledge and are, therefore, liable to be partly or completely erroneous.

The following facts must be taken into account by any hypothesis which attempts to picture the processes causing the rhythmic contraction and dilatation of the heart muscle:

1. The heart possesses within itself a store of energy-yielding material, such that it may continue to give many hundreds or thousands of contractions after its supply of nutriment has been cut off.

2. Each contraction, whether caused normally or by an artificial stimulus is maximal, and, therefore, probably uses up all of the energy-yielding material which is at that moment in an irritable condition, that is to say, in such a condition that it may be acted on by a stimulus.

3. The amount of this material in irritable form is nil during the phase of systole, but increases in amount throughout the period of diastole. We know, for

41 See Howell: Amer. Jour. of Physiol., 1900, vol. xv, p. 280.
42 See Lingle: Amer. Jour. of Physiol., 1900, vol. iv, p. 265.
43. See Ergebnisse d. Physiol., vol. i, part ii, 1902; also vol. iv, part ii, 1905.

example, that if stimulated just at the beginning of diastole the heart muscle gives a small contraction and that the contraction, which may be obtained later by artificial stimulation, increases in extent the farther the diastole has progressed.

4. If the above statements are correct it follows that the store of energy-yielding material in the heart exists in some non-irritable form and that during the phase of diastole a portion is converted into an irritable form capable of being acted on by a stimulus.

5. The presence of certain inorganic salts is necessary for this transformation from the non-irritable to the irritable condition.

In order to picture the relations of the inorganic salts to this process the hypothesis which I have adopted as a heuristic principle to guide my own investigations, may be stated as follows: The well-nourished heart contains a large supply of energy-yielding material, which is in stable form, so that it neither dissociates spontaneously, nor can be made to do so by the action of external stimuli. It is possible that this stable, non-dissociable form consists of a compound between it and the potassium or the potassium salts, and that herein lies the functional importance of the large amount of potassium contained in the tissue. This compound reacts with the calcium or with the calcium and sodium salts, and a portion of the potassium is replaced and a compound is formed which is unstable. At the end of the diastolic period this compound reaches a condition of instability such that it dissociates spontaneously, giving rise to the chain of events that culminates in the normal systole. Before spontaneous dissociation occurs it may be hastened prematurely by an external stimulus, as we know to be the case when a mechanical or electrical shock is applied to the heart at any time after diastole has begun.

From this point of view the rôle of the calcium, or of the calcium and sodium salts consists in replacing the potassium and converting a part of the store of stable material into an unstable, easily dissociable compound. We are not obliged, therefore, to assume the existence of any specific inner stimulus. An hypothesis of this character accounts readily for some of the most characteristic features of the heart beat.

Each contraction must be maximal since it involves the dissociation of all the material existing in unstable form. The contractions must be rhythmic since, after each contraction a certain interval, which will be constant when the conditions are uniform, is needed for the production of more of the unstable material. At each systole the heart will exhibit a refractory phase, since the ready-formed, unstable material has been used up and the rest of the energy-yielding substance exists in a stable, non-irritable form. In terms of the hypothesis the refractory phase should pass off gradually as new, unstable material accumulates, and this we know to be the case, since a weaker stimulus is required to force the heart to contract the later it is applied in the diastolic phase.

Whether or not this or any other of the hypotheses described turns out to be correct, we may congratulate ourselves at least that the labors of the experimental physiologists during the last quarter of a century have added to our store of knowledge this new and important fact, namely, that the inorganic salts of the blood and lymph play an essential rôle in the production of the heart beat.

ULCER OF THE STOMACH: PATHOGENESIS AND PATHOLOGY.

EXPERIMENTS IN PRODUCING ARTIFICIAL GASTRIC ULCER AND GENUINE INDUCED PEPTIC ULCER.*

FENTON B. TURCK, M.D.

CHICAGO.

DEFINITION.

By artificial gastric ulcer is meant ulcer produced by experimental means, as by some local, mechanical or chemical injury; by induced ulcer is meant ulcer produced by more indirect and natural means, such as feeding methods, as presented in this paper. The term peptic is retained on account of long usage.

INTRODUCTION.

Ulcer of the stomach is one of the most important

Fig. 1.—Deep ulcer in which perforation occurred, resulting in general peritonitis and death.

pathologic questions that engage the attention of scientific workers.

Clinically, it has led to the investigation of numerous conditions with which it is directly or indirectly associated, such as the local manifestations of pain, hemorrhage, perforaton; the secondary results, as adhesions, cicatrices, and contractions; carcinoma formed at the site of the ulcer, and, finally, the systemic conditions of toxemia, lowered vitality, anemia, etc.

The pathogenesis of gastric ulcer, however, is what has called forth the best scientific effort. The rôle that

* Presented before the International Medical Congress, Lisbon, 1906. The preliminary report on these experiments was first presented in the symposium on Gastric Ulcer before the American Gastro-Enterological Association, 1904, and withheld from publication for more careful revision and research. Presented before the joint meeting of the Chicago Pathological Society and Chicago Medical Society, March 21, 1906.

* From the Research Laboratory of the Turck Institute, Chicago

cytolysis and autocytolysis play in the formation and persistence of ulcer must be recognized as an important one. It points back to the fundamental problem: What prevents self-destruction of the stomach; and, moreover, what prevents autocytolysis of all tissues of the body? That some sort of protection existed to prevent self-destruction was even recognized by the ancients, who attributed it to some supernatural power.

Stahl[1] regarded our protection to be the "sensitive soul." He states: "This very preservation of a thing essentially destructible by which its destruction through its own activity is prevented is exactly what we ought to understand by the common word 'vital.' In any case the fermentation which takes place in the alimentary canal is not an ordinary fermentation, such as occurs in a merely compound, not-living body, but a most special character is impressed on the change by energy of the soul."

John Hunter,[2] in his vital principle, expressed a similar idea, and in place of the "sensitive soul" he believed that the "vital power" protected the body by some inherent energy.

As cellular pathology developed, the word tissues was added to the same vital power of Hunter, and, as Riegel[3] expresses it, "The main reason why the stomach does not digest itself is unquestionably the vital resisting power of the tissues."

The conception of resistance of the tissue against the formation of ulcer has developed various ideas of local protection, either as a vital power residing in the cell or some secretion acting as a mechanical or chemical protection. Thus Vaughan Harley[4] thought the mucus acted as a protective coat of mail to the mucosa of the stomach, and Claud Bernard[5] believed that the regeneration of cells rapidly replaced those destroyed by the gastric fluid.

The modern idea of this local protection is shown in Weinland's[6] work, who holds that an anti-pepsin ferment residing in and as a part of the gland cells protects them from destruction.

A.—GENERAL PROTECTION.

The Sensitive Soul	Stahl
Vital Force	Hunter
"Vital Resisting Power of the Tissues"	Riegel
Alkalinity of the Blood	Pavy[7]

Fig. 2.—Deep ulcer, near pylorus, from which hemorrhage occurred, resulting in death. (The ulcer is at the bottom of the central diagonal sulcus.)

B.—LOCAL PROTECTION.

The Mucus Acting as a Protective Coat to the Mucosa	Vaughan Harley
Constant Reproduction of Exfoliated Epithelium	Claud Bernard
Antipepsin Ferment Residing in and as a Part of the Gland Cell	Weinland

From the large amount of experimental work on blood serum, by numerous investigators, we are able now to clothe our ideas of "protective bodies" in more technical and definite language. We may speak now of natural histogenic immunity, of hemolysins, of agglutinins, of precipitins, of cytotoxins, etc. We may go a step further in our understanding of this same histogenic immunity towards infectious diseases in the light of amboceptors, and of the alexins or complements, with their

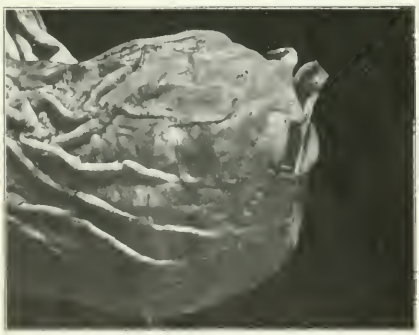


Fig. 3.—Multiple peptic ulcer, mucous surface, large ulcer in center. Smaller ones shown by depressions above.

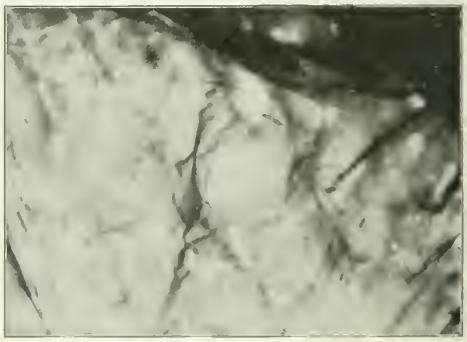


Fig. 4.—Same by transmitted light. Multiple ulcers shown by the light spots with light transmitted through the gastric walls. Note thinness of wall in center ulcer.

1. Stahl (1660-1731): "De mixti et vivi corporis vera diversitate."
2. Hunter (1728-1793): "The Digestion of the Stomach After Death," Phil. Trans., 1772.
3. Riegel: "Diseases of Stomach," (Nothnagel's Practice), 1903, p. 561.
4. Vaughan Harley: British Review, vol. xlix, 1860.
5. Claud Bernard: Leçons de phys. Exp., Paris, 1856.
6. Weinland: Zeitft. f. Biolog., vol. xlv, 1903.
7. Pavy: Guy's Hosp. Reports, 1868.

respective toxophore, haptophore, or receptor groups. It is easy to understand what a clear field of investigation was opened in the study of natural and acquired immunity towards infections diseases in the light of amboceptors and complements of toxins and antitoxins. It is no less evident to one investigating the problem of the

Fig. 5.—Duodenal ulcer, second portion.

production and persistence of gastric ulcer that we have here, not a question of local pathology, but of general blood pathology, of complement and amboceptor, of cytolysis and autocytolysis.

HISTORY OF EXPERIMENTS BY PREVIOUS INVESTIGATORS.

In the following classified list of methods adopted by various observers, it will be observed that most of the efforts to produce ulcer by artificial methods have been directed towards obtaining purely local cellular changes. This is apparently the direct influence of Virchow and his school in experiments and clinical observation of the pathology and pathogenesis of ulcer up to the present time. Virchow offered the hypothesis of vascular obstruction or aneurismal dilatation of vessels, but these are far too inconstantly found in ulcer.

Fig. 6.—Duodenal ulcer at jejunal junction.

Ulcers produced by some form of mechanical injury to the stomach wall heal even more readily than in other parts of the body, and attempts to produce ulcer, by chemical injury, either fail to produce the lesion, or the lesion heals more or less promptly. As anemia is frequently associated with ulcer, various attempts have been made to produce ulcer by combining resection and some mechanical injury, as resection of the mucosa, with bleeding, or the injection of laked blood or chemical substances, as practiced by Cohnheim, Silbermann and others. If the anemia was sufficiently profound and the injury well-marked, ulcers were produced in the stomach, just as one would expect in injury to any part of the body.

The production of ulcer of the stomach by destroying areas in the brain, or section of the cord or vagi, can not be satisfactorily explained, but seems rather too violent and foreign to the conditions present in ulcer of the stomach. One explanation of the cause of ulcers produced by the above methods might be suggested by the work of Pawlow, who noted loss of motor power of the stomach after section of vagi, and of the recent work of Ophüls, who noted great dilatation of the stomach after section of both vagi below the diaphragm. Both these conditions would be very important factors in causing change in the bacterial growth in the stomach and intestines. How far this bacterial factor may be an ex-

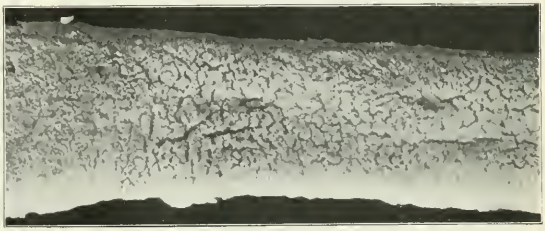


Fig. 7.—Duodenal ulcers, near pylorus.

planation of the ulcers produced after injury to the peripheral and central nervous system will require further investigation.

The following tables of the different authors' experiments in the production of artificial gastric ulcers are classified and arranged for convenience and ready reference. A few clinical and postmortem observations are included in these tables:

TABLES OF EXPERIMENTS BY PREVIOUS INVESTIGATORS.

A. MECHANICAL AND PHYSICAL INJURY.

		RESULT.
Ritter[8]	Violent bruises	
Decker[9]	Heat	Ulcer
Matthes[10]	Trauma (with 5 per cent. HCl)	Ulcer
Schmidt[11]	Trauma (with HCl)	
Körte[12]	Pinching stomach with clamps	Ulcer

B. CHEMICAL.

Roth	Crystals of nitrate of silver introduced into stomach	Ulcer

1. HCL AS A NECESSARY FACTOR.

Riegel[13]	HCl necessary	
Matthes[10]	Trauma (without HCl)	Negative
	Trauma (with 5 per cent. HCl)	Ulcer
Schmidt[11]	HCl and trauma	
Ewald[14]	HCl essential factor	

2. CONTRA HCL.

Pawlow[15]	Hyperacidity a consequence.	
Du Misini[16]	Superacidity without significance.	
Ageron[17]	HCl may be persistently absent.	

8. Ritter: Beits. f. klin. Med., 1887, p. 12.
9. Decker: Berl. klin. Wochft., 1887, p. 21.
10. Matthes: Ziegler's Beitr., vol. xiii, 1897.
11. Schmidt: Inaug. Dissert., Leipzig, 1895, p. 6.
12. Körte: Inaug. Dissert, Strassburg, 1875.
13. Riegel: Zeits. f. klin. Med., vol. xii, p. 434.
14. Ewald: "Diseases of the Stomach," 1899.
15. Pawlow: "The Work of the Digestive Glands," 1902.
16. Du Misini: See Riegel, "Diseases of the Stomach," 1903, p. 570.
17. Ageron: Münch. med. Wochft., July 29, 1902.

Kavelsky[18]	Synchronous ulcer of the stomach and bladder.	

C. GENERAL DYSEMIA.

Virchow[19]	Anemia and chlorosis.	
Quincke and Daetwyler[20]	Anemia by producing gradual hemorrhage and local trauma.	Ulcer, which healed with difficulty.
Silbermann[21]	Hemoglobinemia	Ulcer
Flütterer[22]	Hemoglobinemia	Ulcer
Cohnheim[23]	Hemoglobinemia by mechanical injury and injection of laked blood	Ulcers

D. DISTURBANCE OF LOCAL CIRCULATION.

Virchow[24]	Embolism, thrombi, aneurism or varicose veins.	
Klebs and Welti[25]	Thrombi.	
Panum[26]	Injection of emulsion of wax into into femoral vein.	Gastric infarcts, ulcer.
Talma[27]	Ligation of esophagus and pylorus	Ulcer
Rindfleisch[28]	Venous stasis; prolonged ischemia.	
Axel Key[29]	Prolonged ischemia due to contraction of gastric muscle.	No experiments.
Müller[30]	Tied portal vein	Ulcer

E. INJURIES TO NERVES AND NERVE CENTERS.

Schiff[31]	Intersection of thalami and peduncles	Ulcer
Ebstein[32]		
Brown Sequard[33]	Anterior corp. quadrigemina	Ucer
Vidova[34]	Injection of Alcohol into vagus	Negative
Vidova[34]	Section of the sympathetic	Ulcer
Yzeren[35]	Section of the sympathetic with section of vagi below the diaphragm	Ulcer
Saitta[36]	Section of the sympathetic with section of vagi below the diaphragm	Ulcer
Ophüls[37]	Section of the sympathetic with section of vagi below the diaphragm	Ulcer
Koch and Ewald[38]	Section of cord, and 5 per cent HCl in stomach	Ulcer

Fig. 8.—Deep peptic ulcers of duodenum (first portion).

F. LOCAL INFECTION.

Cohnheim[23]	Injection. Infected suspensions of lead chromate	Erosions and ulcers.
Büttcher[39]	Infection as cause of ulcer	Opposed by Körte.
Nauwerck[40]	Infection observed at edge of ulcer.	

The following tabulated record of my experiments is introduced here, although many of the methods apparently come under the above classification, yet they are sufficiently distinct to permit a separate presentation:

AUTHOR'S EXPERIMENTS.

A. MECHANICAL.	RESULTS
Excision of the mucous membrane. Also application of local irritants and removal of mucous membrane by nippers, observed through a permanent gastric fistula.[41]	No visible lesion.
Trauma and hemorrhage by wire brush. (Repeated for one month.)[42]	Hemorrhagic erosions
Cardiac and pyloric ligations.[43]	No erosion.
Partial ligations of portal vein.[43]	Erosions near ligation.
Ligations of veins of stomach.[43]	

B. CHEMICAL.

Application of tannic acid, gastric juice to mucosa with the gyromele.[43 42 43]	Negative.
Application of chromic acid, silver nitrate crystals with gyromele.[43 42 43]	Negative.
Same; pyloric end partially tied.[43]	Hemorrhagic erosions.
Tannic acid daily for several weeks.[43]	Negative.
Mustard oil, large doses.[44]	Acute gastritis only.
Mustard oil for 14 months.[45]	Chronic gastritis. No ulcer.

C. LOCAL INFECTION.

Sarcinæ and yeast introduced into stomach; pylorus partially tied.[46]	Negative.
Stomach contents from infected stomach injected into dog's stomach through fistulous opening.[43]	Increased HCl. No ulcer.

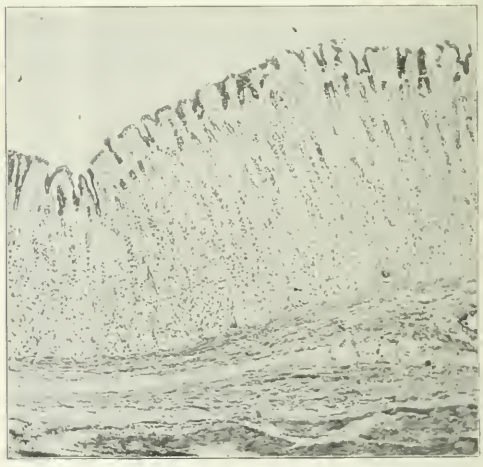


Fig. 9.—Stomach of dog. The mucosa is practically normal. The glandular structure is well shown and the surface epithelium is intact. (Low power.)

D. INJECTION OF TOXINS.

Diphtheritic toxin injected into stomach wall.[47]	No ulcer, pinhead hemorrhagic foci in duodenum.
Same.[47]	Same. Local necrosis near pylorus.
Diphtheritic toxin injected into mesenteric vessels.[47]	No ulcer, foci of necrosis after two weeks in duodenum and near pylorus.
Intravenous injection of extracts and emulsions of gastric mucous membrane.[48]	Necrosis of mucous membrane near pylorus
Intravenous and subcutaneous injection of stomach contents from patients into animals.[49]	No ulcer

E. SYSTEMIC DISTURBANCES.

Shock and infection. Laparotomy. Exposure of stomach to air three hours repeated. Inoculation peritoneal cavity.[50 42]	No ulcer

18. Kavetsky: Prag Vratch., 1902, No. 24.
19. Virchow: "Anemia and Chlorosis."
20. Quincke and Daetwyler: Deuts. med. Wochft., 1882, p. 6.
21. Silbermann: Deuts. med. Wochft., 1886, No. 29, p. 497.
22. Flütterer: THE JOURNAL A. M. A., March 15, 1892; also Oct. 15, 1904.
23. Cohnheim: "Lehrbuch der Pathol. Anat."
24. Virchow: Virchow's Archiv., vol. v, p. 360.
25. Klebs and Welti: "Thrombi."
26. Panum: "Virchow's Archiv.," vol. xxv, 1862.
27. Talma: Zeits. f. klin. Med., vol. xvii, p. 10.
28. Rindfleisch: "Lehrbuch der Pathol. Anat."
29. Axel Key: Gurit, Virchow's Jahr., 1871.
30. Müller: Erlangen, 1860.
31. Schiff: "Leçons sur la physiologie de la digestion," 1862.
32. Ebstein: Deuts. Archiv. f. klin. Med., vol. IIv.
33. Brown Sequard.
34. Vidova: Archiv. f. Verdauungsk., vol. viii, No. 3.
35. Yzeren: Zeits. f. klin. Med., 1901, xliii, 81.
36. Saitta: Gaz. degli Osp. Milan, vol. xxi, 599.
37. Ophüls: Jour. Exp. Med., vol. viii, No. 1.
38. Koch and Ewald: Klin. der Verdauungsk., vol. 1, No. 3, p. 122.
39. Büttchet: Dorpater Berichte, 1873.
40. Nauwerck: Münch. med. Wochft., No. 35, 1897.
41. Turck: "Experimental Observations on Erosions of the Stomach," Ft. Wayne Med. Jour. Mag., January, 1897.
42. Turck: Wiener med. Wochft., Nos. 1 and 2, 1897.
43. Turck: Medical News, April 4, 1896.
44. Turck: N. Y. Med. Jour., Oct. 25, 1902.
45. Turck: THE JOURNAL A. M. A., June, 1897, also N. Y. Med. Record, Aug. 14, 1900; Wien. med. Wochft., No. 18, 1901.
46. Turck: THE JOURNAL A. M. A., March, 1896.
47. Turck: Trans. Chicago Path. Soc., April, 1903.
48. Turck: Medical Standard, Chicago, December, 1903.
49. Turck: N. Y. Med. Jour., Feb. 22, 1896.
50. Turck: Amer. Therapist, November, 1900.

Prolonged use of chloroform and ether: two to six hours.[51]	No ulcer.
Guinea pigs and rabbits closely confined in small cages.[52]	Six ulcers; two spontaneous, four by local lesions.

F. INJECTION OF PEPTONES.

Intravenous and subcutaneous injection of peptones for two to four weeks after removing portions of the mucous membrane of the stomach.	Six dogs: Two scars, two delayed healing, two negative.

In the above series of my experiments, most of which have been previously reported, those of injecting mustard oil into the stomach and those of animals kept in confinement, are of special interest.

In the experiments with mustard oil, increasing doses were injected into the dog's stomach at intervals of two to three days for nine to fourteen months. One hundred c.c. of a 1 500 emulsion of the oil was injected at the outset, but the dose was gradually increased, so that at the end of three months 125 c.c. of a 1 50 emulsion could be given, and later the oil was simply added to the dog's food.

Vomiting and acute gastric symptoms followed the earlier injections, but later no reactionary symptoms occurred. At the end of nine months dog No. 1 died. At the end of eleven months dog No. 2 died. No ulcer was found in the stomach or intestines in either dog No. 1 or dog No. 2. At the end of fourteen months dog No. 3 was chloroformed. The dog was emaciated. The stomach was dilated and occupied a large

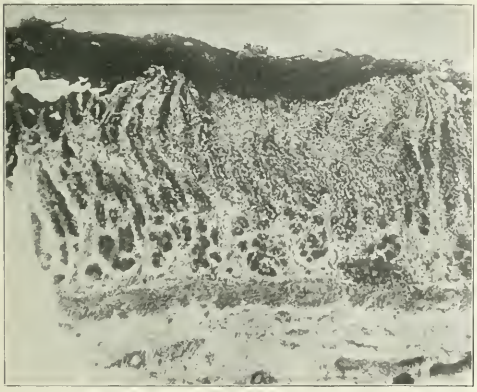


Fig. 10.—Stomach of dog, early stage. The black mass on the surface and the finger-like projection downward into the crypts is an accumulation of mucus, cellular débris, blood serum, etc. (Low power.)

portion of the abdominal cavity, the greater curvature extending to the line of the anterior superior spinous process. The mucous membrane in the fundus of the stomach showed etat mamillæ. Microscopic examination showed chronic gastritis. No ulcer was found in the stomach or intestines.

Failure after such radical means as the feeding of mustard oil for fourteen months demonstrated the futility of attempting to produce ulcer by simply local irritation.

The possibility of systemic disturbances, altered metabolism, impaired nutrition being etiologic factors in the production of ulcer led to the experiment of confining animals in very close quarters for a long period of time.

Ninety six guinea pigs and 36 rabbits were used in the experiment, which was continued nine months. The animals were confined in small sterilized cages (made of wood, except the bottom, which was of wire netting), 4x6x6 inches. The top was closed by a hinge cover, light being excluded, but air admitted through two small holes on either side. The cages were placed in sterilized pans, in a solution of permanganate of potassium, and were sterilized every other day. The animals were thus restricted to a small allowance of air, light and exercise, but were given the usual amount of food, and kept in as sterile cages as possible.

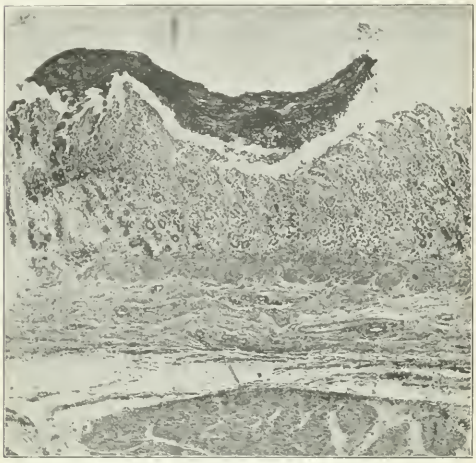


Fig. 11.—Stomach of dog, later stage, with necrosis of the mucosa. The plug is still adherent to the ulcer cavity. The surface epithelium has disappeared; disarrangement of glandular structure. (Low power.)

At the outset a blood count and hemoglobin estimation were made, and again after two to three months' confinement, and finally after seven to eight months. As soon as an animal

Fig. 12.—Stomach of dog. More advanced stage, with necrosis reaching almost the muscularis, exposing a small blood vessel. (Low power.)

showed any signs of infection it was removed. During the first two or three months the animals gained in weight as a result of deficient exercise and oxidation, but later became emaciated.

51. Turck: THE JOURNAL A. M. A., May 2, 1903.
52. Turck: Proc. C. Med. Soc., January, 1901; also Chicago Med. Rec., vol. xxi, No. 1, 1901.

Red Cells.		Percentage of Hemoglobin		Months.	Result.
Before	After	Before	After		
6,408,000	3,296,000	85	75	4	Ulcer
5,840,000	4,900,000	80	70	4½	Ulcer
6,410,000	4,850,000	85	60	6	Ulcer
4,992,000	4,200,000	75	60	5½	Ulcer
5,120,000	4,250,000	70-75	60	3	Ulcer
5,360,000	4,120,000	80	65	6	Ulcer
6,200,000	3,130,000	85	65	6	No ulcer
5,450,000	3,800,000	80	50-55	5	No ulcer

Result, after nine months: All the rabbits died. Of the 96 guinea pigs, only 6 survived. In 4 of these animals ulcers produced by removing portions of the mucous membrane failed to heal. Two induced peptic ulcers were found in the other 2 guinea pigs.

Fig. 13. Stomach of dog. Edge of ulcer reaching to the muscularis, showing marked degenerative changes with breaking down of the entire glandular structure. (Low power.)

For the first time, then, in the author's long series of experiments, induced peptic ulcers were formed, but in such a small per cent. of the animals that even positive results were of little value in solving the problem of the

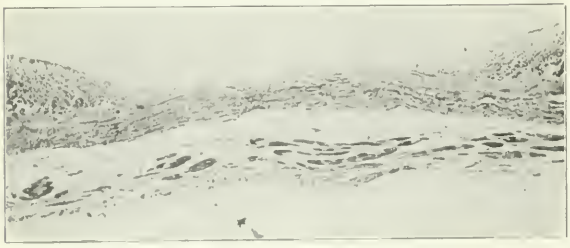


Fig. 14. Smooth walled ulcer. No inflammatory changes. (Low power.)

etiology of peptic ulcer. They suggested, however, the possibility that systemic conditions were important factors, that alterations in the toxic state of the alimentary canal, with consequent changes in the blood, might play some rôle in the formation of ulcers. The next step was to select some more definite means of modifying the normal conditions of the alimentary tract and general system.

Experiments were begun with *Bacillus coli communis* because it is the organism found normally present in such large numbers in the intestines, and is the organism which multiplies so luxuriantly in catarrhal and atonic conditions of the stomach. Morphologically and culturally no difference could be found between the strain of *B. coli* isolated from the stools of normal individuals, and that from cases of ulcer of the stomach. But the possibility of a difference in their pathology led the author to use in his experiments strains isolated from the feces of cases of ulcer of the stomach. The toxin of *B. coli* being intracellular suggested the experiments of using killed as well as living cultures. In my earlier experiments the bacteria were introduced directly into the circulation, but later they were fed the animals. By this latter method the bacterial status of the alimentary canal could be more directly modified, and a better approach be made to more natural conditions.

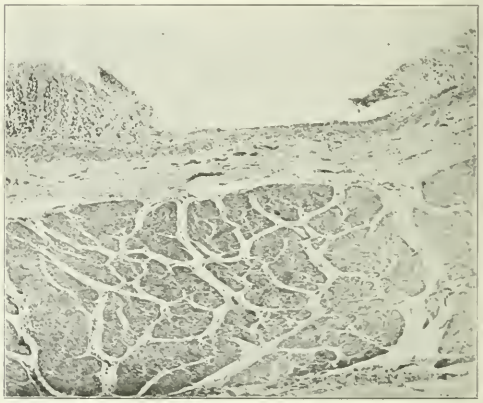


Fig. 15.—Ulcer with undermining of the mucosa. (Low power.)

Meat extractives were fed certain of the animals in connection with the bacteria, as will be seen by reference to the table of experiments with *B. coli*. It was found that *B. coli* grew most luxuriantly in media containing meat extractives, hence the possibility was suggested that a more active growth might be produced in an alimentary canal which contained meat extractives.

Positive results have been obtained thus far in every experiment in which cultures of *B. coli* were fed to dogs. The number and extent of the ulcers have varied, however, from a few ulcers in the duodenum to numerous typical peptic ulcers in the stomach. In one case death resulted from hemorrhage from a large ulcer at the pylorus.

To give these positive results true scientific value, it was essential to find out the percentage of gastric ulcer in a large number of dogs not experimented with.

The dogs were obtained from two different sources—one, healthy dogs that had been asphyxiated at the city pound; the other, dogs that had died from disease, injury, poisoning, etc. From the first source, 189 dogs were examined; from the second, 82, making a total of 271. Antemortem observations as to the general condition of the dogs could be made at the city pound, because the dogs were kept there ten days before being killed. The stomachs and intestines, after being removed from the bodies, were treated in a uniform manner, e. g., opened, washed in weak creolin solution, hardened for six hours in

dilute formalin, and finally examined very carefully macroscopically. Of the 189 healthy dogs examined, few showed any changes in the alimentary tract; of the 82 dying from disease, poisoning or injury, many showed diseased conditions of the various organs. But no peptic ulcers were found in either the stomach or intestine of any of the 271 dogs examined. Absolutely negative findings of peptic ulcers in both the healthy street dogs and the diseased animals shows that the percentage of ulcers present in dogs is at most exceedingly small.

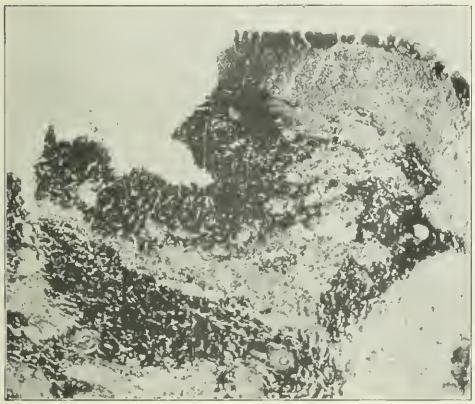


Fig. 16.—Destructive changes in the submucosa, showing necrotic areas which refuse to stain.

EXPERIMENT: WITH BACILLUS COLI COMMUNIS.

I. INOCULATION EXPERIMENTS WITH DOGS.
   1. Intravenous injections of living cultures of *B. coli communis.*
   2. Intravenous injections of cultures of *B. coli communis* killed by heat.

II. FEEDING EXPERIMENTS WITH MICE AND RATS.
   1. (a) Feeding raw beef.
      (b) Feeding raw beef and *B. coli communis.*
   2. (a) Feeding beef extractives.
      (b) Feeding beef extractives and *B. coli communis.*
   3. (a) Feeding extract free beef.
      (b) Feeding extract free beef and *B. coli communis.*

III. FEEDING EXPERIMENTS WITH DOGS.
   1. Feeding bouillon culture of *B. coli communis.*
   2. Feeding cultures of *B. coli communis* and beef extract.
   3. Feeding beef extract.

EXPERIMENTS IN INJECTING LIVING CULTURES OF B. COLI COMMUNIS INTO DOGS AND RABBITS (1, 1).

FIRST SERIES OF INJECTING EXPERIMENTS.

Methods.—The strain of *B. coli* used was isolated from water and from the feces of cases of ulcer of the stomach.

The injections were made subcutaneously, intraperitoneally, and into the internal jugular vein, at intervals of two to five days. Six dogs and twelve rabbits were used in this experiment. After a period of one month, the abdomen was opened under aseptic precautions, and an artificial ulcer made by removing a portion of the mucous membrane of the stomach. The injections were continued, and at the end of two weeks the abdomen was again opened.

Results.—In most of the animals the lesion was entirely healed, so that not even its site could be detected. Scars were visible in some of the stomachs and defective healing in others. In four animals ulcers were found, which did not show a tendency to heal.

SECOND SERIES OF INJECTING EXPERIMENTS.

Methods.—The strain of *B. coli* used was isolated from the feces of cases of ulcer of the stomach.

The injections were made into the external jugular vein of dogs and were continued for six months, at intervals of two to ten days. Four c.c of a twenty-four hour bouillon culture of *B. coli* was used for two months; then the amount was increased to emulsions of the surface growth of two petri dishes, and later of four petri dishes.

Results.—The reaction to the injection at first was anorexia and vomiting, with general lassitude for a day or two. After an interval of ten days the reaction to inoculation would be considerable, but would be much less pronounced, if the inoculation was then repeated in a day or two. Later, that is, after three months of such inoculation, no reaction could be obtained, even though large numbers of bacteria were introduced.

B. coli was agglutinated by the dog's serum in dilution 1 5,000 ten days after the first inoculation.

Operation.—An artificial ulcer was produced in the stomach four and one-half months after the first injection. The injections were continued two months longer.

Postmortem.—The dog was chloroformed three months after the production of the artificial ulcer, and the stomach and intestines examined for ulcers. The lesion produced at the time of the operation had entirely healed. No ulcers were found in the stomach. In the duodenum and ileum numerous oval-shaped raised areas were found, with depressed centers resembling Peyer's patches. The entire bowel was very pale, with the exception of a few hyperemic areas. Two irregular patches of erosion were found in the ileum. No ulcers were found in the intestines.

EXPERIMENT IN INJECTING INTRAVENOUSLY DEAD CULTURES OF B. COLI COMMUNIS (1, 2).

Methods.—The strain of *B. coli* was isolated from the feces of cases of ulcer of the stomach. The injections were made into the external jugular vein, and were continued for four months, at intervals of two to four days. Emulsions of the surface growth on two to eight petri dishes were used after being boiled to kill the bacteria. The constitutional reaction to inoculation was much less than in the case of living cultures.

Operation.—An artificial ulcer was made in the stomach three months after the first injection. The external wound healed readily. The injections were continued one month longer, and then the dog was chloroformed.

Postmortem.—No ulcers were found in the stomach. The duodenum showed six typical peptic ulcers, about 5 cm. from the pylorus. The ulcers were grouped together, somewhat oval in outline (6x1 mm.), transverse to the long axis of the bowel, with abrupt margins, and floor smooth and covered with a mucous-like accumulation (Fig. 8).

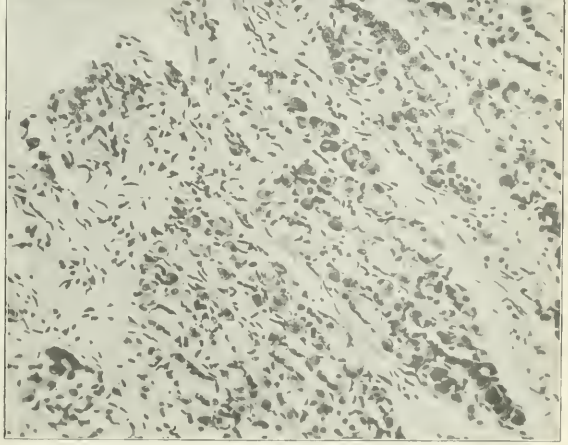


Fig. 17.—Showing the increased proliferation parietal cells and the degenerated, broken down and disarranged chief cells. Surface epithelium disappeared. (High power.)

FEEDING EXPERIMENTS WITH MICE AND RATS (II).

The object of these experiments was to determine the relative effect of the feeding of *B. coli communis* with and without meat extractives.

Methods.—The meat juice obtained by pressing raw beef was used in the experiments with beef extractives. The extract free beef was prepared from the pressed meat, and after being steamed under 15 pounds' pressure for one hour was again pressed and fed the rats dry.

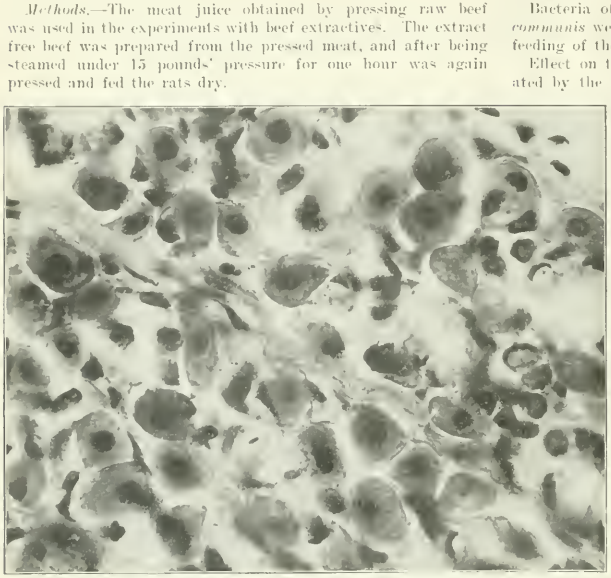


Fig. 18.—Showing the parietal cells. They are larger and increased in numbers, between them are seen a few degenerated chief cells. (Oil immersion, 1-12.)

Bouillon cultures of *B. coli* were added to the raw beef in one experiment, to the beef extract in a second experiment, and to the extract free beef in a third experiment. The rats were given as much of the cultures as they would take. As controls a second series of rats were given raw beef, beef extract and extract free beef respectively. The experiment was continued one month.

Results.—At the end of a month the rats fed on extractives and extractives containing *B. coli* died. The other rats of the series were killed at the same time for comparison.

During the course of the experiment little if any difference was noted in the behavior of the rats fed meat and extract free beef with and without bacteria. The extractive fed rats showed some bloating of the abdomen early in the experiment. They drank readily all the extractives and cultures fed them, but appeared restless and hungry.

Postmortem.—Negative so far as macroscopic appearances were concerned in all except the extractive fed rats. These showed a marked decrease in fat. Their organs, especially the liver, were pale in color.

FEEDING EXPERIMENTS WITH DOGS (III).

FEEDING BOUILLON CULTURES OF B. COLI COMMUNIS (III, 1.)

Methods.—Increasing quantities of a 24 to a 48 hour growth of *B. coli communis* in bouillon were fed daily to the dogs, together with an ordinary meat diet, beginning with small amounts and increasing to 1,000 c.c. Watery emulsions of the surface growth on agar plates were occasionally substituted.

The strain of *B. coli communis* used was obtained from the feces of cases of ulcer of the stomach. The length of time of feeding the dogs varied, in one case being 81 days before death occurred, and in another case 102 days.

RESULTS OF THE FEEDING.

Bacteria in Blood: The blood remained sterile during the course of the experiment. The heart's blood at death was also sterile.

Bacteria of the Stomach: Nearly pure cultures of *B. coli communis* were obtained from the stomach 9 hours after each feeding of the bacteria.

Effect on the Blood.—Agglutination: *B. coli* was agglutinated by the dog's serum in dilution 1 to 500 and slightly in dilution 1 to 1,000 after 20 days' feeding. Marked hemolysis of the blood was present 20 days after feeding.

Coagulability: Coagulation of the blood was slow, the clot formed being soft.

General Constitutional Reaction: The dog appeared perfectly normal until one week before death, when symptoms of hemorrhage gradually developed, e. g., coffee ground vomit, tarry stools, loss of strength and appetite, lowered temperature, with death in shock.

Postmortem.—Dog No. 1 (Series III, 1). Liver and kidney showed marked venous congestion. Stomach and intestines contained coffee-colored liquid. Stomach had large blood clot at pylorus and some coagulated blood over mucous membrane. Multiple peptic ulcers were found in the stomach and one large one at the pylorus, from which the hemorrhage occurred, resulting in death (Figs. 2, 3, 4).

Dog No. 2 (Series III, 1). A dog which had been under feeding experiment with *B. coli* was placed under anesthesia, abdomen opened, stomach found flabby and a small well-formed ulcer was found on anterior wall near the pylorus, which perforated on inflation of the stomach with air; the contents escaped through the opening, which showed sharpened edges ("punched out" appearance) the size of a dime; about a pint of fluid was found in the stomach; free HCl absent; peptones present.

Dog No. 3 (Series III, 1). Dog fed 500 c.c. bouillon cultures of *B. coli* daily for two months, then chloroformed.

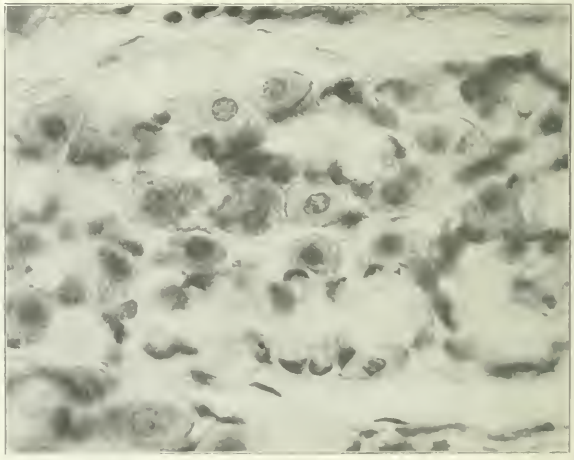


Fig. 19.—Showing the parietal and chief cells. Note the large size of the parietal cells, showing beginning degeneration; also, the crescent shaped nuclei of the degenerated chief cells. (1-12 oil immersion.)

At postmortem the stomach was found to be large, full of food. Mucous membrane hyperemic. In the pylorus were 6 round, pale colored raised areas about 3 mm. in diameter, with central depressions, margins raised and somewhat irregular in outline. No ulcers were found in the stomach.

Intestines.—Mucous membrane pale. In the duodenum were

three typical peptic ulcers in the wall opposite to the mesenteric attachment longitudinal to the axis of the bowel, circular in outline when stretched. Floor of the ulcers was smooth, clean cut, margins raised and abrupt (Fig. 5). No ulcers were found in the ileum or colon.

FEEDING BOUILLON CULTURES OF B. COLI COMMUNIS AND BEEF EXTRACTIVES (III, 2).

Methods.—Beef extract was fed the dogs in saturated watery solution or in capsules, approximately 25 gm. being fed daily, together with an ordinary meat diet. Cultures of *B. coli communis* were fed as in experiments III, 1. The length of time of feeding the dogs was 104 days.

RESULTS OF THE FEEDING.

Effect on the Blood: Experiments III, 2, same as in experiments III, 1.

General Constitutional Reaction.—Diarrhea was produced in three days, which lasted four to six days and was more pronounced in the case of the *B. coli* fed dog. Whenever during the course of the experiment the above feeding was stopped for a few days, there was a recurrence of the diarrhea on beginning the feeding again. With the exception of the above diarrhea both dogs remained perfectly healthy for three months, then the *B. coli* fed dog began to show some slight indisposition.

Operation.—After 100 days' feeding of beef extract and *B. coli communis* an exploratory operation was made, but no ulcers of the stomach were found. An artificial ulcer was made by removing a small portion of the mucosa in the posterior wall near the pylorus. Three days after the operation the dog died of peritonitis resulting from perforation of the artificial ulcer (Fig. 1).

Postmortem.—General peritonitis. Perforation of the stomach at site of artificial ulcer. Perfect closure of incision in anterior wall of the stomach made at the time of operation, with no signs of inflammation there. Venous congestion of liver and kidney. Duodenum showed 13 peptic ulcers (Figs. 6 and 7).

HISTOLOGIC EXAMINATION OF LIVER, KIDNEY, STOMACH AND INTESTINES OF DOG OF EXPERIMENT III, 1.

Dog died of hemorrhage from pyloric ulcer after being fed cultures of *B. coli* for 81 days.

Liver.—Marked degenerative changes are present in the liver cells of the central portions of the lobules. The liver columns here are broken up into one or more cells. The cells have a shrunken appearance, are irregular or roundish in outline, stain diffusely with eosin, or are broken down as granular or vacuolated masses. In these cells the nuclei have disappeared, while in others the nuclei appear as faintly bluish irregular rings. In the peripheral portion of the lobules, the liver cells contain numerous small vacuoles, are somewhat granular, and stain fairly well. The liver columns throughout are compressed by the congestion of the intertubular capillaries. Many leucocytes are seen in these vessels.

The blood vessels in the portal system are all engorged with blood. There is no increase in the stroma of the portal system, but it has an edematous appearance. The bile ducts are closed by their swollen epithelial cells.

Kidney.—Histologic examination of the kidney sections also shows marked degenerative changes. These are present largely in the secretory (convoluted) tubules. The epithelial cells lining these tubules are swollen and cloudy and fill the lumen of the tubules; others are granular and vacuolated; their outlines have disappeared, are fused together and broken down. In these cells the nuclei stain very poorly or have disappeared. The glomeruli have a swollen or cloudy appearance. The capillaries of the tufts are engorged with blood. The glomeruli are separated from Bowman's capsule, the spaces of which are filled with granular detritus.

The tissue throughout has an edematous appearance. The intertubular capillaries are all distended with blood.

Intestine.—Histologic examination of the sections from swollen Peyer's patches shows acute catarrhal changes with marked swelling of the follicles. The surface of the mucosa is covered with a bluish-stained, viscid mucous material in which are intermingled many detached epithelial cells, some leucocytes red blood cells and bacteria. Some of the surface epithelial cells have an elongated appearance, the ends of which are lost in the exudate. The glands are all swollen and filled with bluish homogeneous material. The goblet cells are swollen and filled with mucus. The capillaries in the mucosa are all engorged with blood. The Peyer's patches are well defined and swollen. There is a great increase in lymphoid cells in the follicles as well as surrounding the follicles infiltrating the surrounding tissue. The central portions of the follicles are paler and stain pinkish with eosin, due largely to an increase of the epithelial cells, many of which are undergoing degeneration. There are no changes in the other coats except the engorged blood vessels.

Stomach.—For histologic examination, sections were taken from various areas of the stomach wall, e. g., those which showed typical ulcers; those with slight defects in the mucosa, and others in which no changes could be detected with the naked eye. The tissues were hardened in bichrom-acetic-alcohol imbedded in paraffin and stained with the usual stains, hematoxylin and eosin, polychrome methylen blue and toluidin blue, etc.

For the sake of clearness those sections will be described first which appear almost normal and show the least changes, followed by those which show changes of a more marked character. As seen in Figure 9 the mucous membrane has a normal appearance; the glandular structures are all fairly well preserved. Here and there the surface columnar epithelial cells are disarranged or entirely broken away (possibly due to the technic), exposing the connective tissue stroma of the columns. The stroma in the mucosa appears normal in amount and shows no changes. The capillaries are tortuous, distended with blood and plainly seen beneath the surface and the deeper portions of the mucosa. The chief cells of the glands do not show very well and their arrangement is somewhat broken up; otherwise they appear normal. The parietal (acid) cells are prominent, large, stain well and show an occasional mitotic figure or a deeply stained nucleus. In certain areas they appear to be increased in number.

Catarrhal Stage (Fig. 10.)—In tracing the different stages of the formation of ulcer, the catarrhal stage appears to be the earliest. First we find the surface of the mucosa covered by a more or less homogeneous pink (eosin) stained material, which has a resemblance to serum and in which are seen many red blood corpuscles, a few leucocytes, fragments and débris of detached columnar epithelial cells and many long bacilli. In other sections the material on the surface is made up of bands or layers, staining blue or bluish red with polychrome methylen blue and toluidin blue. From the staining reactions and appearance this material consists largely of mucus. These mucous bands also dip down into the neck of the glands, almost to one-half of their depth, and on close examination with the high power are shown to be intimately connected with the columnar epithelial cells. The surface epithelium and the cells lining the glands are well preserved, especially in the deeper portions of the mucosa.

In some areas, the surface cells are detached in groups and have a swollen appearance. The protoplasm of the cells is vesicular and vacuolated. Their shape is oval, elongated, spindle-shaped and tortuous. They usually have a greatly elongated and drawn out appearance like strings. The nuclei of these cells have an elongated and flattened appearance, and stain diffusely. These elongated cells become lost or appear to be intimately connected with the mucous bands which cover the surface of the mucosa and which fill up the glands themselves. As a result of the accumulation of this material, the glands are greatly distorted, the necks or openings of the glands widened or pressed apart. The deeper glands in the mucosa, also show a swollen appearance, their lumen being closed by the swollen cells. The protoplasm of these cells stains reddish blue (polychrome methylen blue) and is highly granular. The stroma of the mucosa has a swollen edematous appearance. In some areas there is a great infiltration with red blood corpuscles and a few leucocytes. All the blood vessels (smaller veins and capillaries) in the mucosa and submucosa are engorged with blood. The muscularis is normal.

From the above description it will be seen that we have in these sections, first a great outpouring of mucus, some serum and red blood corpuscles, followed by desquamation of the surface and lining cells of the glands, and later a mucoid degeneration of the cells themselves, which become entangled and intimately connected with the mucous secretion of the surface, and through various influences are easily detached or broken away from their lining, leaving defects underneath.

The further process with loss of the glandular tissue is the next step in the formation of ulcer which can be seen in another series of sections taken from a different area of the stomach walls, and which is shown well in Figures 11 and 12.

As shown in the photographs, there is a necrotic mass fitting into the concavity of the mucosa or supposed ulcerated area. In some sections the base of the concavity in the mucosa reached to the muscularis. The necrotic mass may still be connected to the mucosa by bands or may lie loosely attached, giving the edges a ragged appearance. With the high power the necrotic mass is seen to be composed largely of detached, proliferated and broken-down cells derived from the mucosa, and is made up of thick bluish stained bands, in which are entangled epithelial cells, acid or parietal cells, red blood corpuscles, and connective tissue cells. The glandular structure beneath the necrotic mass on either side is greatly disarranged and has lost the glandular outline.

The epithelial cells (chief cells) are scattered irregularly throughout the stroma (Fig. 17). They show marked degenerative changes; are small and irregular in shape; their protoplasm is vacuolated and the cell body deformed or compressed, while their nuclei are small, elongated, distorted and pale or refuse to stain. These chief cells seem to be crushed out of existence largely by the acid or parietal cells. The latter are so numerous that they almost replace the entire field of the mucosa and are proliferating in large numbers. The proliferation of the parietal cells is a marked feature in all these sections (Figs. 17, 18, 19). Mitotic figures are very numerous; many of the cells contain two nuclei. They vary in size, being sometimes two and four times their natural size. Hand in hand with proliferation of these cells there are also degenerative changes going on. The protoplasm stains deeply or poorly, or may be granular or broken up. Some cells are vacuolated and swollen; their nuclei appear vesicular, granular and have a pale and distorted appearance. These cells in some areas are so numerous that 50 can be counted in a single field with the high power. The connective tissue stroma in these areas is disarranged or broken down by the proliferated cells. Underneath the necrotic mass the stroma has lost its usual character; it is looser in texture, fibrillar or homogeneous and granular and refuses to stain well; throughout the stroma in these areas there are hemorrhagic extravasations. As the various cellular elements break down, the loosely fibrillar stroma collapses and later also breaks down, leaving larger and smaller defects in the mucosa.

Some distance away from this area the stroma appears somewhat increased. The surface epithelium has more or less disappeared or become detached, exposing the stroma underneath. Here also is active proliferation of the parietal cells; they are seen in solid columns, one on the other, while the chief cells are disarranged and imbedded between the parietal cells. The chief cells are small, irregular, vacuolated and distorted with peculiar vesicular nuclei, or they may be so overwhelmed by the parietal cells that their outlines are lost.

The mechanical factor in the destruction of the chief cells by the proliferated acid cells is only a secondary feature.

Primarily marked cytolytic changes are to be noted in the chief cells themselves. In areas where the glandular structure is fairly well preserved, the chief cells may still be attached to the basement membrane, or if detached, lie loosely in the lumen of the glands. Here the chief cells are small, distorted and shrunken, with almost complete loss of protoplasmic contents. Their nuclei are peculiarly distorted into half-moon shapes and stain faintly, the cells appearing in areas as shadow ghost cells. These changes are purely cytolytic.

Other sections of this series show more advanced stages of the same process. As seen in Figure 12, the necrotic mass has dropped out or broken away, exposing a more or less well-defined, irregular smooth ulcer, reaching almost to the muscularis and exposing at the base a larger sized blood vessel, which is broken down, showing how hemorrhages occur. Otherwise the changes are as described above. There are no changes in the submucosa or muscularis except engorgement of the veins and capillaries with blood.

DESCRIPTION OF THE TYPICAL ULCER.

The typical ulcer, as shown in Figures 13, 14, 15, is a well-defined smooth-walled concavity. It gradually slopes inward and downward from either side to the base at the muscularis mucosa. In some sections the concavity is more or less square, or somewhat irregular in outline; in others the edges may be overlapping with undermining beneath. The edges or walls of the ulcer as a rule are smooth and consist of remnants of the stroma. It is a poorly stained or colorless loose fibrillar, almost fibrin-like, homogeneous or granular material, in which are imbedded round, oval or elongated nuclei, fragments of epithelial cells especially parietal cells, which in certain parts are fairly well preserved and stain well. There are no inflammatory changes of any kind present. The same appearance of the stroma is noted some distance from the ulcer. The surface of the mucosa has the same appearance as the edges of the ulcer. The surface epithelium has all disappeared. The deeper glands show changes as described in previous specimens. The chief cells are disarranged and crowded out by the large increased number of the parietal cells. The deeper glands are fairly well preserved, but have a swollen, cloudy and granular appearance.

The outline of the cells has disappeared and the individual cells have fused together, so that the gland is composed of a coarsely granular mass, through which are scattered deeply stained nuclei. Some of these glands in cross section show the early changes in the parietal and chief cells. The chief cells are swollen, opaque or coarsely granular, while the parietal cells show beginning proliferation. They stain intensely pink (eosin), are increased in size, and crowd or press the chief cells inward into the lumen of the glands. In the upper portion of the mucosa the glandular outline becomes gradually deranged. The parietal cells are increased in number, while the chief cells crowded in between are small, appear as shadows or have disappeared. Usually nearer the ulcer, both kinds of cells are scattered irregularly through the tissues. Degenerative changes are seen in both kind of cells, but they are more pronounced in the chief than in the acid cells.

SUMMARY.

According to my experiments the factors concerned in the production and persistence of ulcer of the stomach

and duodenum appear to indicate a dual condition. Some toxic condition seems to be produced which overcomes natural resistance, resulting in cytolysis, and possibly some chemical substances formed within the alimentary tract, which when absorbed may neutralize the protective bodies in the blood and tissues resulting in autocytolysis.

This hypothesis must present itself after a careful study of the local and systemic changes that take place in the production of induced peptic ulcer. In my experiments in feeding cultures of the colon bacillus, pronounced changes were revealed in the blood and tissues. Agglutination of *B. coli* by the dog's serum in high dilution was noted; hemolysis of the blood was evident; cytolysis and autocytolysis of the cells of the mucous membrane of the stomach, of the kidney and of the liver were marked on microscopic examination. But there was no bacteriemia, no inflammatory reaction in the form of round cell infiltration such as one would expect in a reactionary inflammation induced by pyogenic micro-organisms or toxins. It was not the picture of reaction to an infection, not the picture of a local, acting agent, but rather of a systemic condition, and of an induced cellular change.

What have we accomplished by our experiments? Gastric ulcers have been produced by other investigators, as will be seen by reference to the literature, but for the first time we have, by our feeding experiments, brought about spontaneous or induced peptic ulcer in the stomach and duodenum. We are as yet at the experimental threshhold, for our experiments have been comparatively few in number, but a percentage of 100 in our results signifies a true grasp of an etiologic factor. We are at least justified in saying that we have now a firm working basis for the further investigation of the pathogenesis of gastric ulcer. There are now a number of problems before us under investigation. Perhaps the widest field is opened in the study of the blood changes in these animals. Further determinations must be made of the hemolytic, agglutinating, bacteriolytic and phagocytic strength of the blood, and its coagulability, reaction, the action of the serum on digestion, the hemoglobin curve, the number of red and white blood corpuscles and the differential count of the leucocytes. It is of prime importance that the pathology of ulcer be further studied by histologic examinations of the ulcers at various stages of their development, that an examination be made also of the liver, kidney, spleen, lymph glands and bone marrow. The problem of altered metabolism must be studied by an analysis of the urine, feces, stomach contents, etc. It must be determined also whether the feeding of bacteria other than *B. coli* will produce ulcer, and whether all animals are equally susceptible.

CONCLUSIONS.

1. Ulcer of the stomach and duodenum can be produced in dogs by feeding *B. coli communis* for a variable length of time.

2. We have now for the first time a firm basis by which to solve the finer or underlying etiology of ulcer.

TRYPSIN IN MALIGNANT GROWTHS.

W. A. PUSEY, M.D.
CHICAGO.

Following the experiments of Beard of Edinburgh with the use of trypsin in Jensen tumors in mice and his suggestion for the use of trypsin in carcinoma, many attempts undoubtedly are being made at present with trypsin in inoperable malignant growths.

I have used trypsin in seven cases of inoperable carcinoma in different parts of the body and in one inoperable round-cell sarcoma of the thigh. I began the work ten weeks ago, and in some of the cases continued the injections for six weeks. All except one were hopeless cases from the standpoint of operation or *x*-rays, but in none of them was cachexia marked. I have used Fairchild's sterilized trypsin solution with the commercial name of *injectio trypsi*, which, I believe, was the preparation used by Beard. Beard's successful dose of one drop in mice is equivalent to 600 drops in an adult of 150 pounds weight. I began with injections of from 5 to 10 drops daily, and in some cases rapidly increased it to a maximum dose of 60 drops daily.

The results can be readily epitomized. Sometimes the doses—whether small or large—caused little pain and no subsequent irritation at the site of injection; in one or two patients there was bitter complaint occasionally after an injection; frequent inflammatory swellings resulted, and in six or eight instances abscesses developed at the site of injection. These developed several days after the injections, and I believe the question of accidental infection can be eliminated because the injections were given with scrupulous attention to aseptic technic and other patients who were having hypodermic injections at the same time of other drugs developed no abscesses. The abscesses which formed began as ordinary phlegmonous swellings. When they opened there was a discharge, not of ordinary pus, but of a thick, sticky, almost transparent serous fluid containing broken-down cheesy masses. After evacuation of an abscess there was left an unhealthy sinus with dirty-grayish, flabby walls, and in three or four instances these enlarged until they formed unhealthy, deep, indolent sinuses of the diameter of a finger or larger. These are slow to heal, but are painless.

I think that in one case in which there was a circumscribed mass of carcinoma in the pectoral muscle on the front of the shoulder there has been very distinct benefit from the injections. In this case there was a phlegmonous swelling which was opened with the discharge of more than two ounces of fluid and broken-down tissue, but the opening did not become larger and the cavity is now healed. As a result of the procedure the carcinomatous mass has disappeared as though it had been digested. I believe that in this case positive benefit has been done.

In the other cases I believe appreciable harm has been done to the patients. In several instances after large injections the patients have had chills. Except for these chills, there has been no immediate constitutional effect; but in all the patients who had numerous injections cachexia has developed and they have failed more rapidly than they were failing before. The experience has been so uniform that I have no doubt the trypsin has done the patients harm. The one case in which there has seemed to be benefit showed only a circumscribed mass, and in a similar case I should try trypsin again, but unless I could hope with a few injections to destroy a localized mass I should not at present feel justified in using the remedy. In none of the other cases has there been any appreciable influence on the neoplasms.

I know that so short and so small an experience is in no way convincing, but, as it has forced on me some conclusions and as there are no published reports on the effect of trypsin in human carcinoma, I venture to believe the experience is worth recording at this time.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XXIV.

Parasiticides and Antigonorrheics.

It will be convenient to consider under this head, agents used for parasites other than bacteria, which infest the skin and intestines, together with a brief reference to the antigonorrheics.

Cleanliness prevents nearly all hurtful skin parasitism, and the only one which we shall consider here is that of the pediculi, since other forms are commonly treated more advantageously by the specialist.

The louse which infests the head requires no medication, since it is easily removed with a fine comb and thorough washing with tar soap. The ointment of red mercurie oxid or red precipitate has been used as a popular domestic remedy, and the tincture of larkspur or of stavesacre, to be mentioned again later, may be useful in many cases.

The louse which infests the genital regions, *Pediculus pubis*, is smaller and more difficult to remove mechanically.

A dilute solution of mercuric chlorid (corrosive sublimate) is sometimes used and is very effective for this troublesome parasite. It should not be stronger than one to five hundred (2 grains to 2 fluidounces or 0.1 gm. to 50 c.c.), and this should be used cautiously. A less cleanly but very efficient remedy is mercurial ointment.

A 20 per cent. tincture of staphisagria, or of larkspur, diluted with water, bay rum, dilute alcohol or soap liniment is much used in some parts of the country.

Among the names of staphisagria which indicate its common use are semen staphidis pedicularis and läusekörner.

In lieu of the unofficial tincture the now official:

FLUIDEXTRACTUM STAPHISAGRIÆ.—U. S.—Diluted with from 8 to 10 parts of soap liniment, or of bay rum, will be found equally serviceable.

It may not be amiss to call attention to the fact that carbolic ointment not only kills the troublesome chigger, but also relieves the smarting which that parasite occasions, or which is more frequently caused by scratching the place where the parasite is embedded.

ANTHELMINTICS.

The term anthelmintic, meaning literally against a worm, embraces vermifuges and teniafuges, which expel the round and tape worms, respectively, and vermicides and tenicides which kill them; but, as a matter of fact, the parasites are rarely killed before their expulsion.

Küchenmeister attempted to establish a rational basis for the use of anthelmintics, more than fifty years ago, but his work, which was widely quoted for a long time, has but little value at present.

v. Schroeder studied the effects of a large number of agents on ascarides and found that the latter are remarkably resistant to poison placed in the media with the parasites, which are to a certain extent able to resist absorption. These parasites are surrounded by a chitinous substance, and when that is not acted on by the agent the mouth is the principal means of ingress to their bodies. Santonin, even in concentrated solution, was found to be harmless to the parasite, which, however, found it objectionable and sought to escape from the solution containing it, the movements being particularly active; from this it would appear that santonin drives the round worm out of its normal habitat into the large intestine, from which it must be swept by purgation.

The statement that the presence of castor oil greatly increased the toxicity of santonin for this parasite arose from a mistake, and santonin is now usually given with calomel. Since it is not intended to be dissolved in the stomach, a compressed tablet or lozenge of calomel and santonin is to be preferred. For the same reason, when santonin is given to a child, with a little sugar, the two substances should be lightly rubbed together without being powdered. Sodium santoninate which is soluble, should not be used, therefore, and it has, very properly, been dismissed from the later editions of our Pharmacopeia.

The following are among the now official substances that are useful as vermifuges.

SANTONICA.—U. S.—Santonica or Levant worm seed, as it is frequently called, is officially described as the dried unexpanded flower heads of *Artemisia pauciflora*. It is now but seldom employed as such, being generally displaced by:

SANTONINUM.—U. S.—Santonin, the inner anhydride or lactone of santonic acid, obtained from santonica, was discovered in 1830, by two German apothecaries, quite independently of each other, Kahler in Düsseldorf, and Alms in Mecklenburg.

Average dose: 0.06 gm. (1 grain).

SPIGELIA.—U. S.—Spigelia or pink root is the dried rhizome and roots of *Spigelia marilandica*.

Average dose: 4 gm. (60 grains).

FLUIDEXTRACTUM SPIGELIÆ.—U. S.—This is made with diluted alcohol and is the preparation now generally used when this drug is to be administered.

Average dose: 4 c.c. (1 fluidrachm).

OLEUM CHENOPODII.—U. S.—Oil of chenopodium is a volatile oil distilled from *Chenopodium anthelminticum*, more popularly known as American wormseed.

Average dose: 0.2 c.c. (3 minims).

QUASSIA.—U. S.—The wood of *Pierasma excelsa*, Jamaica quassia, or of *Quassia amara*, Surinam quassia, is most frequently used in the form of a decoction or an infusion, made in accordance with the general formulas for these several preparations.

Average dose: 0.5 gm. (7½ grains).

EXTRACTUM QUASSIÆ.—U. S.—This is an aqueous extract and represents ten times the weight of the crude drug.

Average dose: 0.06 gm. (1 grain).

FLUIDEXTRACTUM QUASSIÆ.—U. S.—This is directed to be made with a mixture of three parts of alcohol and six parts of water.

Average dose: 0.05 c.c. (8 minims).

TINCTURÆ QUASSIÆ.—U. S.—This is a 20 per cent. tincture and is made with 35 per cent. alcohol.

Average dose 2 c.c. (30 minims).

The *Ascaris lumbricoides*, or round worm, is a very common parasite in the small intestine of children particularly. The most useful remedy for this parasite is santonin; this has been given in a variety of methods. Some authorities recommend from one-half to one grain (0.02 to 0.05 gm.) morning and evening during three days for a child and on the fourth day a purgative. This suggestion was evidently based on the supposition that the parasites were killed or injured and were then to be swept out, but since we know that this is not true, the method in vogue at the present time is to combine santonin with a slowly acting purgative, such as calomel in small doses. The purgative should follow the santonin in a few hours at the latest. It should be remembered at all times that santonin is not an absolutely safe remedy and that it is far better to try a small dose and to repeat it in a few days if not effective than to give the maximum dose in the beginning.

A lozenge containing half a grain (0.03 gm.) of santonin given morning and evening, to a child, for three days will usually be found effective. Twice this dose is used for an adult.

If it is desired to give santonin in powders, it may be prescribed somewhat as follows:

℞ Santoni (cryst.) . . . . . grs. iii 0.2
Sacchari . . . . . grs. xxx 2
M. Et in chart. No. vi div.
Sig.: One powder night and morning, the last dose to be followed by a purgative.

The purgative may consist of calomel or syrup of senna, or, according to the more modern teaching, 1/6 grain (0.01 gm.) of calomel may be directed to be incorporated in each paper. The mixture should be dispensed in granular form and not finely powdered. Santonin taken in this way has very little taste.

While santonin is perhaps the most effective remedy we have for ascarides, the fluidextract of spigelia has been recommended and is said to act somewhat like santonin. It is recommended that a laxative be given before the spigelia and a purgative some hours later, or the combination of pink

root and senna, that was at one time quite common, may be preferred.

Spigelia, however, has also given rise to toxic symptoms in children.

Oil of chenopodium, or oil of American wormseed, has long enjoyed a certain reputation, particularly as a housebold remedy, tor round worms. It has a very disagreeable odor and taste. It may be given combined with castor oil, or from one to three drops may be mixed with sugar for a child.

The thread worm or pin worm, *Oxyuris vermicularis*, infests the rectum and colon, and is often spoken of as the seat worm.

The common anthelmintics, such as santonin, together with purgatives, are usually effective in removing them, but they sometimes prove very troublesome and difficult to dislodge.

Injections of large amounts of watery infusions are often useful. Infusion of quassia enjoys an especial reputation, it lessens the mucous secretion and probably increases the movements of the parasites, which facilitates their removal when the bowel is emptied.

As suggested in connection with the official preparations of quassia, an aqueous infusion of the extract or even a correspondingly diluted fluidextract may be used, with some promise of satisfactory results, in cases in which the infusion can not be readily obtained.

Phenol has also been recommended, but the danger of absorption entirely precludes its common use.

Osler recommends the cold injection of a strong solution of common salt for children, repeated for ten days at least. The hips are elevated to favor the retention of the injection as long as possible.

TENIAFUGES.

Remedies used for tape worm are commonly spoken of as teniafuges, even though the parasite may belong to a different genus, but as a matter of fact, the *Tænia saginata*, which is derived from beef, is very much more commonly found in the human intestine, while *Tænia solium* from swine is met with much less frequently in man.

Bothriocephalus latus is mentioned in all text-books, but as it is extremely rare in this country, and practically never originates here, it may be disregarded in this place.

Male fern, or the much more widely used oleoresin, which fully represents the rhizome, is said to be very much less efficacious against the *Tænia* than against the *Bothriocephalus*, while pelletierin, obtained from the bark of pomegranate root, is especially efficacious against the *Tænia*. If this be true, we have but another example of our tendency to take everything originating in Germany as being universally correct, without exercising our own judgment, for male fern has certainly enjoyed a greater popularity than the circumstances appear to justify. On the other hand, its wide use in northern Germany is more rational, since the *Bothriocephalus* is very commonly found there in man.

v. Schroeder found that one part of pelletierin in ten thousand parts of a solution containing 1 per cent. each of sodium chlorid and sodium carbonate, was very rapidly fatal to *Tænia serrata* and to *Tænia inermis*, while much stronger solutions were practically harmless to round worms.

Estimating the content of the human intestine at 200 c.c. after purgation, if only 0.2 gm. (3 grains) of pelletierin escape absorption from the stomach and pass into the intestine, it would be present in the proportion of one part in one thousand of intestinal content, or ten times the concentration found necessary by von Schroeder.

Pelletierin is but mildly toxic to man, hence it appears to be an almost ideal teniafuge or tenicide.

Kamala, which was formerly official, and is still used, acts as an intestinal irritant, causing purging and therefore requires no subsequent purgative. It is said to be effective against tenia and is usually administered in substance, being given in doses of from 4 to 8 gms. (one to two drachms).

Kostoxin, obtained from kousso, resembles male fern in its pharmacologic action, but is said to be efficacious against *Tænia* as well as against *Bothriocephalus*.

Aspidium, or male fern, has repeatedly given rise to toxic symptoms and death has occasionally followed its use. It is apparently inferior to pomegranate in the treatment of tenia, and there seems to be little reason for giving it the preference.

Filicic acid was formerly regarded as the active principle, however, it seems that there are a number of principles which share the action.

Pepo or pumpkin seed enjoys some reputation as a teniafuge, but is not often prescribed alone. It has, at least, the advantage of not being toxic to the patient.

Some Official Substances Used as Teniafuges.

ASPIDIUM.—U. S.—Aspidium, or male fern, the dried rhizome of *Dryopteris Filix-mas* or of *Dryopteris marginalis*, was known to Dioscorides, and advocated by him as being an efficient remedy for tape worm, but fell into disuse and was subsequently nearly forgotten until revived as a secret remedy, for the same parasite, about the middle of the eighteenth century.

Average dose: 4 gm. (60 grains).

OLEORESINA ASPIDII.—U. S.—Oleoresin of aspidium is now directed to be made with acetone. This preparation was first suggested by Peschier of Geneva, about 1825, and has gradually displaced the other preparations of male fern.

Average dose: 2 gm. (30 grains).

GRANATUM.—U. S.—Pomegranate, the bark of the stem and root of *Punica Granatum*, was also known to the ancients as a remedy for tape worm. It appears to have been completely forgotten and was introduced into Europe from India during the first decade of the nineteenth century.

Average dose: 2 gms. (30 grains).

FLUIDEXTRACTUM GRANATI.—U. S.—Fluidextract of pomegranate is made with a menstruum of diluted alcohol containing 10 per cent. of glycerin.

This is a new addition to the Pharmacopeia and has, as yet, not been widely used.

Average dose: 2 c.c. (30 minims).

PELLETIERINÆ TANNAS.—U. S.—Pelletierin tannate is officially described as a mixture, in varying proportions, of the tannates of four alkaloids (punicin, iso-punicin, methyl-punicin and pseudo-punicin) obtained from *Punica Granatum*.

Average dose: 0.25 gm. (4 grains).

CUSSO.—U. S.—Kousso, also known as kosso, koso and Brayera, consists of the dried panicles of the pistillate flowers of *Hagenia abyssinica*. It was discovered by Bruce, about 1768, but was not generally known as an anthelmintic until after Brayer, in 1822, published his observations on the use of the drug in Constantinople. Kousso is usually administered in the form of an unstrained infusion, the object being to secure mechanical irritation by the hairs which are found on the flowers, but they probably play only a minor part in the action of the drug.

Average dose: 16 gms. (240 grains).

PEPO.—U. S.—Pepo, or pumpkin seed, the ripe seed of *Cucurbita Pepo*, is usually administered in the form of the ground seed, deprived of the hull, or, as an emulsion, prepared by treating the ground seed with hot water.

Average dose: 30 gm. (1 ounce).

The tannate of pelletierin, being but slightly soluble, is preferred as a teniafuge, but it is somewhat expensive, and the decoction of the root bark is therefore frequently directed. It has been suggested that the alkaloid, being volatile, is driven off in the process of boiling, but the loss in this way has proved to be unimportant. The fresh bark is much more efficacious than that which has been kept for some time. It is stated that the deterioration is due to chemical change that takes place in the alkaloid.

As we have no means of knowing the quality of the bark which will be used in making the decoction, it is better to use the pelletierin tannate or to direct the preparation of an extract[1] made according to a formula devised by von

1. The ground bark is exhausted by heating with water on a water bath for an hour, the decoction is cooled, milk of lime is added in excess, the mixture filtered, water being added to the precipitate to wash out the alkaloid, the washings added to the filtrate, the filtrate neutralized with dilute sulphuric acid and again filtered. It may be taken in this form, after adding about a gram of tannin, or the neutralized filtrate may be evaporated on a water bath until nearly solid, and then extracted with 70 per cent. alcohol, this is then filtered and subsequently evaporated to a dry extract which is approximately equal to pelletierin.

Schroeder to enable one to get a fairly uniform product regardless of the quality of the bark used.

About one gram or less of the extract, together with one or two grams of tannin, constitute the ordinary dose for tape worm.

Pomegranate root bark contains a large amount of tannin, too much, in fact, considering the amount of bark required to yield the requisite amount of pelletierin, hence none has to be added to the decoction. So abundant is the tannin that it may cause vomiting and defeat the purpose for which the dose is given, hence the extract mentioned has a decided advantage over the decoction.

The following is the method of using pelletierin tannate, the extract described above, or the decoction. Beginning in the evening the patient takes a light meal, which should be exclusively of carbohydrates, and then a laxative; on the following morning, while fasting, he takes 0.4 to 0.5 gm. (6 to 8 grains) of pelletierin tannate, or a corresponding amount of the extract or decoction, followed in half an hour to two hours by a brisk purgative, such as castor oil or syrup of senna.

Of 33 cases treated in this way, the entire parasite, including the head, was removed in 29 cases. Failure in some cases is to be attributed to the head being securely protected by the folds of the mucous membrane.

It is somewhat significant that the many formulas which have acquired some reputation in the treatment of tape worm contain pomegranate bark. The following taken from Osler is almost identical with a formula which has been held as a proprietary by a southern firm for a great many years, among whose patrons it enjoys a considerable reputation:

R. Granati	3iv	15
Pepo	3i	30
Ergotæ pulveris	3i	4
Aquæ bull.	f3x	300

An infusion is directed to be made [better a decoction], from which is formed an emulsion, by adding:

Oleoresina aspidii	3i	4
Olei tiglii	mii	12
Acaciæ q. s.		

The oleoresin of aspidium may be given as an emulsion or in capsules, or it may be combined with other teniafuges, somewhat after the formula given above.

Pumpkin seeds are harmless and may be given either in substance or in the form of a decoction, using an ounce or more of the bruised seed.

Of the other, official, substances that have been used to assist in expelling tenia it will suffice to enumerate: ether, chloroform, rectified oil of turpentine, naphthalen and thymol. These are all comparatively active drugs and must, therefore, be used with caution.

ANTIGONORRHEICS.

The title antigonorrheics would appear to suggest that we have medicaments that have a specific action on gonorrhea, or the causative factor of that disease, instead of representing, as it really does, a somewhat meaningless array of substances that have been used more or less empirically as remedies for gonorrhea.

The name gonorrhea should properly be reserved for the acute, contagious, inflammation of mucous membranes caused by a specific organism, the gonococcus of Neisser. In an even more restricted sense it is now frequently applied to the specific inflammation caused by that micro-organism in the male urethra.

Prior to the discovery of the gonococcus, by Neisser, in 1879, there was probably no one common disease about which there existed such widely varying theories and opinions, and certain it is that no known disease has been so persistently and so widely maltreated.

From the time of the early Greeks and of the Romans the treatment of gonorrhea appears to have been relegated to the incompetent, the charlatan and the quack, and it may be safely asserted that no one disease, with the possible exception of syphilis, has been the direct, or the indirect, cause of more misery, more suffering and more untimely deaths because of this neglect and maltreatment.

Recognizing the seriousness of the disorder it would be futile to attempt to give suggestions for exhaustive treatment, and practically the only apology that we have to offer for introducing even a mention of the disease, and of some of the official remedies that may be of use in its treatment, is to be found in the fact that victims of this disorder are even now subjects for neglect and malpractice. Evident proof of this can be found in almost any one of the daily papers which regularly advertise specific cures for all forms and kinds of urethral discharges.

The heinousness of this practice, and the really far-reaching and serious consequences of the practice in its ultimate results have not as yet been properly appreciated even by such members of the medical profession as should be more thoroughly well informed. This is, in a measure, evidenced by the recently published statement, made by a prominent genito-urinary specialist, that he frequently uses and recommends a popularly advertised nostrum, the manufacturers of which deliberately mislead the layman into believing that he can be cured in 48 hours.

As suggested above, the treatment of gonorrhea is not by any means the simple procedure that might be wished for and even the differentiation of true gonorrhea from a non-specific inflammation is one that requires more than ordinary skill and experience, and should, wherever possible, be entrusted to a safe and conscientious specialist, who not alone has the interest of the patient in mind, but who will also attempt, so far as in him lies, to prevent the spread of the infection by impressing on the patient the advisability of observing certain necessary rules of cleanliness, decency and abstinence.

Using the name, gonorrhea, in its most restricted sense, as applying only to the specific urethritis in the male, we may consider this as a type, and recount some of the suggestions for treatment that have been made in connection with it.

This type of gonorrhea is said to be acute, subacute or chronic, according to the stage of the inflammatory process, and it may involve the anterior urethra alone or include, by continuity, the posterior urethra.

The generally accepted routine of treatment is to use only a mild astringent and antiseptic local application for the first or acute stage, to supplement this with the internal use of diuretics, of a terebinthinate or resinous nature, in the subacute or secondary stage, and to use more active astringents and antiseptics as local applications in the chronic stage of the disease.

It will be noted by this that what is usually referred to as an antigonorrheic is in reality but a diuretic, an antiseptic or an astringent.

Of the several official drugs and preparations that have been found to be more particularly useful, in these several stages of the disease we may enumerate:

POTASSII PERMANGANAS, U. S.—This is recommended to be used, as an irrigation, in very dilute solutions (1-2,000 to 1-6,000).

ARGENTI NITRAS.—U. S.—This was formerly quite popular, in very dilute solutions, but has fallen into disuse and is now frequently substituted by one or the other of the non-official so-called organic silver salts. These latter preparations, while unduly numerous, are usually expensive and the more active of them are inexpressibly filthy.

A satisfactory and apparently efficient substitute for the several silver preparations has been found in silver iodid. Drs. Siter and Uhle[2] have reported a series of cases in which this preparation was used, in the form of an emulsion of the freshly prepared silver iodid, with excellent results.

A preparation such as was used by Drs. Siter and Uhle may be prepared by any pharmacist, as follows:

Argenti nitratis		
Potassii iodidi, āā	gr. xxviii	2
Mucilago chondri N. F.	f3vi	25
Aquæ dest q. s. ad.	f3iii	100

M. Sig.: Use as an injection.

The best method of preparing a finely divided precipitate is to dissolve the potassium iodid in all of the water and add the

2. University of Pennsylvania Med. Bull., May, 1905.

crystals of silver nitrate gradually, shaking well after each addition; when the silver nitrate is dissolved, add the mucilage and shake thoroughly once more.

The resulting mixture will represent approximately 3 per cent. of silver iodid. This strength may be increased or decreased as desired. If prepared in this way, the weaker mixtures will require a correspondingly smaller amount of mucilage to hold the powder in suspension and mixtures below 1 per cent. may be dispensed without the addition of any foreign material.

Of the drugs that are frequently used for internal administration in the second or sub-acute stage of the disease the Pharmacopeia includes, in the order of their present popularity:

OLEUM SANTALI.—U. S.—Oil of santal, or oil of sandalwood, is a volatile oil distilled from the wood of *Santalum album*. The Pharmacopeia directs that this oil contain not less than 90 per cent. of santalol. This requirement is readily met by the better grades of oil of santal now on the market, so that there is little or no need to resort to proprietary specialties containing, or purporting to contain, true oil of santal.

Average dose: 0.5 c.c. (8 minims).

COPAIBA.—U. S.—Copaiba, balsam of copaiba, as it is more popularly called, is derived from one or more South American species of copaiba. It was introduced into Europe by the Portuguese, during the latter half of the seventeenth century, and has long enjoyed the reputation of being of especial use in connection with specific urethritis in the male.

Average dose.—1 c.c. (15 minims).

OLEUM COPAIBÆ.—U. S.—Oil of copaiba is officially described as a volatile oil distilled from copaiba.

Average dose: 0.5 c.c. (8 minims).

OLEORESINÆ CUBEBÆ.—U. S.—Oleoresin or cubeb represents the alcohol soluble portion of the dried, unripe, fruit of *Piper Cubeba*.

Average dose: 0.5 c.c. (7½ grains).

OLEUM CUBEBÆ.—U. S.—Oil of cubeb is a volatile oil distilled from cubeb.

Average dose: 0.5 c.c. (8 minims).

Of the more active astringents that are used in the third, or chronic stage of gonorrhea, in the male, and form such a prominent part in the treatment of the more common form of gonorrhea in the female, we may enumerate:

ZINCI SULPHAS.—U. S.—Zinc sulphate.

ZINCI ACETAS.—U. S.—Zinc acetate.

ZINCI CHLORIDUM.—U. S.—Zinc chlorid.

ZINCI PHENOLSULPHONAS.—U. S.—Zinc phenolsulphonate.

ALUMEN.—U. S.—Alum.

ACIDUM TANNICUM.—U. S.—Tannic acid.

ARGENTI NITRAS.—U. S.— Silver nitrate.

These several astringents, with or without the addition of well-known antiseptics, such as boric acid, phenol, thymol, glycerin, and the several combinations or preparations of them, practically constitute all that is necessary in the treatment of the most persistent of the chronic forms of gonorrhea.

Clinical Note

ACETANILID POISONING FROM BROMO-SELTZER.*

ALBERT ENGLES BLACKBURN, M.D.
PHILADELPHIA.

Patient.—I was asked by his mother to see the patient, a man, aged 22 years, recently married. The patient did not consider himself sick and did not desire medical attention. It was with great difficulty that I obtained a distinct and correct history. I do not believe there was the intent to deceive, but his marked hebetude and obtuseness made it especially difficult to obtain a connected history. When the facts were finally obtained from his wife and he was asked as to their correctness, he acknowledged their truthfulness and promised to desist taking the drug.

History.—Following an acute illness some six months previous he began taking an occasional dose of bromo-seltzer for headache. The relief desired was temporarily obtained, and as the headaches recurred the bromo-seltzer was taken in larger amounts and at shorter periods. The quantity consumed grew larger and larger until the six weeks previous to my seeing him his wife assured me he consumed as much as $4.50 per week, which is approximately ten or twelve bottles. The patient would sit for hours if undisturbed, complained of being tired, and was unable to perform muscular effort, there was dyspnea on exertion. He was given to attacks of despondency and again to outbursts of passion, in which he threatened violence, but soon collapsed.

Physical Examination.—His appearance was appalling; his face was ashy white, the lips and lobes of the ears blue, the fingers were deeply cyanosed up to the second joint. His mucous membranes were very pale; the pupils reacted to light and distance. His expression was vacant, seldom speaking until spoken to. The tongue was heavily coated with a white fur, red at tip and margins; breath the foulest I ever noticed. Bowels constipated; the pulse varied from 85 when at rest to 130 on the slightest exertion, regular, fair volume, low tension. The left ventricle was enlarged downward and to the left. The first sound of the heart was very weak; a soft systolic mitral murmur was present The surface was cold and lifeless. Urine contained indican, but no albumin or casts. General tremulousness and loss of motor powers were marked. No blood examination was made.

To find the constituents of bromo-seltzer I wrote the Emerson Drug Company of Baltimore. Inasmuch as *Collier's Weekly* had lately given them a writeup, a member of the firm called. He told me that bromo-seltzer contained to the 100 grains (a heaping teaspoonful):

Acetanilid	gr. ivss
Potassium bromid	gr. x
Caffein	gr. ii
Soda bicarb.	
Citric acid.	

THE JOURNAL A. M. A., Feb. 10, 1906, states its analysis to be, to the 100 parts:

Potassium bromid	10.53 parts
Acetanilid	4.58 parts
Caffein	1.20 parts

Assuming an average dose to be a teaspoonful—not heaping as above stated—to weigh 76 grains, the dose would contain:

Potassium bromid	7 grains
Acetanilid	3 grains
Caffein	8 grains

Since many people take a tablespoonful repeatedly, the quantity of acetanilid varies between 12 and 15 grains, an amount which is exceedingly dangerous. For "business reasons" the representative requested that I refrain from quoting him.

Course.—Herrick states in his paper that great difficulty is experienced in withdrawing the drug. This was not the case in this patient. He was plainly told the cause of his trouble, and the effect if he continued taking it. He was carefully watched, but made no effort to secure the drug. At no time did he express a desire for it, which was probably due to the relatively short time of taking it. His improvement was steady, but slow. The cyanosis disappeared in about a week; the anemia was the last to disappear.

The treatment consisted merely of withdrawing the drug, administering the cardiac stimulants, strychnia and digitalis, and regulating the bowels.

Dr. Quigley reports in THE JOURNAL A. M. A., Vol. XLVI, No. 6, a case that went into collapse from a tablespoonful of bromo-seltzer, and states he would have died had not his stomach been emptied and stimulants administered.

* Reported before the West Philadelphia Branch of the County Medical Society, March 16, 1906.

First Total Gastrectomy in South America.—The *Semana Medica* for April 19 relates the successful removal of a cancerous stomach by B. Vasallo of Rosario, Argentina. The patient was a woman of 39 and was apparently in perfect health at date of writing, four months after the operation, with no digestive disturbances.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, JUNE 9, 1906.

MODERN IDEAS CONCERNING PUERPERAL ECLAMPSIA.

The profound anatomic changes that occur in the kidneys and liver, and to a less extent in the other parenchymatous organs, in eclampsia, leave no room for doubt that in this condition the blood of the patient is loaded with materials possessed of a high degree of toxicity. Both the origin and the nature of these poisons remain, however, among the most baffling of medical mysteries. The frequent association with marked albuminuria and the occurrence of convulsions quite similar to those of uremia led Frerichs and others to consider eclampsia as identical with uremia, and a specific disease only in that it occurs in pregnancy. That this is not the case, however, has been abundantly proved. In the first place the anatomic changes are quite different from those in uremia, in which the toxic materials seem to exert their influence chiefly on the central nervous system. In many cases of eclampsia the kidneys have been found to be entirely or almost free from structural changes, while in nearly all the liver shows severe alterations, which not infrequently are so great that it is quite impossible to draw a sharp line between eclampsia and acute yellow atrophy. Also, according to Zweifel, eclamptic blood contains no more urea and ammonium compounds than does normal blood, which is contrary to the condition in uremia.

By far the most characteristic and striking feature of eclampsia is the rapid improvement that usually follows the emptying of the uterus, particularly when this is done in the early stages of the attack. The albuminous urine clears up rapidly, the amount of urea increases until for a few days it may be much more than normal, and the constitutional manifestations subside correspondingly. This, of course, indicates that the source of the intoxicating substances is in the products of conception, rather than in a disturbed metabolism of the mother, which has been frequently assumed in analogy with acute yellow atrophy. A natural hypothesis is that the additional amounts of metabolic products thrown into the maternal blood, both from her own overactive organs and from the fetal tissues, cause injury to the liver and kidneys, as a result of which there is a deficiency in renal elimination, coupled with a loss of the normal detoxicating function of the liver and abnormal nitrogenous metabolism resulting from the injury to the same organ. The accumulation of toxic products from these two sources leads to further renal and hepatic injury, and thus a vicious circle is established. This plausible idea, however, does not fit so well with the fact of the prompt subsidence of the disease after removal of the contents of the uterus, as does the hypothesis that the fetus or placenta, or both, furnish most or all of the toxic substances. On this basis, numerous observers have sought for a toxic substance in these places, with varying results. The German journals of late have contained numerous reports of the work of Zweifel and his associates, which are based on the observation by Zweifel of small quantities of lactic acid in the blood and urine of eclamptic women. More recently the same author reports[1] observations on the occurrence of lactic acid in the fetus, obtaining it in much larger quantities from the blood escaping from the umbilical cord of children delivered from eclamptic women than in the blood of the mothers. This observation he interprets as indicating that the lactic acid is formed in the fetus rather than in the mother, and he looks on eclampsia as an acid intoxication of fetal origin.

Many objections, however, can be raised against this view, which has perhaps received too ready acceptance because of the recent development of interest in the subject of acid intoxication. In the first place, the symptomatology of eclampsia is by no means identical with that of poisoning with organic acids, as illustrated by diabetic coma. Secondly, the amounts of organic acids found in the urine in eclampsia are, as a rule, very small and not sufficient to account for the severity of the manifestations of puerperal eclampsia; thus in a typical case examined by Zweifel there was isolated but 0.4155 gram of the zinc salt of paralactic (sarcolactic) acid in nearly a liter of urine, which is a mere trifle as compared with the amounts of organic acids frequently found in diabetic coma. To be sure it is claimed that the sarcolactic acid is more toxic than the diacetic and oxybutyric acids of ordinary acid intoxications, but there is no sufficient reason for believing that the minute amounts so far detected in eclampsia are capable of causing such severe anatomic changes and so violent an intoxication as are present in eclampsia.[2] Furthermore, much can be said against the view that the origin of the toxic substance, whether it is sarcolactic acid or some other more complex body, is in the fetus. This has been particularly urged by Liepmann,[3] who calls attention to the fact that the children, particularly when delivered early in the attacks before asphyxia has become profound, show no evidences of having been subjected to the action of any severe toxic substance, such as are manifest in the organs of the mother. If the toxic materials were produced in the fetus it might be expected that its tissues would suffer more change than those of the mother. Even more convincing against the fetal origin of the poison is the frequent development of

1. Münch. med. Wochft., 1906, vol. liii, p. 297.
2. Wolf: New York Med. Jour., 1906, vol. lxxxiii, p. 813.
3. Münch. med. Wochft., 1905, vol. lii, pp. 687 and 2484.

eclampsia after delivery of the child, and particularly the case of Hitschmann[4] of a patient who became eclamptic when pregnant in the fifth month with a hydatid mole, and no fetus at all. For these and other reasons Liepmann contends that the source of the toxin must be in the placenta.

It may be recalled that Weichardt, Ascoli, and many others have done considerable work based on the idea that the placental tissues, being foreign to the body, were toxic to the maternal organism, which, therefore, developed antitoxic substances to neutralize the placental elements that might enter the maternal circulation. Failure to develop such antitoxic substances (or possibly their overdevelopment, according to various ideas) was thought to be responsible for the eclampsia. It can only be said that this work on the "syncytiolysins" has led to little but confusion and interesting hypotheses, while some of the most recent observers question all the positive results obtained by their predecessors.[5] This phase of the subject of eclampsia must be held *sub judice*. Liepmann, impressed by the importance of the placenta in eclampsia, has examined a great number and finds that they are highly toxic for rabbits, whereas normal placentas are not; the poisonous substance seems to be closely related to the proteids of the placenta, to be extremely labile and as yet impossible of isolation. This work, of course, needs much more elaboration and confirmation.

The contention of many clinicians and pathologists, particularly Stroganoff,[6] that eclampsia is an infectious and semi-contagious disease seems not to have been sustained. It is hard to tell, on the evidence yet submitted, how much weight is to be attached to the view of Lange[7] that in at least some of the cases eclampsia is due to an insufficiency of the thyroid, whereby its detoxicating effect is lost. One other unproved theory may be mentioned, that of Dienst,[8] who believes that eclampsia is due to an abnormal communication between the fetal and maternal circulations whereby the heterogeneous fetal and maternal bloods become mixed.

Of particular practical importance, however, is the fact to be noticed in the reports of the supporters of these various hypotheses that all agree in urging as essential for the treatment of eclampsia the most prompt and early emptying of the uterus possible as against the expectant treatment advocated by the earlier supporters of the autointoxication theories of Bouchard and others. Some clinics claim a death rate of but from 1.8 to 5 per cent. in this disease as a result of early interference.

4. Centrbl. f. Gynäk., 1904, vol. xxviii, No. 37.
5. Wormser, Münch. med. Wochft., vol. ll, pp. 7 and 2285.
6. Zeit. klin. Med., 1900, vol. xxxix, p. 503.
7. Zeit. f. Geb. u. Gyn., 1899, vol. xl, p. 34.
8. Centrbl. f. Gynäk., 1905, vol. xxix, No. 12.

GONORRHEAL VAGINITIS.

Gonorrheal vaginitis in children is always of special interest to physicians associated with hospitals. The difficulty often of making a diagnosis and of ascertaining the means of transmission on account of the almost endless number of possibilities make any new contributions on this subject of great value. There are not many endemics of gonorrheal vaginitis among children cited in the literature. This is probably due in part to the fact that when cases occur in a hospital physicians hesitate to report them on account of fear of bringing criticism on the institution. This is unfortunate, as by the study and publication of such instances light may be shed on the causes and means of transmission of this disease and new means discovered of prevention of further cases. The value of such information is seen in a recent article by Harmsen,[1] who furnishes several valuable suggestions on the diagnosis and prognosis of gonorrheal vaginitis.

One of the most important of his observations is that, contrary to the general belief, in many cases of gonorrheal vaginitis in children, during the first stage, the gonococcus is not present in the secretions. Very often simply a purulent catarrh, with scarcely any clinical symptoms, is the beginning of the specific disease, and only by later examination of the secretion is one successful in finding the gonococcus. Harmsen points out that, while the normal vaginal secretion contains a large number of flattened epithelial cells and a more or less great variety of bacteria, he generally observed at the onset of gonorrhea a purulent discharge, which did not contain these organisms, nor did it contain the gonococcus. In this discharge the epithelial cells were replaced by numerous leucocytes. As a rule in a few days the gonococci appeared. With the abatement of the infection the leucocytes and gonococci are replaced by epithelial cells and the micro-organisms normally present, so that if the vaginal secretion of a child contains exclusively leucocytes without the usual bacterial flora and epithelial cells one must be suspicious of the beginning (or end) of a specific vaginitis.

Fränkel and others have called attention to the absence of various micro-organisms and epithelial cells in gonorrhea, in which the gonococcus and leucocytes are present, but Harmsen appears to be the first to lay stress on the absence of the gonococcus in the first stage of specific vaginitis as a significant indication. These observations on the secretions would seem to be of value, in that it may be possible to make an earlier diagnosis than previously and so greatly to diminish the danger of the infection.

Harmsen considers it essential to make a microscopic examination of the vaginal secretions of all children admitted to hospitals in order to make a diagnosis of gonorrheal vaginitis as soon as possible. In this way treatment may be begun sooner and the danger of the dissemination of the disease greatly lessened. He believes that this microscopic examination should be carried out for a week or more on account of the length of the incubation period. This, we believe, is already the

1. Zeits. f. Hyg. ü Infektionskr., 1906, vol. liii, p. 89.

rule in some of our American hospitals in which the officials have had experience with endemics of this disease.

By examining the vaginal secretions, one may also be able to determine, not absolutely but with some probability, when a case is cured, by the absence of the gonococci and the reappearance of the epithelial cells and the various kinds of micro-organisms.

CANCER.

In the Oration on Surgery, Dr. J. B. Bryant discusses the nature of cancer and the progress made in its treatment in recent years. Notwithstanding all that has been, and is being done, the vast amount of theorizing and the frequent announcement of alleged discoveries, the true nature of malignant disease is still, he states, an elusive mystery. The more we study the subject and the more we learn of its extent and importance the more apparent to us is our own ignorance of the essential facts of its real nature and origin. Cancer is almost universal through the higher orders of the animal kingdom, and even in the vegetable world apparently analogous conditions exist. We have evidence that cancer was known at a very early period, and that the ancient Greeks had a very good clinical idea of its nature.

Bryant states that cancer seems to be pre-eminently, though not exclusively, one of devolution and that, while it is apparently increasing in frequency in civilized communities, this may be due in part to the greater number of those who, through the increase of human longevity due to medical and sanitary advances, fall within the age limit of cancer attack. He points out that the slow and continuous increase in cancer mortality must be controlled by influences of such subtle kind as thus far to perplex the most astute observers, and makes an interesting study of the statistics of the location of cancer in the body. One of the most striking facts against the parasitic theory brought out is the vast difference between the sexes in the incidence of cancer in the gastro-intestinal tract. He shows that cancer of the male alimentary canal is seven times more frequent than in the same location in the female, and calls attention to the fact that there is no physiologic or anatomic difference in the two sexes which would account for such a parasitic selection as this—a parasitic theory being allowed. The fact also that the alimentary tract is affected in 80 per cent. of the cancers in males and that in females the same percentage occurs in the reproductive organs, including the breast, is strongly suggestive of a general condition of non-resistance to pathologic processes induced by traumatism in the aging organism.

In discussing the surgical treatment of cancer he states that the danger of delay is at the same time encouraging and discouraging, according to the aspect in which we view it. The vast amount of human misery that unquestionably has been relieved by surgery and its hitherto unparalleled success of late years are in the highest degree encouraging. On the other hand, the fact that it is almost impossible to insure early diagnosis and recourse to treatment, both on account of the insidious character of the approach and the inaccessible location of the disease in so many cases, seriously detracts from any satisfaction we may derive from the limited successes so far attained.

The subject of malignant disease is one of the most suggestive in medical science. There is a wide field here for studies in comparative, as well as in human pathology and even in the collateral sciences of anthropology, ethnology and archeology. There is ample room for all the work that can be done in all the special and general centers of research on the subject, and the fact that our progress has thus far been slow in elucidating the mystery should only be a stimulant to further effort.

THE PRESIDENT'S ADDRESS.

In his presidential address, published in this issue of The Journal, Dr. Mayo goes directly to the point, without any rhetorical flourishes, and shows that, with all our better organization and reconciliation of differences, for which we are to be duly congratulated, we are as yet only at the beginning of what is to be done, not only for ourselves, but also in the fulfillment of our duty to mankind. The public is a quarter of a century behind advanced medical thought in matters which it ought to know, and it is one of the misfortunes of a free government that ignorance sometimes sits in high places where, together with selfish interest, it can obstruct or nullify the measures needed for the welfare of the people. The public does not sin wilfully in this matter, but it needs education, and to furnish this the medical profession, which alone can guide this education correctly, will have to give not only the required individual effort, but more trained team work, to use a popular expression of the day. We have failed, as Dr. Mayo says, to secure the public's support for needed sanitary reforms because heretofore we have appealed to them too much as one individual to another, without the appeal carrying with it the weight of an authoritative organization. That a necessary piece of legislation demanded by the public, like the pure-food bill, can be so long blocked by the efforts of skilled lobbyists in the interest of adulterators is in itself sufficient evidence of the need of a united medical profession knowing its strength and how to use it intelligently. Dr. Mayo's statements in regard to medical education are in accord with the traditions and policy of the Association from its beginnings, and there are few who will not agree with him in what he says in regard to state licensure and reciprocity. His remarks also on the attempted and too often accomplished exploitation of our profession by public corporations, insurance companies and hospital authorities are all timely and true. Still more so are those on the evil of the acceptance of the money standard of success which is one of the most demoralizing tendencies of our social organization and is absolutely incompatible with the true professional spirit and ethical standard of the honorable

medical practitioner. This spirit, involving, as it does, a life of devotion to study and to the interests of others as well as of ourselves, can best be fostered and accentuated by harmonious co-operation among the members of an united profession.

THE BOSTON SESSION.

For the reason that our last forms are closed on Wednesday morning, it is impossible to give a complete report of the Boston session. Consequently, we shall not attempt to do so, believing that it will be preferable to publish the proceedings in full next week. We are advised by telegraph that the registration when the office closed Tuesday night was approximately 3,600. This far exceeds that of any preceding sessions. The total registration at Atlantic City in 1904 was 2,890. Judging from previous years' experience, therefore, we may estimate that the total registration for this meeting will be about 4,500. The immense number in attendance, however, is being cared for in a satisfactory manner.

Medical News

CONNECTICUT.

Personal.—Dr. David H. Monahan, Bridgeport, has been appointed almshouse physician, vice Dr. Henry Walls, resigned.

State Society Meeting.—The Connecticut State Medical Society held its one hundred and fourteenth annual meeting in New Haven, May 23 and 24, under the presidency of Dr. Nathaniel E. Wordin, Bridgeport. The presidential address was on the subject of "Influence of the Medical Profession on the State." Dr. Wordin warned the physicians of their duty toward humanity and the general cause of health and the necessity of unselfishness in that duty. He denounced the attempt of the legislature to abolish the law compelling vaccination, and spoke at length on the work accomplished by the society in influencing the different state governments in the campaign against insanitary conditions and the consequent spread of disease. The following officers were elected: President, Dr. William L. Higgins, South Coventry; vice-presidents, Drs. Charles E. Brayton, Stonington, and Dr. Samuel D. Gilbert, New Haven; secretary, Dr. Walter R. Steiner, Hartford, and treasurer, Dr. Joseph H. Townsend, New Haven.

ILLINOIS.

Physician Pays Fine.—Dr. Charles A. Nichols, Urbana, who was recently convicted of sending unmailable matter through the mails, on May 29 paid his fine and costs, which amounted altogether to $700.

Honor Old Practitioner.—Thirty members of the Champaign County Medical Society and many citizens of Rantoul gave a banquet in honor of Dr. James C. Harmon, one of the oldest practitioners in the county, May 21. Dr. James M. Bartholow, Urbana, presided as toastmaster, and tributes were paid to Dr. Harmon by a number of his old friends.

Decrease in Coroner's Cases.—The monthly report of the coroner of Cook County for May shows a total of 333 deaths as compared with 356 for April. Of these 11 were homicides; 32 were due to suicide; falls and railway accidents each caused 29 deaths, and 112 deaths were assigned to natural causes. Of the suicides 23 were male and 9 female.

Webster Judgment Set Aside.—The judgment recently rendered against Dr. George W. Webster, president of the State Board of Health, in a suit for alleged malpractice, was set aside May 26 by Judge Wright on the ground that the plaintiff failed to show any connection between the alleged want of skill and care, and the outcome in the case, which was the loss of the girl's leg. The case will probably be heard again by Judge Wright during the present term of court.

Communicable Diseases.—Canton has at present an epidemic of chickenpox, with about 200 cases.——Roscoe, Winnebago County, reports 26 cases of smallpox, and Cambridge, McHenry County, 8 cases; in Waukegan 4 cases of smallpox in dowieite families have been reported.——An epidemic of smallpox is reported from Lincoln. The city council has voted money to build an isolation hospital and quarantine will be strictly observed.——Decatur reports 4 cases of smallpox.——Four new cases of diphtheria have been reported from Pontiac.

Personal.—Dr. Ernest J. Miller, Sycamore, who has been seriously ill, is improving.——Dr. George A. Wash, Palmyra, who was operated on in St. Louis recently, has returned home convalescent.——Dr. and Mrs. Amos F. Conard, Homer, are taking a trip to California.——Dr. James R. Hull, Good Hope, has started for Seattle, en route for Japan.——Drs. Byron C. Stolp, Swartout and Conley have been appointed members of the board of health of Wilmette.——Dr. Daniel L. Jewett, Watseka, is seriously ill with pneumonia.——Dr. J. Millard Maury has been appointed city physician of Wheaton.——At the last meeting of the Court of Honor, Dr. James E. White, Urbana, was elected supreme medical examiner. This necessitates Dr. White's change of residence from Champaign to Springfield. Dr. James S. Mason, Rantoul, succeeds Dr. White in Urbana.

How to Save the Babies.—The Illinois State Board of Health has issued a new pamphlet written on the same general lines as that issued last summer, but containing more information and with more illustrations. Suggestions are given for the nursing mother; artificial feeding is fully discussed, and the advantages and disadvantages of the various infant foods are carefully considered. Cows' milk, properly modified, is advocated as the ideal food for infants, and the proper methods of modification are plainly described. The mother is taught not only how to feed the baby, but how it should be bathed, how it should be dressed in hot weather and how it should be cared for indoors and out. A chapter is also added which is devoted to suggestions to bottle men and milk dealers. This pamphlet is issued for gratuitous distribution, and those who wish copies should apply to the secretary of the State Board of Health, Springfield.

Investigation of State Institutions.—On account of the recent scandals at the Illinois Eastern Hospital for the Insane, Hospital, and the Illinois Hospital for the Incurable Insane, Bartonville, the State Board of Charities has made a preliminary examination, the salient points of which are as follows: The unfortunate condition of the patient, Katie Ward, in the former institution, occurred in consequence of conditions which have prevailed in the institution for many years. It has been the custom for employés outside of the medical staff to carry keys which would unlock the doors of the women's wards and dormitories. There were not enough nurses on duty at night to safeguard the women patients. The board calls attention to the defects of administration and lack of sufficient medical and nursing help which renders possible such unfortunate occurrences, and does not believe that blame should be fastened on individuals who are in a sense helpless agents in the care of these unfortunate people, but that a change should be made in the methods of administration of the institution.

Chicago.

Select President from Chicago.—At the annual meeting of the American Academy of Medicine in Boston, June 2-4, Dr. Casey A. Wood was elected president.

Appropriation to Fight Fever. The council finance committee has granted an emergency appropriation of $10,000 for the purpose of combating the epidemic of scarlet fever.

Hospital Enlargement.—The directors of the Chicago Baptist Hospital contemplate the erection of administration offices and an addition to their present building at a cost of about $10,000.

Deaths of the Week.—The total deaths from all causes for the week ended June 2 were 465, equivalent to an annual death rate of 11.83 per 1,000. This is a reduction of 115 deaths from the preceding week and 2 fewer deaths than was reported in the corresponding week of 1905.

Personal.—Dr. Anders Doe has gone to Norway to represent the Norwegians of Chicago at the coronation of the king.——Dr. Groesbeck Walsh will return from Panama to assume the duties of senior physician at the Cook County Infirmary, Dunning.——Dr. John L. Porter sailed for Europe June 7.

Society of Social Hygiene.—A number of physicians, business men and clergymen met May 28 and organized a Chicago Society of Social Hygiene, with the object of combating in a systematic way the social evils of Chicago. Dr. William T. Belfield was made temporary president, and Mr. William Hallam, temporary secretary. It is proposed to carry on an active propaganda by lectures and other means.

Health Report.—The report of the health of Chicago for the week ended May 26 shows 580 deaths, equivalent to an annual mortality rate of 14.6 per 1,000, or a reduction of more than 11 per cent. as compared with the preceding week, but an increase of 24 per cent. over the corresponding week of 1905. Compared with the preceding week there were 45 fewer deaths among young children and 15 fewer deaths among individuals over 60.

Mortality of May.—During May 2,561 deaths were reported, equivalent to an annual death rate of 14.71 per 1,000. In May, 1905, 2,180 deaths occurred, equivalent to an annual mortality of 12.89, and in April, 1906, 2,770 deaths, an annual mortality of 16.44. Pneumonia caused 472 deaths during the month; consumption, 295; violence (including suicide), 198; nephritis, 186; heart diseases, 160; acute intestinal diseases, 123; and cancer, 121.

INDIANA.

Scarlet Fever.—Three new cases of scarlet fever developed in Rockville last week, and in consequence the lower grades of the public schoools have been closed.

Would Bribe Examining Board.—It is reported that a woman applicant for license to practice medicine in Indiana offered $5,000 to Dr. W. Mott, secretary of the State Board of Medical Examination and Registration, as an incentive to a favorable consideration of her papers.

Insanitary Schoolhouses.—Dr. J. N. Hurty, secretary of the State Board of Health, is making investigation of the schoolhouses of Northern Indiana with reference to their healthfulness. Thus far the State Board of Health has condemned four schoolhouses in Wabash County.

College Incorporated.—Articles of incorporation were filed with the secretary of state, May 23, for the State College of Physicians and Surgeons, Indianapolis, in connection with the Indiana University. The articles mention no capital stock, the college not being organized for pecuniary benefit.

Personal.—Dr. Miles F. Porter, Fort Wayne, has been appointed surgeon for the Pennsylvania System, vice Dr. Christian B. Stemen, resigned.——Drs. Dawson D. Van Osdel, John G. Lewis and Henry G. Linn have been appointed members of the health board of Rushville.——Dr. Overton H. Mennet, Columbus, has been appointed receiver of the Janney Manufactnring Company.——Dr. Maynard A. Anstin, Anderson, has been appointed professor of principles of surgery in the medical department of Indiana University, Indianapolis.——Dr. Logan Stanley, assistant surgeon at the Indiana State Soldiers' Home, Lafayette, has resigned.

State Society Meeting.—The annual meeting of the Indiana State Medical Society was held at Winona Lake, May 23, 24 and 25, under the presidency of Dr. George H. Grant, Richmond. The association was welcomed to Winona Lake by Rev. S. C. Dickey and proceeded at once to take up the scientific work. The total membership was reported to be 2,227. Dr. Francis S. Watson, Boston, a guest of honor of the society, delivered an address on "The Commercial Spirit in Medicine." The following officers were elected: President, Dr. George J. Cook, Indianapolis; vice-presidents, Drs. John B. Berteling, South Bend, and Charles Chittick, Frankfort; secretary, Dr. Frederick C. Heath, Indianapolis (re-elected); treasurer, Dr. Albert E. Bulson, Jr., Fort Wayne; and delegates to the American Medical Association, Drs. John B. Berteling, South Bend, and A. M. Hayden, Evansville.

IOWA.

Smallpox.—The prevalence of smallpox in Northboro and vicinity has caused the closure of the public schools in that place.

Diphtheria Epidemic.—Diphtheria in malignant form has appeared in Sully. Schools and churches have been ordered closed, and all public gatherings have been prohibited for the time being.

Iowa Medical Women.—The ninth annual convention of the State Society of Iowa Medical Women was held in Des Moines, May 15, under the presidency of Dr. Evaline Peo, Boone. The following officers were elected: President, Dr. Mamie A. Coveny, Clinton; vice-presidents, Drs. Jennie G. Ghrist, Ames, and Georgia Stewart, Des Moines; secretary, Dr. Kate S. Harpel, Boone, and treasurer, Dr. Evelyn Frisbee, Des Moines.

Personal.—Dr. Henry Wiedow, Worthington, has started East and will sail next week for Germany.——Dr. John Hamilton has been elected city physician of Cedar Rapids.——Dr. Francis H. Batty has been appointed health officer of West Liberty, vice Dr Otis B. Wyant.——Dr. J. M. Gahringer, Oelwein, is seriously ill with rheumatic arthritis.——Dr. Frank S. Hough has been elected health officer of Sibley.——Dr. Edward L. Rohlf, Waterloo, has been appointed coroner of Blackhawk County, vice Dr. Thomas U. McManus, resigned.

Alumni Election.—The alumni of Drake University, Medical College, Des Moines, held a reunion May 16 and organized, with the following officers: Dr. Ernest R. Limbocker, New Virginia, president; Dr. C. N. Leir-Olsen, Des Moines, vice-president, and Dr. Lenna L. Meanes, Des Moines, secretary.——At the annual meeting of the Medical Alumni Association of the State University of Iowa, Iowa City, May 1 and 2, the following officers were elected: President, Dr. Charles J. Saunders, Fort Dodge; vice-presidents, Drs. Joseph H. Sams, Clarion, and John T. McClintock, Iowa City; secretary, Dr. Walter L. Bierring, Iowa City; treasurer, Dr. Mamie A. Coveny, Clinton; and executive committee, Drs. Edward E. Dorr, Des Moines, William A. Rohlf, Waverly, and Fred W. Powers, Waterloo. The session was made especially interesting by a number of clinics and demonstrations.

State Society Meeting.—The fifty-fifth annual meeting of the Iowa State Medical Society was held in Des Moines, May 16, 17 and 18, under the presidency of Dr. William Jepson, Sioux City. The address of welcome was delivered by Hon. C. S. Bradshaw, Des Moines, and was responded to by Dr. Frank E. Sampson, Creston. The following officers were elected: President, Dr. Elbert W. Clark, Grinnell; vice-presidents, Drs. Henry A. Liepziger, Burlington, and Michael J. Kenefick, Algona; delegates to the American Medical Association, Drs. William Jepson, Sioux City, and Edward E. Dorr, Des Moines. The committee on public health and legislation for the year is composed of Drs. E. Luther Stevens, Des Moines; Joseph M. Emmert, Atlantic; Fred W. Powers, Waterloo, and the president and secretary. The work of the tuberculosis society of the state was approved and $250 was appropriated to further the work. A contract for five years was made by the society with Dr. Edward E. Dorr, Des Moines, editor of the *Iowa Medical Journal*, for the publication of the proceedings of the association. The society also appropriated $300 toward the memorial to Dr. N. S. Davis.

KENTUCKY.

Warrants Issued for Physicians.—On May 19 warrants were issued for the arrest of eight Louisville physicians who had failed to take out the license required by the local authorities.

Graduation Exercises.—The annual commencement exercises of the Medical Department of the University of Louisville were held May 4, when a class of 48 was graduated. The class was presented by the dean, Dr. James M. Bodine, to the president of the board of trustees, T. L. Burnett, LL.D., who conferred the degrees. The faculty valedictory, a eulogy on the life of the late Dr. John A. Ouchterlony, was delivered by Dr. Henry A. Cottell.

Southwestern Physicians Meet.—The thirty-fifth annual meeting of the Southwestern Kentucky Medical Association was held in Paducah, May 8 and 9, under the presidency of Dr. Shandy Z. Holland, Grahamville. The following officers were elected: President, Dr. Edward B. Shelton, Blandville; vice-presidents, Drs. W. G. Kinsolving, Dulaney, and Ben. P. Earl, Charleston; secretary, Dr. Van A. Stilley, Benton, and treasurer, Dr. Charles H. Brothers, Paducah.

Personal.—Dr. William E. Truesdell has been appointed physician to the Campbell County jail, Newport, vice Dr. Virgil F. Barker.——Dr. William E. Irvin has been elected secretary of the Owensboro board of medical examiners for schools.——Dr. J. L. Phythian, Newport, president of the board of trustees of the Spears Memorial Hospital, Dayton, has resigned.——Dr. Adolph O. Pfingst has been appointed eye, ear, nose and throat specialist, and Dr. A. O. Brennan placed in charge of the male and female ward of the Louisville Hospital for July and August.——Dr. and Mrs. Maverell K. Allen, Louisville, sail for Europe on the *Moltke*, June 12.——Dr. James Weir, Owensboro, has been made a member of the American Geographical Society.

McCormack in Kentucky.—Dr. J. N. McCormack made a trip to Kentucky in May, delivering addresses before medical societies, urging the benefits of organization and defining the relation of the physician to the public. His lectures have been very generally attended by representative people and have been enthusiastically received both by the medical profession and the laity. In Lebanon the circuit court was in session, but adjourned for the purpose of attending Dr. McCormack's lecture. It is reported from Danville that the lecture might well be repeated in that place and would have an overflowing house. About 300 were present at the lecture in Harrodsburg, both laity and the profession. In Cynthiana the lecture was

well received and the lecturer was given a rising vote of thanks. At Newcastle a large audience was addressed at the court house. Dr. McCormack addressed the Southwestern Kentucky Medical Association at its meeting in Paducah.

LOUISIANA.

New Orleans Health Improving.—The mortality record for April was at the rate of 14.34 per 1,000 compared with 15.41 per 1,000 for April of last year. The March record was at the rate of 16.81 per 1,000 as compared with 19.08 for March of 1905. During April 45 cases of smallpox were reported, or three less than during the previous month. No deaths from this disease occurred in either month.

Report Cure of Leprosy.—In the report of the Board of Control of the Louisiana Leper Home, submitted to the governor, May 22, it is announced that a definite cure has been obtained in three cases of leprosy. The cases are reported by Dr. Ralph Hopkins, visiting physician, and Dr. Isadore Dyer, consulting leprologist. The patients have been discharged. The board requested the legislature to locate the point of infection and suggested that an appeal be made to the federal government to establish a national hospital for lepers.

Cuban Quarantine.—The State Board of Health, on April 28, took more stringent action relative to Cuba when it promulgated the following order:

By direction of the President, you will not permit any person to go aboard any vessel anchored in the harbor of Havana who is not immune. This rule will apply to both laborers and representatives of various transportation companies; you will require every person boarding the vessel to exhibit to you a certificate of immunity, which certificate must be satisfactory to you. In addition to the above, you will also take the temperature of all persons boarding the vessel. You understand that the only persons allowed aboard the vessels are one representative of the Southern Pacific Company, Illinois Central Railroad Company and the Express Company during any one trip, and the laborers actually employed in loading and unloading the vessel. This rule effective and in force on and after May 1, 1906.

State Medical Meeting.—The twenty-seventh annual meeting of the Louisiana State Medical Society was held in New Orleans, May 8, 9 and 10, under the presidency of Dr. Cleophas J. Ducote, Cottonport. Dr. C. Jefferson Miller, president of the Orleans Parish Medical Society, welcomed the society on behalf of that body. In his annual report, the president spoke of the increase in membership of the society, of the yellow-fever epidemic and the work done by the physicians of the state, the United States Public Health and Marine-Hospital Service, and of the general acceptance of the mosquito doctrine of the transmission of yellow fever. Dr. John L. Scales, Aldenbridge, was appointed councilor for the fourth district and Dr. Stuart L. White, Ruston, councilor of the fifth district, vice Dr. R. F. Harrell. Among the guests of the society were Dr. Warren S. Bickham, New York, Dr. James Carroll, U. S. Army, and Dr. William H. Sanders, Montgomery, state health officer of Alabama. On the first evening a symposium on the sanitary control of yellow fever was held. Dr. James Carroll, U. S. Army, presented the principal paper on "Yellow Fever in Louisiana." Dr. Hamilton P. Jones, New Orleans, spoke on "Isolation Hospitals"; Dr. H. Dixon Barnes narrated his experiences during the 1905 epidemic; Dr. Sidney L. Theard, New Orleans, presented a paper on "Requirements of Maritime and Inland Sanitation in the Light of the Mosquito Doctrine," and Dr. Luther Sexton, New Orleans, discussed some of the difficulties in the diagnosis on yellow fever. The matter of federal quarantine evoked active discussion. Dr. William H. Sanders, state health officer of Alabama, read a paper in which he showed the evil features of federal control, and Dr. Henry P. Garth discussed the relation of the state and national quarantine. He called attention to the action of other states in 1905 which virtually declared war against Louisiana and stated that he believed federal quarantine the only remedy for such conditions. Dr. Warren S. Bickham, New York City, a guest of the society, delivered an address on the "Operative Surgery of the Spine and Cord," illustrated by operations on the cadaver. Just before closing the society adopted a resolution pledging the medical profession of the state to a policy of publicity with respect to the existence of yellow fever whenever the disease is present. The election of officers resulted as follows: Dr. Henry D. Bruns, New Orleans, president; Drs. Charles McVea, East Baton Rouge, George F. Wilson, Bienville, and Allen J. Perkins, Lake Charles, vice-presidents; Dr. P. Leonce Thibaut, New Orleans, secretary; Dr. Jules Lazard, New Orleans, treasurer; Drs. Paul E. Archinard and Edwin J. Graner, both of New Orleans, and Dr. J. Wofford Sanders, New Iberia, councilors; and Drs. Francis M. Thornhill, Arcadia, and James C. Willis, Homer, members of the board of medical examiners. The banquet was one of the most successful events of the meeting. Dr. Marcus J. Magruder officiated as toastmaster; Dr. Edwin B. Craighead, president of Tulane University, was the principal speaker, and toasts were responded to by Drs. C. Jefferson Miller, H. Dickson Bruns and others.

MARYLAND.

Baltimore.

May Deaths.—During May there were 867 deaths and 629 births reported, also 143 cases of typhoid fever with 12 deaths.

Sewage Plant Plans.—It is claimed that the sewage plant of Baltimore will be the most perfect in the world. The estimated cost is $3,283,000, and the method will be that of septic tanks and sprinkling filters, with supplementary intermittent filtration through sand. About 1,200 acres of land will be needed.

Personal.—Dr. John C. Hemmeter has been elected an honorary member of the Imperial Society of Austrian Physicians at Vienna. He sailed for Europe June 6.——Dr. Archibald C. Harrison has been appointed surgeon of the Northern Central and the Philadelphia, Wilmington & Baltimore railroads, to succeed the late Dr. Thomas S. Latimer.

Failure to Report Cases.—Attention is being directed to the failure of physicians here to report cases of infectious diseases. Not over 40 per cent. of such cases in the city are reported. There is a difference of opinion between the city and state health authorities regarding the ability to enforce the law requiring reports, the former claiming that it can not be enforced. A physician living in the northern section—the area of the typhoid fever epidemic—has been arrested by the state board on the charge of failure to report cases of that disease. It is claimed that had he obeyed the law there would have been no epidemic.

Commencements. The University of Maryland School of Medicine held its one hundredth commencement June 4, when a class of eighty-three was graduated. Dr. Robinette B. Hayes, of North Carolina, carried off the gold medal, the highest honor, with a mark of 97.64. Mr. Francis King Carey delivered the address.——The Woman's Medical College graduated a class of two, May 31.——The College of Physicians and Surgeons graduated a class of sixty-five, May 31, at the thirty-fourth annual commencement. Rev. Dr. Huckel, in his address, urged that a systematic study of the mind should be included in the medical curriculum of colleges.

University Alumni Meet.—The Alumni Association of the University of Maryland School of Medicine held its annual meeting and banquet June 1. Dr. Randolph Winslow delivered the address on "The School in 1871 and 1906," and announced that a dormitory would be built for the use of students on ground recently purchased. He spoke of a plan for the union of the Baltimore Medical College with the university. Dr. Howard E. Ames, medical director, United States Navy, presided, and about 350 sat down to table. Dr. Samuel C. Chew was elected president for the ensuing year. Dr. Summerfield B. Bond was toastmaster, and addresses were made by Drs. Shipley, Caspari, Hirsh, Hopkinson, Neale and Carroll. The class of 1881 held its twenty-fifth reunion the same evening, Dr. Charles W. Mitchell presiding.

MASSACHUSETTS.

Bequest.—By the will of the late Alfred Cross of Lynn $5,000 is devised to the Lynn Hospital.

Maternity Ward Opened.—The new maternity ward at the Lawrence General Hospital was formally opened May 19. The ward contains accommodations for 16 patients.

Founder of Floating Hospital Resigns.—Rufus B. Tobey, Boston, who founded the Boston Floating Hospital in 1895 and who has since served this institution without compensation, was obliged to sever all relations with the institution, his resignation taking effect June 1.

Summer Courses at Harvard.—Harvard University Medical School will continue its usual summer courses during the months of June, July, August and September. A total of 71 courses is announced and the students in the medical school will be allowed all the privileges of the summer school of arts and sciences.

District Society Meeting.—The Middlesex East District Medical Society held its annual meeting in Stoneham, May 9, and elected the following officers: President, Dr. Harrison G. Blake, Woburn; vice-president, Dr. Corydon W. Harlow, Melrose Highland; councilors, Drs. George N. P. Mead, Winchester, Francis E. Park and Arthur H. Cowdrey, Stoneham, Silas H. Parks and Robert T. Edes, Reading; censors, Drs. Francis E. Park, Stoneham, Mott A. Cummings, Winchester, George F. Dow, Reading, Ernest S. Jack, Melrose, and William H. Kele-

her, Woburn, and auditor, Dr. Lilley Eaton, Winchester.——The annual meeting of the North Essex District Medical Society was held in Lawrence, May 2. The following officers were elected: Dr. William J. Sullivan, Lawrence, president; Dr. Charles E. Durant, Haverhill, vice-president; Dr. Maurice D. Clark, Haverhill, secretary and treasurer; Dr. R. D. Hamilton, Newburyport, corresponding secretary; Dr. J. S. Pierce, Haverhill, auditor; Dr. Leyander J. Young, Haverhill, supervising censor; Drs. Israel J. Clark, Haverhill, J. Forrest Burnham, Lawrence, Joseph A. Hogan, Lawrence, Richmond B. Root, Georgetown, John A. Douglass, Amesbury, and Ernest H. Noyes and Warren W. Pillsbury, Newburyport, councilors; Dr. Israel J. Clark, Haverhill, nominating councilor; Dr. Warren W. Pillsbury, Newburyport, alternating councilor, and Dr. John F. Young, Newburyport, commissioner of trials.

MICHIGAN.

Medical Student Killed.—Leland P. Beverlin, 29 years of age, a senior student of the Michigan College of Medicine, Detroit, was instantly killed in a runaway accident, May 17.

Diphtheria.—A number of cases of diphtheria are reported on Washington Island, near Jackson Harbor. All efforts to stamp out the disease appear thus far to have been futile.

Alumni Meeting.—The Detroit College of Medicine Alumni Association has just completed a ten-day clinic. At the annual luncheon, May 17, 400 guests were present, and the following officers were elected: President, Dr. Louis J. Hirschman, Detroit; vice-president, Dr. Richard C. Buchanan, Green Bay, Wis.; secretary and treasurer, Dr. John C. Dodds, Detroit, and historian, Dr. E. C. Rumer, Davison, Mich.

Wayne County Officers.—Wayne County Medical Society, at its annual meeting in Detroit, May 18, elected the following officers: President, Dr. J. Henry Carstens; vice-president, Dr. William F. Metcalf; secretary and treasurer, Dr. Walter D. Ford; and directors, Drs. George W. Wagner, H. Wellington Yates, Louis J. Hirschman, Guy L. Kiefer and Frank B. Tibbals, all of Detroit. The society now has 475 members, an increase of 85 since the last annual meeting.

Personal.—Dr. Ernest C. Lee, Detroit, having passed the required examination before the state military medical board, has been commissioned assistant surgeon in the Michigan National Guard, with the rank of first lieutenant.——Dr. Edward M. Libby has been appointed health officer of Iron River.——Dr. Charles J. Sorsen, Calumet, sails from New York for Europe, June 9.——Dr. John L. Chester has been appointed health officer of Emmett.— Dr. Joseph B. Griswold, Grand River, has resigned from the State Board of Legislation and Medicine on account of press of other duties.

April Mortality.—During April 3,097 deaths were reported in the state, equivalent to an annual rate of 14.6 per 1,000. This is slightly lower than the rate for the preceding month, 14.8, but a little higher than the death rate for the corresponding month of 1905, which is 14.4. There were 1,259 births returned during the month. Among the important causes of death were: Pneumonia, 341; tuberculosis, 255; accident and violence, 157; cancer, 131; influenza, 61; meningitis, 51; diarrheal diseases of infants, 50; whooping cough, 45; measles, 42; diphtheria, 36; typhoid fever, 30, and scarlet fever, 28. There was an increase in the mortality from tuberculosis, typhoid fever, measles, enteritis, meningitis, influenza and violence, but a decrease in the deaths from other important causes.

State Society Meeting.—The forty first annual meeting of the Michigan State Medical Society was held in Jackson, May 20, 21 and 22, under the presidency of Dr. David Inglis, Detroit. Mayor Todd welcomed the visitors to Jackson, and Dr. Albert E. Bulson delivered the address of welcome on behalf of the Jackson County Medical Society. Aside from the literary work, the society declared its belief that the code of ethics was not adhered to with sufficient strictness and adopted a resolution recommending that all medical schools give special instructions in this regard. A committee was appointed to investigate the so-called lodge practice and contract work, and a recommendation was adopted advising amendments to the laws of the state providing for compensation for animals killed after tests for tuberculosis. A committee on study and prevention of tuberculosis was added to the list of standing committees of the society. The following resolution was also passed unanimously:

That in order to attain the highest efficiency in medical education in this state, giving the greatest number of instructors to a given number of students, together with greatly increased clinical facilities, we view with favor the proposed amalgamation of the medical department of the University of Michigan with the Detroit College of Medicine

Drs. J. N. McCormack, Bowling Green, Ky., John B. Murphy, Chicago, William Parmenter, Vermontville, Mich., and Johann Flintermann, Detroit, were elected honorary members of the society. The following officers were elected: President, Dr. Charles B. Stockwell, Port Huron; vice-presidents, Drs. William Fuller, Grand Rapids, Edward T. Abrams, Dollar Bay, Delbert E. Robinson, Jackson, and Allison R. Stealy, Charlotte; secretary-editor, Dr. Benjamin R. Schenck, Detroit; treasurer, Dr. George W. Moran, Detroit; delegates to the American Medical Association, Drs. Albert J. Lawbaugh, Calumet, and Leartus Connor, Detroit, and alternate, Dr. Orton H. Clark, Kalamazoo. The 1907 meeting will be held in Saginaw.

MISSOURI.

Dispensary Physician Resigns.—Dr. Edward J. Ernst, assistant chief dispensary physician of St. Louis, has resigned.

Smallpox.—Carthage has had 10 cases of smallpox in its vicinity. There is no disease reported in the town at present and the jail quarantine has been raised.

Smallpox Closes Schools.—The McKinley and Hosea schools, St. Joseph, have been closed for the remainder of the term on account of smallpox among the pupils.

Portrait Presented.—A life-size oil painting of Dr. Gustaf Baumgarten, who has been a member of the faculty of the Medical Department of Washington University for 33 years, was presented by the faculty and students of the department, to the institution, May 27.

Graduation Exercises.—A class of 55 was graduated from the Medical Department of Washington University, May 24. Chancellor W. S. Chapman, Washington University, conferred the degrees. Dr. Robert Leudeking awarded the prizes and the doctorate address was made by Dr. Maurice H. Richardson of Harvard University Medical School.

Physicians and Nurses for School Emergencies.—The board of health of St. Louis has approved a proposition submitted by the Provident Association to supply physicians and trained nurses to be within call of all public schools for emergencies. The matter was referred to the legislative committee, consisting of H. A. Foreman and A. Merrel,' who will draft the ordinance.

Found Guilty. Dr. John B. French, St. Louis, was found guilty by a jury in the United States District Court, May 23, of sending unmailable matter through the mails and offering for sale medical preparations prohibited by law. Indictments were found against him on four counts by the federal grand jury, and he was found guilty on three of the four. Sentence was deferred.

Board of Health Appointments.—The following appointments were made May 24 by the St. Louis board of health: Dr. John W. Shanklin, assistant superintendent of the City Hospital, and Drs. Paul McMullan, R. C. Strohl and S. K. Guggenheim, assistants; Dr. C. H. Shoot, assistant superintendent, and Drs. Edwin Sheehan and H. F. Lineoln, assistants at the Emergency Hospital; Dr. Daniel Shoemaker, assistant city bacteriologist.

Postgraduate Teaching in St. Louis.—At a conference between the secretaries of the Missouri State University and the trustees of the Barnes Hospital Fund, held May 25, it was decided to establish a postgraduate medical department of the State University in St. Louis and to make it a part of the new Barnes Hospital. A committee was appointed to meet the Barnes trustees and complete arrangements for the erection of the institution. The Barnes Fund, which amounts to $1,000,000, was bequeathed for the endowment of a hospital to be known by the name of the Barnes Hospital. The site for this institution was purchased some time ago. The work of erection will begin some time this summer. The next legislature will probably be called on to appropriate money for the maintenance of the new department of the university.

NEW YORK.

Municipal Hospital. The new municipal hospital, Buffalo, is to be completed and turned over to the health department early in June. It has been erected at the cost of $50,000, and is intended to care for all varieties of contagious diseases.

Commencement.—The sixtieth annual commencement of the University of Buffalo, Medical Department, was held June 1, when a class of 14 was presented to Vice-Chancellor Norton by Dr. Ely H. Long, secretary of the faculty, and received diplomas. Dr. Edward N. Brush, Baltimore, was the principal orator of the day.

Personals.—Dr. Augustus G. Pohlman, Buffalo, has been appointed associate professor of anatomy in Indiana University, Bloomington.——Dr. William J. O'Donnell, Buffalo, sails for Europe early in June.——Drs. Nelson G. Russell, Norman L. Burnham and Eugene A. Smith have sailed for Europe.——Dr. Ray Beardsley has been elected health officer of Binghamton, vice Dr. J. Adelbert Ilix.——Dr. Adolph Latellier has been elected health officer of Seneca Falls.

New York City.

Want Investigation.—Within a week two patients with fractured skulls have been transferred to Bellevue as alcoholic cases. Both patients died, and Superintendent Armstrong is about to make an investigation in order to place the responsibility of the transfer of the dying patients to the hospital under wrong diagnoses.

Memorial to Fowler.—At the last meeting of the Kings County Medical Society a tablet in memory of Dr. George Ryerson Fowler was unveiled in the library of the society. It is oblong, with panels for inscriptions on either end, and a bronze bust of Dr. Fowler in the center. The presentation was made by Dr. Lewis S. Pilscher, and Dr. William F. Campbell received the tablet on behalf of the society.

Contagious Diseases.—During the week ended May 26, 1,111 cases of measles were reported, with 35 deaths; 404 cases of tuberculosis, with 184 deaths; 378 cases of diphtheria, with 46 deaths; 219 cases of scarlet fever, with 31 deaths; 38 cases of whooping cough, with 7 deaths; 37 cases of typhoid fever, with 9 deaths; 35 cases of cerebrospinal meningitis, with 23 deaths; 111 cases of varicella, and 2 cases of smallpox, a total of 2,335 cases and 335 deaths.

The Seaside Hospital.—The board of estimate heard suggestions for the proposed park and convalescent hospital on June 2. The legislature has authorized the city to spend $2,500,000. The committee will probably report in favor of Rockaway Park, where the site under consideration consists of 800 acres. The unreasonable demands of the Rockaway owners stand in the way of progress at present, but it is hoped that the city will be able to procure the property at its own price.

Uniform Hospital Accounting.—The hospital committee has turned in its final report, in which it recommends a system of uniform accounting, which shall take into consideration differences of conditions affecting different hospitals. It will first be necessary to have an intelligent classification of the various hospitals of the city, so that in the comparisons that are to be made only those institutions that are fairly comparable shall be classed together. Roosevelt, Presbyterian, New York and St. Luke's hospitals have already perfected a system of uniform accounting for themselves. It is suggested that, after the adoption of a uniform system of accounting, the city's per diem allowance to the hospitals already receiving municipal aid be increased.

NORTH DAKOTA.

Smallpox.—A case of smallpox has developed at Emerado. ——Five cases of smallpox are reported to be under quarantine at Antler.——An alderman of Grand Forks is quarantined in his house on account of smallpox.

Grand Forks Wants Hospital.—The Commercial Club of Grand Forks has already obtained subscriptions amounting to $6,100 toward the $15,000 required, before Bishop Shanley will undertake the erection of a 60-bed hospital in Grand Forks.

State Society Meeting.—The nineteenth annual session of the North Dakota State Medical Association was held at Fargo, May 16 and 17, under the presidency of Dr. Paul Sorkness, Fargo. Mayor Johnson welcomed the association and Dr. Dwight S. Moore, Jamestown, responded. The president in his address advocated that the association take an active part in the national movement to arrange for the erection of a monument to Dr. N. S. Davis. He also made recommendations relative to fees for life insurance examinations and expert testimony. The committee on tuberculosis submitted a report, recommending that a bill for the prevention of the disease be drafted and introduced at the next session of the state legislature. Prof. F. E. Ladd of the state pure food department gave an address in which he sketched the history of pure-food legislation in North Dakota, and detailed the improvement in food and the decrease in adulteration since the work was initiated in 1902. He inveighed against the use of "patent medicines" and nostrums, and described the majority of nostrums as intended to defraud the public without regard to the effect they might have on the health. The following officers were elected: President, Dr. Robert D. Campbell, Grand Forks; vice-presidents, Drs. Charles MacLachlan, New Rockford, John E. Countryman, Grafton, and W. H. M. Philip, Hope; secretary, Dr. Hezekiah J. Rowe, Casselton (re-elected), and treasurer, Dr. J. Dempster Taylor, Minot; and councilors, Drs. Paul Sorkness, Fargo, Andrew Carr, Minot, Edgar A. Pray, Valley City, and John Crawford, Esmond. Dr. James P. Aylen, Sheldon, and Henry G. Woutat, Grand Forks, were recommended for reappointment on the State Board of Medical Examiners. At the annual banquet Dr. Hezekiah J. Rowe, Casselton, officiated as toastmaster. The society adjourned to meet in 1907 at Minot.

OHIO.

Ohio Ophthalmological Society.—The eye, ear, nose and throat section of the Ohio State Medical Association elected the following officers: Chairman, Dr. Charles F. Clark, Columbus; secretary, Dr. Walter H. Snyder, Toledo, and treasurer, Dr. Wylie McL. Ayres, Cincinnati.

Hemmeter in Cleveland.—Dr. John C. Hemmeter of the University of Maryland, Baltimore, addressed the Academy of Medicine, Cleveland, May 11, on "Certain Diseases of the Digestive Tract that are on the Border Line between Internal Medicine and Surgery." On the following day Professor Hemmeter gave a clinic at the Northwestern Reserve University.

State Pediatric Society.—The Ohio State Pediatric Society held its annual session at Canton, May 8. The following officers were elected: Dr. William W. Pennell, Mount Vernon, president; Drs. J. Morton Howell, Dayton, and John D. Dunham, Columbus, vice presidents; Dr. Jesse M. Moore, Cleveland, secretary and Dr. Myron Metzenbaum, Cleveland, treasurer.

State Dermatological Society.—At the annual meeting of the State Dermatological Society, which has decided to affiliate with the State Medical Association, the following officers were elected: Dr. Meyer L. Heidingsfeld, Cincinnati, president; Dr. Edward A. Montenyohl, Akron, vice-president; Dr. E. Otis Smith, Cincinnati, secretary, and Drs. Walter Q. Le Fevre and William E. Sampliner, Cleveland, and Edwin D. Tucker, Toledo, executive committee.

Ohio State Medical Association.—The annual meeting of the association was held in Canton, May 9, 10 and 11, under the presidency of Dr. Thomas C. Martin, Cleveland. It was reported that of the 88 counties in Ohio 87 were organized, leaving Pickaway County the only one still unorganized. Dr. John C. Hemmeter, of Baltimore, was the guest of honor of the association and delivered an address on "Autointoxication from the Digestive Tract." Dr. Harvey Gaylord, Buffalo, delivered the address in surgery on "The Etiology of Cancer." The following officers were elected: Dr. Benjamin R. McClellen, Xenia, president; Drs. John S. Deemy, Bellefontaine, Frank E. Bunts, Cleveland, William W. Pennell, Mount Vernon and Charles F. Clark, Columbus, vice-presidents; Drs. Frank D. Bain, Kenton, and Alonzo B. Walker, Canton, delegates to the American Medical Association, and Drs. John S. Beck, Dayton, B. H. Blair, Lebanon, Edmund C. Brush, Zanesville, Frank Winders, Columbus, and Harris G. Sherman, Cleveland, alternates. The following councilors were elected: Drs. Frank D. Bain, Kenton, third district, and Charles S. McDougall, Athens, eighth district. Dr. Charles A. L. Reed, Cincinnati, was elected delegate to the national legislative council. The society adjourned to meet at Cedar Point, in 1907.

PENNSYLVANIA.

Acquitted.—Dr. Edward J. Hadfield, Phœnixville, charged with performing a criminal operation, was acquitted May 5.

Hospital News.—At a special meeting of the trustees of Lewiston Hospital, Dr. Alexander S. Harshberger was re-elected president and the other officers were also re-elected. ——The new Johnstown City Hospital has been formally opened and is now ready to receive patients.——Sewickley is to have a new hospital, to cost $40,000, $30,000 of which has already been subscribed.

Neurologic Clinics.—Drs. Theodore Diller and Thomas M. T. McKennan, Pittsburg, have been appointed visiting neurologists to Marshalsea, the municipal hospital for the insane, Pittsburg. A series of six weekly clinical conferences is being held at the institution, which is open to physicians and medical students. This series began on May 18. The hospital at Marshalsea contains about 600 patients and the various psychoses are well represented.

West Branch Society Meeting. The annual meeting of the West Branch Medical Association, made up of eight counties in Central Pennsylvania, was held at Williamsport, April 26. The following officers were elected: President, Dr. Spencer M. Freer, Du Bois; vice-presidents, Drs. G. Franklin Bell, Williamsport, and William E. De Laney, Slate Run, and secretary and treasurer, Dr. Joseph M. Corson, Chatham Run. It was decided to hold the next meeting at Lock Haven in 1907.

County Society Meeting.—At the regular meeting of the Susquehanna Medical Society, held in Montrose, May 1, the following officers were elected: President, Dr. Clayton Washburn, Susquehanna; vice-president, Dr. William B. Beaumont, West Auburn; secretary, Dr. Edward R. Gardner, Montrose; treasurer, Dr. John G. Wilson, Montrose; censors, Drs. John G. Wilson, Irving P. Schoonmaker, Halstead, and Dever J. Peck, Susquehanna, and district censor, Dr. Samuel Birdsall, Susquehanna.

Typhoid in Berks County.—During the past three months there have been reported in Wernersville thirty cases of typhoid fever and several persons are still ill with the disease. At the direction of the state commissioner of health, Dr. Israel Cleaver, Reading, medical inspector of Berks County for the State Health Department, made an investigation. Many of the patients are school children, and an analysis of the water from the wells which supply the school demonstrated that this was the probable source of infection.

Personal.—Dr. Joseph D. Findley has been elected physician of the board of health of Altoona.——Dr. Lawton M. Hartman, York, has sailed for Europe.——Dr. Lorenzo W. Swope, Pittsburg, has been appointed chief surgeon for the Wabash Lines. ——Dr. Daniel W. Jefferis, Chester, has been appointed city physician.——Dr. John F. McGrath has been appointed physician for the department of public safety of Pittsburg, vice Dr. Alexander E. McCandless.——Dr. James F. Edwards, U. S. Army, retired, has been appointed superintendent of the Pittsburg bureau of health.——Dr. Alfred L. Dennis, Conneautville, has been appointed surgeon for the Bessemer Railroad.——Dr. A. Miner Straight, Bradford, is recovering from his recent serious illness.——Dr. Philip L. Reichard, Allentown, was operated on recently in Philadelphia for the removal of a cataract.—— Dr. Walter Davis, Wilkesbarre, suffered a dislocation of the shoulder and serious lacerations and contusions in a runaway accident, May 21.

Philadelphia.

Convicted of Illegal Practice.—Amos Glasgow, a negro, was convicted on May 18 of practicing medicine without being a registered physician and was fined $50 and costs.

Medico-Chirurgical Commencement.—The annual commencement of the Medico-Chirurgical College was held June 2, when a class of 118 was graduated. The class-day exercises were held June 1 and the address was delivered by Dr. Judson Daland of the faculty.

Pass Examinations.—The Civil Service Commission announced yesterday the results of the examination for resident physicians to the Philadelphia General Hospital. The examination was held May 12, and eighty-six of the contestants received a mark of 70 or higher.

Faith Curists Indicted.—Three faith curists, members of the "Faith Tabernacle," were indicted by the grand jury June 2 on the charge of manslaughter, arising from the death of a little girl, the daughter of one of the men found guilty. Medical attention was absolutely denied the child.

Dr. Brinton Resigns.—Dr. John H. Brinton, for twenty-four years professor of surgery and clinical surgery at Jefferson Medical College and one of the four who comprised the first board of surgeons of the present Jefferson Hospital, has resigned, to take effect at the end of the present term.

Dr. Coplin to Be Honored.—The appreciation shown by the Philadelphia profession of the progressive work instituted by Dr. W. M. Late Coplin, medical director of the Department of Health and Charities, will be evidenced by a reception in his honor, arranged by the Medical Club, to be held in the Hotel Majestic, June 15.

Jewish Hospital Report.—At the forty-first annual meeting of the Jewish Hospital Association, May 27, the president reported that 7,131 patients had been cared for during the year, or 246 more than those treated in the preceding year. Of these, 1,586 were free patients. During the year 17,446 prescriptions were compounded.

Women Graduates.—At the annual commencement of the Women's Medical College a class of twenty-four was graduated. The diplomas were awarded by Mrs. Mary E. Mumford, president of the board of corporators of the college, and the doctorate address on "The Woman as a Physician" was delivered by Dr. Elliott, of New York City.

Hospital Dedication.—The new wing of St. Agnes Hospital was dedicated with appropriate ceremonies May 29. With this addition to the institution St. Agnes Hospital becomes the largest hospital building in the city under one roof, and the capacity of the institution is more than doubled. There are 300 private rooms. The majority of these have been furnished by individuals. The ground floor contains the new dispensary, operating room for minor accident cases; the fourth floor contains three operating rooms, and connected with each of these is a complete sterilizing plant and rooms for the administration of anesthetics.

Health Report.—The total number of deaths reported in the city during the week aggregated 444, as compared with 519 reported last week and 450 in the corresponding week of last year. The principal causes of death were: Typhoid fever, 28; measles, 7; whoopingcough, 13; diphtheria, 10; consumption, 53; cancer, 25; apoplexy, 18; heart disease, 41; acute respiratory diseases, 46; enteritis, 22; Bright's disease, 38; suicide, 4; accidents, 19, and marasmus, 5. There were 308 cases of contagious disease reported, with 39 deaths, as compared with 381 cases and 47 deaths. Typhoid fever is on the decrease. 170 cases being reported this week, whereas 253 cases with 33 deaths were reported in the preceding week.

Personal.—Dr. De Forest Willard, who is suffering from pneumonia and is still seriously ill, has been operated on for pulmonary abscess. A rib was resected and drainage instituted. He bore the operation well.——Dr. Charles P. Noble gave a reception in honor of Drs. Wesley Bovée, Washington; Guy S. Hunner, Baltimore, and Elliee McDonald, New York, on May 9.——Dr. Mary W. Griscom sailed for Europe June 2. ——Dr. George E. Pfahler sailed for Europe May 31.——Dr. Clara Marshall, dean of the Woman's Medical College, whose resignation was presented to the trustees some months ago, relinquished her connection with the institution June 1 and has been succeeded by Dr. Arthur A. Stevens.

Jefferson Alumni Meeting.—At the annual meeting of the Alumni Association of the Jefferson Medical College, June 1, the following officers were elected for the ensuing year: President, Dr. W. M. Late Coplin; recording secretary, Dr. Charles S. Barnes; corresponding secretary, Dr. Aller G. Ellis, and treasurer, Dr. Randle C. Rosenberger. The annual dinner of the association was held on the evening of the same date at the Bellevue-Stratford, 250 members being present. Dr. George B. McClellan, the retiring president and newly elected professor of anatomy, acted as toastmaster. Toasts were responded to by Albert Johnson, representing the board of trustees; Dr. Edward C. Spitzka, the newly elected professor of anatomy; representing the faculty; Dr. William B. Hale for the press, Dr. Harvey Buchanan for the class of 1896, Dr. F. O. Lewis for the class of 1906 and Dr. J. W. West for the alumni.

SOUTH DAKOTA.

Personal.—Dr. George H. Stidworthy, Viborg, sailed for Europe May 10.——Dr. Vladimir Siakin Ross, formerly superintendent of the State Insane Hospital, Yankton, has decided to locate in Sioux Falls.

Medical Examiners Appointed.—The governor appointed as members of the State Board of Medical Examiners to succeed themselves, Drs. Stephen Olney, Sioux Falls, Hans M. Finnerud, Watertown, and H. E. McNutt, Aberdeen.

District Medical Society.—The annual meeting of the Fourth District Medical Society of South Dakota was held in Huron, April 13. Dr. John L. Foxton, Huron, was elected president; Dr. Isaac M. Burnside, Highmore, vice-president; Dr. Charles J. Lavery, Fort Pierre, secretary, and Dr. Delorme W. Robinson, Pierre, treasurer.

State Association Meeting.—The twenty-fifth annual meeting of the South Dakota State Medical Association was held in Watertown, May 22, 23 and 24, under the presidency of Dr. Adelbert H. Bowman, Deadwood. On the evening of May 23 the members were the guests of the Watertown District Medical Society at a banquet. Mayor J. W. Martin delivered the address of welcome, which was responded to by Dr. E. Frank Reamer, Mitchell. It was decided to hold the next annual meeting at Sioux Falls. Dr. Edwin T. Ramsey, Clark, was elected president, and Dr. Frederick Freyberg, Mitchell, councilor for the district and secretary of the board of councilors.

CALIFORNIA NEWS.

Ready to Give Aid.

The physicians' relief committee on May 18 announced that it was prepared to issue aid to physicians and their families. Members of the profession in need were requested to apply to Dr. Fred W. Lux at the Lane Hospital. It was then stated that there were about 1,500 physicians without money and with no prospect of earning any at present.

Tribute to San Francisco Physicians.

Dr. N. K. Foster, secretary of the California State Board of Health, says:

There is no class of people on earth who have made such a record for themselves as have the physicians of San Francisco and vicinity during the late disaster, and it is due to their efforts that no epidemic followed the fire that made many thousands homeless. This disaster has been harder on the fraternity than any other class, and none of them will fully recover from their losses. They have lost their practice, instruments, their libraries, and in some instances, lost heart, which is the worst loss of all.

Books for California Physicians.

Dr. G. C. Savage, Nashville, Tenn., writes that he has sent 35 copies of each of his two latest books to the San Francisco committee, and suggests that it would be well if other authors in the United States would do likewise.

Acknowledgments.

The San Francisco relief committee has sent the following acknowledgment to the Norfolk District (Mass.) Medical Society:

The committee begs to tender you and your confrères its sincere thanks for your noble and generous impulse. By those only who have sustained a similar affliction, being bereft of all they possess in a few short hours, can the action of your society be truly and deeply appreciated.

Dr. James W. Ward, president of the health commission of San Francisco, acknowledges in the following words the high esteem in which the services of Oregon physicians were held:

I desire on the part of the health commission of the city and county of San Francisco to extend to you, and through you, to the Third Regiment of the Oregon Hospital Corps, our sincere appreciation of your valuable service in San Francisco. It has been an object lesson to the medical profession of San Francisco to note the exactness with which your duties were performed, which have been to the satisfaction of all who know the extent of your services.

Funds for California Sufferers.

NEW YORK CITY, May 27, 1906.

To the Editor:—The committee on medical relief of the California sufferers, i. e., of medical men and their families, appointed by the New York Academy of Medicine and the county societies of New York and Richmond, have raised up to date $5,706. Most of this has been by individual subscriptions, but several medical societies have contributed most generously. When the promised funds are all in we shall have over $7,000.

Through the kind offices of Dr. Francis P. Kinnicutt, the chamber of commerce has appropriated $5,000 out of its fund to be used for relief of medical men in connection with our fund. CHARLES L. DANA.

California Fund.

The following additional contributions have been received at THE JOURNAL office up to 9 a. m., Wednesday, June 6:

Brooks, G. F., Stevenson, Minn.	$ 5.00
Buffum, J. H., Vermont	1.00
Decatur (Ill.) Medical Society	6.00
Caverly, C. S., Wallingford, Vt.	5.00
Colby, B. D., Vermont	2.00
Fawcett, W. C., Devil's Lake, N. Dak.	10.00
Hack, T. H., Vermont	2.00
Hammond, S. W., Vermont	1.00
Hirschberg, J. (Prof.), Berlin, Germany	10.00
Lape, R., Vermont	2.00
Louisville (Ky.) Society of Medicine	25.00
Manchester, H. L., Vermont	1.00
Marshall, G. G., Vermont	1.00
Michigan State Medical Society, Detroit, Mich.	500.00
Moeller, Thor., Devil's Lake, N. Dak.	5.00
Peck, C. W., Vermont	1.00
Rutland County (Vt.) Medical and Surgical Society	50.00
Swift, H. H., Wallingford, Vt.	5.00
Woodward, A. T., Wallingford, Vt.	5.00
Strobell, C. W., Vermont	1.00

Kanawha (W. Va.) Medical Society, $33.00:

Barber, T. L.	$1.00	McConihay, J. M.	$2.00
Burns, R.	2.00	McMillan, W. A.	1.00
Cannaday, J. E.	1.00	Nicholson, H. G.	1.00
Champe, I. P.	2.00	O'Grady, Charles	2.00
Churchman, V. T.	2.00	Ritter, W. E.	2.00
Copeland, C. E.	2.00	Robertson, H. L.	1.00
Davis, E.	1.00	Schofield & Young	5.00
Davis, R. T.	1.00	Sharp, J. T.	1.00
Friedenwald, E. B.	2.00	Shawkey, A. A.	1.00
Haley, P. A.	1.00	Tompkins, W. W.	2.00

Orleans (La.) Parish Medical Society, $50.00.

Chaille, S. E.	$10.00	Holt, Joseph	$5.00
Dupuy, J. A.	10.00	Lowe, M. M.	3.00
Gessner, H. B.	2.00	Michinard, Paul	10.00
H. D. B.	5.00	Provosty, L. M.	5.00

Pottawattamie County (Iowa) Medical Society, $21.00:

Cole, J. H.	$5.00	Macrae, D.	$5.00
Dean, F. W.	5.00	Rice, N. J.	1.00
Houghlan, F. W.	5.00		

Total	$ 742.00
Previously acknowledged	10,184.40
Grand total	$10,926.40

GENERAL.

Physicians Needed for Navy.—It is reported that there are a number of vacancies in the medical corps of the United States Navy. In addition to the salary there is opportunity for a varied professional experience and practical work along lines which do not present themselves to the ordinary practitioner.

Leper Colony in the Philippines.—The first permanent leper colony in the Philippine Islands has been established at Colion Island and 200 lepers have been removed to that place from Cebu. Four Roman Catholic sisters have volunteered their services and are now on their way to the settlement to nurse the afflicted.

Dermatologists Elect.—At the thirtieth annual meeting of the American Dermatological Association, held in Cleveland, May 31 and June 1 and 2, the following officers were elected: President, Dr. Arthur Van Harlingen, Philadelphia; vice-president, Dr. William A. Pusey, Chicago, and secretary and treasurer, Dr. Grover W. Wende of Buffalo.

Aesculapian Society Meeting.—At the fifty-ninth semi-annual meeting of the Æsculapian Society of the Wabash Valley, held in Robinson, Ill., May 31, Dr. John F. Percy, Galesburg, president of the Illinois State Medical Society, was the guest of honor. Dr. Herbert N. Rafferty, Robinson, was elected secretary and treasurer to fill the vacancy occasioned by the death of Dr. Harry McKennan, Paris.

Food Standards.—The committee on food standards, Association of Official Agricultural Chemists, which has been commissioned by the authority of congress to collaborate with the Secretary of Agriculture in fixing standards of purity for foods and determining what shall be regarded as adulterations therein, will hold its next meeting June 18, at the bureau of chemistry, Washington, D. C.

Genitourinary Surgeons Meet.—At the twentieth annual meeting of the American Association of Genitourinary Surgeons, held at the Academy of Medicine, New York City, June 1 and 2, the following officers were elected: President, Dr. William K. Otis, New York City; vice-president, Dr. Harvey G. Mudd, St. Louis; secretary and treasurer, Dr. John Van der Poel, New York City, and member of council, Dr. Hugh H. Young, Baltimore.

American Surgical Association.—At the twenty-sixth annual meeting of the American Surgical Association, held in Cleveland, June 1, Dr. Dudley P. Allen, Cleveland, was elected president; Drs. Thomas W. Huntington, San Francisco, and Augustus F. Jonas, Omaha, Neb., vice-presidents; Dr. Robert G. Le Conte, Philadelphia, secretary; Dr. Charles A. Powers, Denver, treasurer; Dr. Richard H. Harte, Philadelphia, recorder, and Dr. Albert Van der Veer, Albany, N. Y., councilor. It was decided to hold the next meeting in Washington, D. C.

Civil-Service Examinations.—The United States civil-service commission announces the following examinations: On July 5 and 6 an examination will be held to secure eligibles from which to make certification to fill vacancies in the positions of hospital internes (male) under the Isthmian Canal commission as they may occur. Two days will be required for the examination. Each applicant must submit to the examiners a recent photograph of himself as a means of identification. An unmounted photograph is preferred. The age limit is between 20 and 30 years; salary, $100 a month, with quarters, but without board and washing. Only graduates of reputable medical schools having not less than a three years' course will be admitted to the examination. On the same date the examination originally scheduled for June 6 and 7 will be held to secure eligibles from which to make certification to fill at least two vacancies at $600 per annum each, with maintenance, in the position of medical interne in the Government Hospital for the Insane, Washington, D. C. Two days will be required for the examination. Men only will be admitted. Age limit, 20 years or over at the time of the examination, and the applicants must be graduates of reputable medical colleges. Applicants for either of these positions should apply

at once at the United States Civil-Service Commission, Washington, D. C., which will also give information as to the places where examinations will be held.

Oklahoma and Indian Territory Society Meeting.—The Oklahoma and Indian Territory medical associations held a joint meeting in Oklahoma City, May 7, 8 and 9, under the presidency of Dr. Newton N. Rector, Hennessey, president of the Oklahoma State Medical Association. The address of welcome was delivered by Dr. Aarcha K. West, Oklahoma City, and responded to on behalf of the Indian Territory association by its president, Dr. Virgil Berry, Wetumka, and on behalf of the Oklahoma association by Dr. A. L. Blesh, Guthrie, chairman of the council. The house of delegates adopted a resolution that hereafter the rules and by-laws of the association conform with those of the American Medical Association. Dr. Jabez N. Jackson, Kansas City, Mo., guest of the association, delivered an address on the standing of the medical fraternity in the West and on the future of the organization. The association adopted the title of Oklahoma State Medical Association, pending the union of Oklahoma and Indian Territory into one state. The following officers were elected: Dr. Benjamin F. Fortner, Vinita, I. T., president; Drs. Mahlon A. Kelso, Enid, Okla., Walter C. Bradford, Shawnee, Okla., and Floyd E. Waterfield, Holdenville, I. T., vice-presidents; Dr. Eugene O. Barker, Guthrie, Okla., secretary and treasurer; and Drs. Fred S. Clinton, Tulsa, I. T., and John A. Hatchett, El Reno, Okla., delegates to the American Medical Association. The following councilors were elected: Drs. A. L. Blesh, Guthrie, LeRoy Long, South McAlester, I. T., Franklin M. Duckworth, Claremore, I. T., Bascom J. Vance, Checotah, I. T., Eliphalet N. Wright, Olney, I. T., Ney Neill, Mangum, Okla., Herbert P. Wilson, Wynnewood, I. T., Everett S. Lain, Weatherford, Okla., James H. Medaris, Helena, Okla., and Gregory A. Wall, Oklahoma City. Shawnee was selected as the next place of meeting, and $100 was subscribed for the relief of the physicians of San Francisco.

CANADA.

Toronto Clinical Society.—The following are the officers elected for 1906-1907: President, Dr. H. B. Anderson; vice-president, Dr. H. A. Bruce; treasurer, Dr. Geoffrey Boyd; recording secretary, Dr. George Elliott; corresponding secretary, Dr. W. J. McCollum.

Toronto Pathological Society.—The Toronto Pathological Society has elected the following officers for the ensuing year: President, Dr. J. A. Amyot; vice-president, Dr. W. H. Pepler; treasurer, Dr. C. J. Wagner; corresponding secretary, Dr. E. Stanley Ryerson; recording secretary, Dr. H. G. Hutchison.

Annual Meeting of the French-Speaking Physicians of North America.—The third congress of the Association of the French-Speaking Physicians of North America will be held at Three Rivers, P. Q., June 26-28. The president is Dr. L. P. Normand, Three Rivers, and the general secretary, Dr. Charles De Blois, Three Rivers. The principal questions to be taken up and discussed at this meeting will be alcoholism, infantile hygiene and tuberculosis.

FOREIGN.

Epidemic Cerebrospinal Meningitis in Germany.—Owing to the appearance of epidemic cerebrospinal meningitis at Döberitz, the maneuvers of the troops have been abandoned for the present. The disease has also appeared in epidemic form at Posen, and 38 cases have been reported in Switzerland.

Degree Conferred on von Bergmann by Edinburgh University.—In April E. von Bergmann of Berlin went to Edinburgh to receive the degree of Doctor honoris causa which was conferred on him at the ceremonies attending the graduation of 200 baccalaureates.

Pension for Madame Curie. The French government has bestowed a pension of 12,000 francs, about $2,400, on the widow and children of Professor Curie. Madame Curie has also been appointed to a chair of physics at the university, with laboratory, continuing her husband's life work and her own research.

Plague in Straits Settlements. Consul-General Michael, at Calcutta, reports that the government of Bengal, in consequence of the outbreak of plague in Wellesley province, Straits Settlements, has declared Penang an infected port, and that the regulations for the prevention of the introduction of plague by sea, which are in force in the port of Bengal, will be enforced in the ports of Orissa.

International Antiquackery Committee. The organization of an international committee to discuss ways and means for combating quackery was recently mentioned in these columns. It is announced that five European bodies have already appointed delegates to the committee. They are the Carl-ruhe board of public health, and the Swedish, Dutch, German and Austrian national associations for combating quackery.

Privileges for Physicians.—The *Deutsche med. Wochft.* states that the German government has ordered that the expenses of courses of mineral waters at certain spas are to be remitted in case of registered physicians and dependent members of their immediate families, including their servants. At Ems the baths, inhalations and mineral water for drinking are free to them; at other resorts only the baths and waters.

Hospitals for the Straits Settlements.—A new hospital for the treatment of beriberi has been built at Passid Panjang, in the Straits Settlements, to isolate and to deal under the best conditions with the cases of this disease which occur among the patients in the lunatic asylum, the general hospital and the prisoners in jail. The *Indian Medical Gazette* states that a new lunatic asylum is also being built for the Straits Settlements.

Silver Jubilee of a Hungarian Medical Journal.—The leading medical journal of Hungary, *Orrosi Hetilap*, recently celebrated its fiftieth anniversary. A special number of 250 large quarto pages was issued on the occasion, containing important articles from ninety of the most prominent physicians of Hungary, we are told by the Budapest correspondent of the *Deutsche med. Wochft.* The journal is not much known in this country.

Strikes Affecting the Publication of Our Exchanges.—As already mentioned, the *Presse Médicale* of Paris has been suffering from a strike among the printers. It is now at an end, but our esteemed exchange has a gap of several numbers in its publication, the numbers between 32 and 39 being missing. The *Deutsche med. Wochft.* for May 10 also arrives with an apology for slight delay on account of a strike among the binders. The number received is not stitched.

Baeumler's Seventieth Birthday.—In 1901 Prof. C. Baeumler celebrated the twenty-fifth anniversary of his taking charge of the medical clinic at Freiburg. His seventieth birthday occurred May 13, and was duly celebrated by his friends. The *Deutsche med. Wochft.* publishes an illustrated sketch of the popular clinician in the issue for May 10, extolling especially his work as an inspiring teacher. He practiced for nine years in London, and has been a frequent contributor to German and English medical periodicals.

Brouardel Retires.—The eminent Paris authority on medico-legal questions and practice, Prof. Paul Brouardel, will be 70 years old next February. He has recently sent in his resignation from the chair of medical jurisprudence, and intends to retire definitely from his public career. He has published many works on his specialty and on medicine in general, and has been since 1878 one of the editors of *Annales d'hygiène publique et de médecine légale.* His classic volumes on death, sudden death and other medicolegal subjects have been translated into several languages. He is a familiar figure at national and international medical congresses.

Organization of the Profession in Germany. Satisfactory arrangements have finally been concluded between the sickness insurance societies at Vohwinkel and their medical officers. This place has been on the black-list of the *Leipziger Verband* since Jan. 1, 1904, and all honorable colleagues have been warned not to accept the positions with the company. One physician was found who accepted the office and terms, but he gives up the position now without demanding an indemnity on condition that he be allowed to remain as a physician in the town and is accepted as in good ethical standing, to which the local physicians agreed.

Bubonic Plague in Australia. It is reported that plague has again broken out in Sydney, Brisbane and West Australia. The health authorities in New South Wales, according to the *British Medical Journal*, are of the opinion that the outbreak is due to a fresh infection brought by rats from over-sea. The health authorities throughout Australia are urging more thorough destruction of rats. In Victoria the board of health has decided to enforce the regulations for shipping from other ports unless it is known that no infected rats can be found in the other states. The restrictions differ in each state and it is highly desirable that they should be uniform.

Disapproval of Design for the Virchow Statue at Berlin. As already mentioned, the design that won the first prize represents a titan contending with a sphinx, portraying Virchow's struggle with the mysterious origin of disease. The group stands on a solid rectangular pedestal with four doric columns

carved in relief at the corners. It is a very handsome and imposing design, but the local medical societies have presented an official protest against its adoption. They say that the idea of the mysterious, the fabulous and symbolic, is so entirely opposed to all Virchow's conceptions, his whole being breathing the most lucid and limpid clarity and simple truth, that the world of science protests against such an unworthy and uncharacteristic monument to his memory. He was the highest exponent of the search for exact truth, and they state that to hand down his memory to posterity in such an involved, symbolic fashion is to honor it no more than with some cheap decoration. Our Berlin exchanges speak of it in the same tone. The design that won the second prize represents the scientist seated in an academic chair on a broad, spreading pedestal. Both are illustrated in the *Deutsche Med. Wochft.* for May 17.

Medical Progress in Turkey.—The Constantinople correspondent of the *Lancet* states that the Ottoman government has decided to build a medical school at Salonica. The necessary funds will be contributed partly by the ministry of public instruction and partly by various municipalities. This medical school is intended to be erected on the same working principles as the one existing at Damascus. This is another proof of the progress which scientific medicine has made of late in the Ottoman empire. The Turkish metropolis now possesses a good number of hospitals and medical establishments, some of which are very well organized. The Imperial Military Medical School now supplies the Turkish army every year with a numerous staff, while the Imperial Civil School of Medicine sends out annually a large number of qualified practitioners into the provinces. The medical school which was erected not long ago in Damascus serves the provinces of Syria, and many of the more important cities in the various provinces now have a hospital. Steps have also been taken to create in the far-away districts institutes for hydrophobic patients on the model of the one working at present with fairly satisfactory results in Constantinople, and this has lately received additional equipment. Veterinary science, the importance of which is so obvious when a country depends largely on the proper development of agriculture, has made similar strides of late. The ministry of public instruction has lately ordered a large number of the most modern surgical instruments from Berlin. These have already arrived and form a valuable addition to the equipment of the medical schools.

Therapeutic Prevention of Syphilitic Infection.—An important experiment with inoculation of syphilis into a human being was recently reported to the French Académie de Médecine, but the strike among the printers has prevented the publication of the official reports of the proceedings. From accounts in our British exchanges for May 19 we learn that Metchnikoff and Roux, continuing their researches on monkeys, found their previous statements confirmed in regard to the effectual prevention of the development of syphilis if inoculation with virulent human material is followed at once with inunction of a 1 to 3 calomel and lanolin ointment. Their work in this line has already been mentioned in these columns on page 310. As experiments on more than a dozen monkeys had always given positive results, they considered themselves justified in experimenting on a human subject. A fourth-year medical student, free from syphilitic taint, inherited or acquired, volunteered for experiments. On February 1 he was inoculated with syphilitic virus from two chancres, one of eight to ten days' duration, the other a month old. The inoculation was made by scarification at the junction of the glans and prepuce. At the same time they inoculated four macaques and one chimpanzee with the same material. One hour after the inoculation the medical student and one of the macaques were given an inunction with the calomel ointment, which was rubbed into the inoculated parts for eight minutes. A second macaque was given the calomel inunction after twenty hours. The chimpanzee died in a few days of bronchopneumonia. The two control monkeys developed the primary sore seventeen days after the inoculation. The macaque treated twenty hours after the inoculation developed a chancre on the thirty-second day. No symptoms appeared in the medical student or in the macaque treated with the ointment, no signs or changes in the skin or mucous membranes, lymphatic glands or viscera. Three months having now passed since the experiment, Metchnikoff and Roux regard it as conclusive, demonstrating that calomel ointment can be used as a therapeutic preventive of syphilitic infection. Of course, the confirmatory experiment of inoculation of man without the preventive inunctions is out of the question, but the result of the single experiment is confirmatory of results obtained in similar experiments on monkeys. The calomel ointment did not cause any local irritation.

LONDON LETTER.

Gloves and Postmortem Examinations.

A postmortem clerk at the Westminster Hospital died from blood poisoning after performing a necropsy. He had been out of health and had recently returned from a holiday. He seemed so ill that the assistant pathologist put him off duty and completed the necropsy himself. The deceased had a number of small abrasions and did not wear gloves. At the inquest, on being questioned on this point, the assistant pathologist stated that at the Westminster Hospital gloves were never worn at necropsies. It was not a regulation, but a "principle founded on experience and common sense." In addressing the jury, the coroner said that though at Westminster Hospital it might be regarded as common sense not to wear gloves, it was not easy to say that institutions where gloves were worn were not actuated by common sense. As proofs of the risks run he stated that he had held inquests on the bodies of three mortuary keepers.

Medical Report on Ceylon.

The report of Sir Allan Perry, principal medical officer of Ceylon, which has just been issued, contains an interesting account of the medical condition of the island in 1904. The chief infectious diseases were cholera (7 cases and 4 deaths); smallpox (10 cases and 2 deaths); malaria (5,288 cases and 75 deaths); typhoid fever (341 cases and 70 deaths). Compared with the previous year, malaria was the only disease that showed an increase. The cases of cholera did not originate in the island, but were brought by a steamer. In regard to leprosy, Dr. Rost's "leprolin" serum was used with satisfactory results in three cases. Perhaps the most interesting feature of the report is the fact that Sir Allan Perry, unlike the great majority of colonial physicians, is a follower of Mr. Hutchinson in the belief that parangi or yaws is syphilis. He has instructed his officers to treat the cases more vigorously with antisyphilitic measures. The report of Dr. Aldo Castellani, who it may be remembered discovered the trypanosome of sleeping sickness, is of particular value. He has carried out much bacteriologic work on the island. For dysentery and paradysentery he has prepared a polyvalent vaccine, which is harmless. The blood of an inoculated person agglutinates the *Bacillus dysentericus* of Kruse in from twenty-four to forty-eight hours after inoculation. The immunization passes off in a few weeks. Dr. Castellani has determined the presence of three forms of dysentery. He finds that ipecacuanha has no effect on the amebic variety.

Report of the Antityphoid Inoculation Committee.

The committee appointed by the army council to investigate the value of methods of immunization against typhoid fever has held six meetings since its inauguration a year ago. It consists of Dr. W. Bulloch, Dr. P. Foord Caiger, Dr. James Galloway, Major W. B. Leishman, Dr. Bruce Low, Dr. A. Macfadyen and Prof. A. E. Wright, with Dr. C. J. Martin as chairman. It has now issued an interim report. It finds that antityphoid inoculation in the army has resulted in a substantial reduction in the incidence and death rate from typhoid fever among the inoculated. The statistical records support the scientific observations that the protective substances which are developed after inoculation are identical with those developed during typhoid fever, and that animals can be rendered resistant to typhoid fever by the same method. The committee recommends that the practice of voluntary inoculation against typhoid fever in the army be resumed. It also urges the army council to provide facilities for the following investigations: 1. Investigations with the present form of vaccine (standardized typhoid cultures sterilized by heating to 60 C.) on troops leaving for foreign service, with a view to determining the protective value of varying doses of vaccine, the number of doses to be given, and the duration of the protection conferred. 2. Investigations on animals in order to improve the vaccine if possible. 3. An investigation for the development of protective substances in the blood of patients suffering from and convalescent from typhoid fever. They also suggest the following arrangements: 1. Inoculation under careful supervision at least one month prior to embarkation of volunteers proceeding to India. 2. Attachment of a junior army surgeon to each regiment to proceed abroad and to remain with it for at least three years, acting under the directions of the committee as regards the inoculations and the collection of statistics in connection with them. 3. The collection by the headquarters of the army medical department of statistics relating to inoculations which may be carried out in addition to those mentioned above. The difficulties of the investigations will, it is thought, in the first instance, at least,

necessitate the active supervision of experts who have made a special study of this kind of research. Owing to the laboratories of the Royal Army Medical College being at present incomplete, vaccine must be derived from some other source to be approved by the committee. A minority report is made by Professor Wright and Dr. Bulloch, who, while agreeing with the general recommendations of their colleagues, think that the temporary calling in of experts is not sufficient. They suggest that a quasi-permanent organization is necessary in order that the vaccine and the details of the inoculations may be continually modified in the light of further research.

Pharmacology

Church Papers and Nostrums.

It is a very discreditable fact that in spite of good examples of right doing in the lay as well as in the religious press some church papers still retain their "patent-medicine" advertisements. The service of Mammon is evidently hard to give up. It is still more discreditable when a religious paper even indirectly lends its aid to the nostrum evil in its editorial columns, as appears to be the case with an eastern religious magazine, the *Watchman* of Boston, which tries to show that in case of sickness the alternative of a family of moderate means, owing to the expenses of trained nurses, doctors, etc., is between death, debt and self-administered medicines. It is a libel on the medical profession, which now as in times past, has ever been considerate of the true needs and conditions of its patrons, and it does not speak well for the intelligence of those who would mention self-administered nostrums, even by inference, as a preferable alternative to intelligent treatment in case of serious illness. Few religious papers have gone quite so far as this. The plea is generally made that the advertising department is out of editorial control. This, however, implies a weakness that practically amounts to a vice, and if religious papers can not promote the cause of religion without advertising alcoholic and narcotic-containing and habit-breeding nostrums, they had better go out of the business. It would be a good thing if some more of our profession would follow the example of Dr. Blair of Ohio and supply for the reading matter of these periodicals something in the way of a necessary antidote for their advertising columns. A word fitly spoken might stiffen the backbone of a weak brother in the editorial chair and, possibly, might induce him to apply the antidote himself, even if it had to be sandwiched between advertisements of Dr. Shoop's restorative and Drake's palmetto wine. A religious paper that in practical morals falls behind the best of the lay press is not deserving of Christian patronage.

Societies Take Action.

WESTERN DISTRICT (I. T.) MEDICAL SOCIETY.

At a recent meeting, held at Sapulpa, the following resolutions were adopted:

WHEREAS, The American Medical Association has seen fit to inaugurate a crusade against "patent medicines" and nostrums which will prove invaluable both to the public and to the medical profession; be it

Resolved, That the Western District Medical Society of Indian Territory heartily commends the action of the American Medical Association and wishes them success in this undertaking, and

Resolved, That this society proffers the services of this body and each individual in this valuable work.

ERIE COUNTY (PA.) MEDICAL SOCIETY.

At its last meeting this society expressed its approval of the efforts of the Council on Pharmacy and Chemistry of the American Medical Society and of *Collier's Weekly*, the *Ladies' Home Journal* and others to enlighten the profession and public in regard to the nostrum evil.

LUNA COUNTY (N. M.) MEDICAL SOCIETY.

At a full meeting of this society, with all the practicing physicians in the county present, the following resolution was unanimously adopted:

Resolved, That the opposition to the sale of "patent medicine" nostrums, now being waged against the nostrum venders of the United States by the medical profession and their representative, the American Medical Association, is the right move in the right direction, and is heartily indorsed by the Luna County Medical Society of Luna County, N. M.

MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND.

The following resolutions were adopted at the annual meeting of this society:

Resolved, That the Medical and Chirurgical Faculty of the State of Maryland expresses its hearty approval of the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry for the investigation of non-official drugs and medical preparations and endorses the plan of action proposed by the Council.

Resolved, That the Medical and Chirurgical Faculty of Maryland desires to record its appreciation of the change which has taken place in the advertising columns of THE JOURNAL of the American Medical Association and to express the hope that this JOURNAL will soon be entirely rid of advertisements that may in any sense be considered questionable. Looking to the accomplishment of such a state of affairs, the faculty hereby instructs its delegates to the American Medical Association to endeavor to induce the House of Delegates of that body to consider favorably the advisability of excluding all medical advertisements from the columns of THE JOURNAL.

OTHER SOCIETIES.

The Norfolk (Va.) Medical Society, at a meeting held May 8, adopted resolutions commending the Council on Pharmacy and Chemistry of the American Medical Association, as well as the *Ladies' Home Journal* and *Collier's Weekly*, for the stand they have taken against nostrums, condemning the advertisement of medicinal agencies in the lay press, denouncing manufacturers who advertise compounds, the formula of which is not given to the medical profession, discountenancing the practice of certain local druggists who advertise the products of such houses, and pledging the members of the society, so far as possible, not to allow their prescriptions to be filled with the products of such houses.

Dr. E. E. Clark, secretary of the Vermillion County (Ill.) Medical Society, reports that at a meeting held May 14, the society unanimously endorsed the action of the American Medical Association in appointing the Council on Pharmacy and Chemistry. The opinion was generally expressed that this was an attempt at a much-needed reform. *Collier's Weekly* and the *Ladies' Home Journal* came in for their share of commendation for the grand work they are doing.

The Camden County District (N. J.) Medical Society, at its annual meeting, adopted resolutions favoring the passage of the Pure Food Bill and the establishment of a department of public health.

Letters of Endorsement.

Dr. E. R. Herring, Shell Lake, Wis., secretary of the Washburn, Sawyer and Burnett Counties Medical Society, writes:

> "I take this opportunity to express the appreciation of the society of the work of the Council on Pharmacy and Chemistry. It is invaluable and can not be too much encouraged."

Dr. P. J. McCourt, New York City, writes:

> "I cordially endorse the general policy of the Association and of its JOURNAL."

Dr. J. Reynolds Brown, Tacoma, Wash., writes regarding the nostrum campaign:

> "I am heartily with you in the crusade."

Dr. John Fassett Edwards, Manila, P. I., writes:

> "Permit me to convey to you my keen approval of the good work you are doing in the battle against 'patent medicines' and their relatives. The struggle is certainly opportune and should not be relinquished until successful."

Dr. Edward P. Stimson, Tiverton, R. I., writes:

> "I am particularly interested in the 'secret' prescription work you are doing. Keep at it. Why should there be a mixture with a secret formula? Only to enrich the pocket of the producer. I can not see the necessity of any proprietary prescriptions any way. I and my pharmacopeia can write for and prepare anything needed in my work. This proprietary business, if there were no unusual profit in it, would soon become a thing of history."

Some Good Advice to Physicians.

Dr. Frank L. Day, president of the Providence Medical Association, in his annual address, published in the *Providence Medical Journal*, said: "We should publicly aid in the movement for the suppression of quack medicines in the interest of public health, as is being done by *Collier's Weekly* and the *Ladies' Home Journal*. And, first of all, we should turn the searchlight on our own prescription books lest recipes for antikamnia, sanmetto, and scores of secret or doubtful nostrums bear our signatures; for it is to be feared that few of us have warded off the lazy, insidious habit of ordering these ready-made preparations."

No Longer Members of the Proprietary Association.

The Fraser Tablet Company, Brooklyn, N. Y., have notified us that the firm is no longer a member of the Proprietary Association of America.

Formulas and Fatuity.

In an editorial with this title the *Druggists' Circular* makes the following pertinent comments regarding self-medication:

Nickle-in-the-slot therapy is a thing of the past, but many people are still living in the past. By this we mean that when a man is sick he can not ascertain the name of his disease and get a sure cure for it by dropping the price into the slot labeled with that name, and pressing on the lever. Many men and women—especially women—among the laity, seem to think that if they find in a book or paper a formula for a remedy for a certain disease, they can take that formula, get some of the medicine, and go forth armed to conquer any case of that particular malady which they come across; in short, that they know what the doctor knows about such cases and can do what he does. Such people, having no appreciation of the limitations of even the correct remedy, when such has been found, are a menace to the health of the community in which they are allowed to roam at large; and the greater the sphere of their activity the greater the menace.

Of course druggists, physicians and others who have studied a little bit about diseases and the means of their cure, know that mere formulas are for the fatuous, and that blind followers of printed directions for combating disease are fools.

In order that remedies may be applied in a more intelligent than a mere hit-or-miss manner, the man who has the remedies prepared and directs their application should be possessed of certain knowledge as to the temperament and surroundings of the patient, the stage to which the disease has arrived, its possible complications, and many other things connected with the case. Often the more he knows about these things the more he is convinced that the kind of remedy needed is one which can not be doled out by the spoonful in capsules. Recently a physician remarked that he had been doing a good deal of study along certain lines lately, and as a result many old troubles which he formerly had not been able to diagnose were now perfectly plain to him, while things about which he had had no doubts, had taken on a different and puzzling aspect.

When those who under the most favorable conditions have made a life study of disease, who are able to examine with an experienced eye the appearance of the patient, to observe his temperature, to inquire as to the food he eats, the water he drinks, the air he breathes, to post himself as to his family history, and to do all the things which doctors do, have to experiment and deliberate before saying just what treatment is required, does it not seem vain for a man who never saw the patient or who would not have known what was the matter with him if he had, to say that a preparation made by a certain formula is what the sufferer needs?

Medicine is a highly specialized science. Some of its votaries make a specialty of surgery, some of therapeutics, some of compounding remedies, and others of various other branches or subdivisions; and the man who can diagnose a case and prescribe for it may not be any more able to fill the prescription properly than the expert dispenser or manufacturing chemist is able to do the physician's part of the work.

The "Patent Medicine" Evil.

In his presidential address before the Nashville Academy of Medicine (*Southern Practitioner*, May), Dr. Lucius E. Burch discussed the "patent medicine" evil. He compared the nostrum evil to a plague which has wrecked homes, though it is supported by many newspapers and has millions backing it. To overcome it, he said it is absolutely necessary to have a united profession. He declared that while this evil is one which indirectly assists the medical profession financially by creating chronic sufferers, the majority of the laity believe that physicians oppose the use of these nostrums because they keep people from seeking medical advice. Dr Burch said that to remedy this state of affairs we must proceed in a sensible way by explaining to patients the dangers of taking drugs which produce unlooked for effects. He referred to the harm done by quack advertisements in the daily press and to the fact that millions are spent in advertising on condition that newspapers print nothing detrimental to the articles advertised. He praised the lay journals and papers which refuse such advertisements, particularly the work of the *Ladies' Home Journal* and *Collier's Weekly* in showing how fraudulent testimonials are obtained and how the business of these firms is carried on. He urged that the society endorse the passage of a law compelling all manufacturers of "patent medicines" to print the ingredients on the label.

Insurance Fees and Lodge Practice

Societies Take Action.

GUADALUPE COUNTY (TEXAS) MEDICAL SOCIETY.

At a recent meeting of this society the following resolutions were adopted:

WHEREAS, The class of examinations required by life insurance companies is of a nature which entails responsibility, and which in justice to the medical profession should not be made for a less fee than $5.00 heretofore allowed, and whereas we charge a similar fee to private patients for examinations of like character, therefore be it

Resolved, That we, the undersigned members of the Guadalupe County Medical Society hereby agree to make no examinations for any life insurance company, or society, for a less fee than $5.00.

Resolved, Further that these resolutions be forwarded to the respective life insurance companies whose accredited examiners we are:

M. B. Grace, A. L. Knolle, O. G. Pearson, Wm. Myers, T. W. Moore, A. M. Stamps, Seguin; J. W. Williams, Staples; J. M. Ehlert, Kingsbury; S. S. Beakley, Seguin; Louis Hirschfeld, E. G. Burgess, Marion; D. A. Watson, Schertz.

The Dauphin County (Ky.) Medical Society, about a year ago, amended its by-laws so that no member could examine applicants for life insurance for less than $5.

ACTION BY PHYSICIANS OF SELMA, ALA.

Dr. Clarence Ritter, Selma, Ala., sends us the following copy of an agreement signed by all the physicians of that city:

We, the undersigned practicing physicians of Selma, Alabama, hereby enter into and bind ourselves to the following agreement, to-wit: That on and after the 15th day of March, 1906, we will not examine applicants for what are known as "old line" insurance companies for less than five dollars ($5.00) for each examination.

T. G. Howard, Clement Ritter, B. B. Rogan, S. Kirkpatrick, Goldsby King, T. E. Lockhart, John T. Chapman, John P. Furniss, Samuel G. Gay, W. W. Harper, James Kenan, McLean Pitts, John N. Furniss, F. G. DuBose, I. C. Skinner, E. B. Ward.

Correspondence

Fraud Advertisements in Religious Journals.

FREDONIA, KAN., May 28, 1906.

To the Editor:—For several years I have been taking the *Christian Standard*, a religious weekly published by the Standard Publishing Co. of Cincinnati. "Patent-medicine" advertisements are scattered profusely throughout both the advertising pages and the reading matter. I have written several letters to the editor, but he has not replied to any of them.

Piso's consumption cure, sure cures for rheumatism, absorbent treatment for eye diseases, etc., are among the many advertisements. Inasmuch as a direct appeal to the publishers has had no effect, and has not even received the courtesy of a reply, and believing that it is not only dishonest but unchristian for any editor of a religious periodical to allow advertisements which are plainly fakes to appear week after week in his paper, I would like to ask every physician in the United States who has any influence with those reading the *Christian Standard* to make such representations as may seem fit and proper. I believe that in this way we can in time cause the editor of the *Standard* to take a little different view of his obligations to his readers.

I am strongly in sympathy with the stand taken by THE JOURNAL of the American Medical Association, and am in favor of ridding our state journals of the objectionable advertising matter. There are some independent journals that are strictly right; for instance, the *Medical World*, which has been one of the foremost of the independents. When I see some little editor attacking the American Medical Association and talking of medical politics, as being merely to promote the interests of those at the head, it makes me think of Landseer's painting "Dignity and Impudence." E. C. DUNCAN.

Marriages

JOHN P. GRIMES, M.D., to Miss Cora Wells Ritchie, both of Chicago.

EDWIN BROWN, M.D., to Miss Aida Stout, both of Philadelphia, May 29.

CARL L. LARSEN, M.D., Buffalo, Minn., to Miss Ruth Cooper of St. Paul, May 31.

COOPER R. DREWRY, M.D., to Miss Mary Tasker James, at Catonsville, Md., June 2.

FRANK M. RIDLEY, M.D., Jr., LaGrange, La., to Miss Mabel Hood, at Baltimore, June 6.

ARTHUR R. FLEMING, M.D., Tamaqua, Pa., to Miss Jennie Shelley of Newberry, Pa., June 2.

S. F. RUDOLF, M.D., Ellsworth, Wis., to Miss Mayette M. Casey of Oshkosh, Wis., May 22.

THERON E. QUIMBY, M.D., to Miss Katherine L. Gaffney, both of Syracuse, N. Y., May 22.

WILLIAM J. BAMBER, M.D., Wilson Mills, Mo., to Miss Florence Mathews of Salem, Mo., May 17.

ERNEST L. GATES, M.D., Kirkmansville, Ky., to Miss Fannie Bell Carter of Herndon, Ky., May 16.

ANDREW ALLISON O'DANIEL, M.D., to Miss Ethel I. Bower Goodwin, both of Philadelphia, June 4.

JOHN G. POINDEXTER, M.D., Bridgeport, Texas, to ANNIE E. LYNCH, M.D., of Terrell, Texas, May 29.

WILLIAM LAUNCELOT BROWN, M.D., to Miss Katherine Anna Murphy, both of El Paso, Texas, June 2.

EDWARD W. PERKINS, M.D., Jr., Reams, Va., to Miss Nolis Perkins of Dinwiddie County, Va., May 23.

FRANK T. BRIGHAM, M.D., Two Harbors, Minn., to Miss Katherine Thompson of Duluth, Minn., in April.

EDWARD CORNELIUS CARTLEDGE, M.D., Atlanta, Ga., to Miss Mary Meredith Rounsaville of Rome, Ga., June 6.

BENJAMIN VAN DOREN HEDGES, M.D., Plainfield, N. J., to Miss Adele Cutts Williams of Washington, D. C., in Chicago, June 6.

Deaths

Louis A. Weigel, M.D. University of Maryland, School of Medicine, Baltimore, 1875; one of the earliest to employ the Roentgen rays and an acknowledged authority on the subject; president of the American Orthopedic Association; a member of the Medical Society of the State of New York, American Electrotherapeutic Association, Monroe County Medical Society, Rochester Pathological Society and the Rochester Academy of Medicine; orthopedic surgeon to Rochester City and St. Mary's hospitals, and consulting orthopedic surgeon to the Craig Colony for Epileptics, Sonyea; professor of orthopedic surgery in Niagara University, Buffalo; who had been affected with malignant disease supposed to be due to the constant use of the x-rays which caused the loss of both of his hands in 1904 after repeated operations, died May 31 from a recurrence of the disease, at his home in Rochester, aged 52.

Cornelius Collins Beard, M.D. Jefferson Medical College; acting assistant surgeon in the Army during the Mexican War, and surgeon on the staff of General Beauregard during the Civil War; one of the founders of the New Orleans School of Medicine in 1856, and professor of anatomy in that institution; some time city physician of New Orleans; a specialist in diseases of the eye and ear, who established wards for the treatment of these diseases in Charity Hospital, New Orleans, died at his home in Brookline, Mass., May 15, from senile dementia, after an illness of three years, aged 78.

Philip H. Barton, M.D. College of Physicians and Surgeons in the City of New York, 1864; a member of the American Medical Association; the oldest practitioner of Danville, Ill.; assistant surgeon on the gunboat *Shamrock* during the Civil War; for many years local surgeon for the Wabash Railway Co., and chief examining surgeon of the pension department under the Cleveland administration, died at his home in Danville, Ill., May 29, from cerebral hemorrhage, after an illness of three weeks, aged 71.

Frederick Farwell Long, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1883, local physician in Chester, Pa., for the Pennsylvania System; a member of the Delaware County Medical Society; medical officer of the Pennsylvania Military College, Chester, and a member of the staff of the Chester Hospital, died at his home in Chester from typhoid fever, May 27, aged 41. At a meeting of the staff of the hospital, held May 29, resolutions of regret and condolence were adopted.

Darwin D. Eads, M.D. Jefferson Medical College, Philadelphia, 1859; a botanist of wide repute, whose contributions to the botanical collection of the Smithsonian Institution, Washington, included almost all the flora of the central states; a practitioner of Paris, Ky., for more than 40 years, and a member of the Mississippi Valley Medical Association, died suddenly at the home of his son in Chicago, May 27, from angina pectoris, aged 70.

Jacob S. Raub, M.D. Long Island College Hospital, Brooklyn, N. Y., 1864; a veteran of the Civil War, in which he served as assistant surgeon and was awarded a medal of honor by congress for gallantry in action; for many years an officer of the National Guard of Pennsylvania, and from 1897 to 1902 chief medical referee of the Pension Bureau, Washington, died suddenly in the Pension Office, May 21, from heart disease, aged 66.

George W. Johnson, M.D. College of Physicians and Surgeons, Chicago, 1895; after his graduation an interne in Cook County Hospital, and for three years a member of the medical staff of the Cook County Institutions, Dunning; a member of the American Medical Association, Illinois State Medical Society and Chicago Medical Society, who was operated on for appendicitis May 31, died at the Augustana Hospital, June 4, aged 45.

Samuel W. Wetmore, M.D. University of Buffalo, Medical Department, 1862; for about 15 years professor of surgery and materia medica in the University of Buffalo; once president of the Erie County Medical Society; surgeon in the Army during the Civil War; for several terms health physician of Buffalo, died at his home in that city, May 28, from cerebral hemorrhage, after an illness of one week, aged 74.

Charles Warrenne Allen, M.D. College of Physicians and Surgeons in the City of New York, 1878, of New York City; for several years a member of the American Medical Association; a member of the New York Dermatological Society and American Dermatological Association; professor of dermatology in the Post-Graduate Medical School, died from typhoid fever in the Colonial Hospital, Gibraltar, May 30, aged 51.

James Winniett Digby, M.D. McGill University, Medical Department, Montreal, 1862; for nearly 40 years a practitioner of Brantford, Ont., acting assistant surgeon in the Army and afterward regimental surgeon of the Sixteenth United States Infantry during the Civil War; councilor and deputy reeve of Brantford, and for three years mayor of that city, died at his home, May 29, suddenly from heart disease, aged 64.

Francis L. Shepard, M.D. University of Buffalo, Medical Department, 1896, of Buffalo, N. Y., was found dead on the tracks of the Erie Railway near Batavia, N. Y., early on the morning of May 26, aged 39. As valuables which he was known to possess were missing, he is supposed to have been murdered and his body placed on the tracks.

N. J. Alexis Mueller, M.D. Chicago Medical College, 1886; vice-president of the Cedar Valley and Dubuque (Ia.) Medical Association; for 17 years chief medical examiner of the Roman Catholic Protective Society of Iowa, died at his home in Dyersville, Iowa, May 23, from cerebral hemorrhage, after an illness of two months, aged 61.

John Denniston, M.D. New York University, New York City, 1867; hospital steward in the Army during the Civil War, and for 39 years a leading practitioner of Seneca County, N. Y.; president of Ovid for two terms and once coroner of Seneca County, died at his home in Ovid, May 24, after an illness of four weeks, aged 62.

Herbert W. Rogers, M.D. Northwestern University Medical School, Chicago, 1903, of Montevideo, Minn., a member of the Minnesota State Medical Society, died May 10 from septic peritonitis, due to abscess following an operation for appendicitis nine months before, in St. Barnabas' Hospital, Minneapolis, aged 27.

Daniel Lee Jewett, M.D. College of Physicians and Surgeons in the City of New York, 1862; a member of the American Medical Association, Illinois State Medical Society and Iroquois County Medical Society; a practitioner of Watseka, Ill., for more than 40 years, died at his home in that place, June 5.

Edwin M. McAffee, M.D. Hahnemann Medical College, Philadelphia, 1855; Philadelphia Medical College, 1855; formerly of Clinton, Iowa, and for several years physician in charge at Mudlavia, Ind., died in a hospital in Chicago, May 27, from osteosarcoma, after an illness of nearly three years, aged 73.

Isaac M. Neely, M.D. (Years of Practice, Illinois), 1887; for many years recorder of vital statistics in the office of the clerk of Cook County; formerly a practitioner of Benton and of Du Quoin, Ill.; for eight years postmaster of the latter town, died at his home in Evanston, June 4, aged 80.

Frederick Preiss, M.D. Trinity Medical College, Toronto, 1890, of Buffalo, N. Y.; a member of the Medical Union, Buffalo Academy of Medicine, and Erie County Medical Society, died at the Sisters' Hospital in Buffalo, May 30, twelve days after an operation, aged 37.

Houston T. Guinn, M.D. Medical Department, University of Texas, Galveston, 1892, a member of the State Medical Association of Texas and of the Leon County Medical Society, died from pneumonia at his home in Roger's Prairie, Texas, February 27.

Elbridge Meighs Palmer, M.D. Ohio Medical College, Cincinnati, 1881; Bellevue Hospital Medical College, New York City, 1882, died at his home in Warren, Ind., May 18, from rheumatism and dropsy, after an illness of nearly nine years, aged 51.

Jacques J. Trudell, M.D. University of Vermont, Medical Department, Burlington, 1886, a member of the Rutland County Medical Association, died at his home in Rutland, Vt., May 18, from tuberculosis, after an illness of seven months, aged 43.

Albert H. Wilton, M.D. Detroit (Mich.) College of Medicine, 1900, contract surgeon United States Army, formerly of Flat Rock, Mich., on duty at the Army Medical School, Washington, D. C., died in that city recently, and was buried May 26.

George N. Swartz, M.D. Bellevue Hospital Medical College, New York City, 1875, president of the Northampton County (Pa.) Medical Society, died May 23 at his home in Pen Argyl, Pa., from pneumonia, after a short illness, aged 55.

Elijah Carroll Dycus, M.D. 1843; the pioneer practitioner of Jackson Purchase, Ky.; a member of the Marshall County Medical Society, died at his home in Benton, Ky., March 5, from uremia, after an illness of one day, aged 86.

Smith Dayton Steer, M.D. Cleveland, 1856, for many years a practitioner of Burton, Ohio, and surgeon in the Army during the Civil War, died suddenly at his home in Tacoma, Wash., from heart disease, April 20, aged 79.

Edwin W. Thomas, M.D. Medical Department, Arkansas University, Little Rock, 1880, of Booneville, Ark., died in Magazine, Ark., May 28, from the effects of an overdose of morphin, taken with suicidal intent.

Spencer P. Irvin, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1900, of Philadelphia, died in the hospital of the University of Pennsylvania, from typhoid fever, May 30, aged 27.

B. J. Miles, M.D. Memphis Hospital Medical College, 1892, a member of the State Medical Association of Texas and of the Hunt County Medical Society, died at his home in Merit, Texas, Dec. 26, 1905, aged 42.

John R. Maxwell, M.D. Keokuk (Iowa) Medical College, 1896, lecturer on diseases of the rectum and assistant to the chair of surgery in his alma mater, died at his home in Keokuk, June 4, from nephritis.

Homer Summerville Quinn, M.D. (Examination, Ohio), once a representative from Madison County in the legislature, died at his home in West Jefferson, Ohio, May 17, after an illness of seven months, aged 69.

Joseph Ambrose Dean, M.D. Baltimore University, School of Medicine, 1901, died at his home in New York City, May 14, from endocarditis following septicemia, after an illness of seven weeks, aged 31.

Zelman E. Scott, M.D. Vanderbilt University Medical Department, Nashville, Tenn., 1900, of Barren Plains, Tenn., died at the home of his sister in Springfield, Tenn., May 22, after a long illness, aged 29.

John W. Frost, M.D. Howard University, Medical Department, Washington, D. C., died at his home in Washington, May 17, from the effects of carbolic acid accidentally administered, aged 50.

H. C. Spears, M.D. Transylvania University, Medical Department, Lexington, Ky., 1850, for many years a practitioner of Taylor, Texas, died at his home near Hillsboro, Texas, May 18, aged 78.

Amelia A. Dolson, M.D. (Examination, New York), for many years a practitioner of Buffalo, died in Rome, N. Y., April 25, from pneumonia, after an illness of two days, aged 74.

David Ernest Sedgwick, M.D. Rush Medical College, Chicago, 1877, formerly a member of the Wisconsin legislature, died at his home in York, Neb., May 17, from heart disease, aged 55.

Henry Clay Black, M.D. 1850, a member of the Stillwater Medical Association, died at his home in Freeport, Ohio, April 25, from vesical hemorrhage, after an illness of 16 days, aged 80.

Jesse B. Stone, M.D. Bellevue Hospital Medical College, New York City, 1890, of New York City, died suddenly at the home of his parents in Wichita, Kan., from uremia, May 23, aged 39.

Hugh A. McFatrich, M.D. Eclectic Medical Institute, Cincinnati, 1852, for 30 years a practitioner of Red Oak, Iowa, died recently at the home of his daughter in Denver, Colo., aged 82.

Fritz Mechtold, M.D. New York University, New York City, 1881, an inspector of the New York health department, died at his home in Stapleton, Staten Island, May 19, aged 54.

Jacob Hoke, M.D. Chicago Medical College, 1869, one of the oldest medical practitioners in Illinois, died at his home in Cordova, May 28, from senile debility, aged 90.

Leander Snyder, M.D. Cincinnati Medical College, 1848, died at his home in Lafayette, Ind., May 20, from cerebral hemorrhage, after an illness of ten days, aged 79.

W. Updyke Selover, M.D. New York University, New York City, 1864, in 1888 mayor of Rahway, N. J., died at his home in Newark, N. J., May 21, aged 64.

T. M. Goldsberry, M.D. Kansas City (Mo.) Medical College, 1880, of Viola, Kan., died from tuberculosis in San Antonio, Texas, May 18, after a long illness.

Isaac G. Wheeler, M.D. Albany (N. Y.) Medical College, 1874, died at his home in Buffalo, N. Y., May 22, after an illness of one week, aged 74.

James A. Knight, M.D. Atlanta (Ga.) Medical College, died at his home in Eatonton, Ga., from nephritis, after a prolonged illness, May 19.

C. W. Miller, M.D. Missouri Medical College, St. Louis, 1877, formerly of Doniphan and Toledo, Mo., died at Excelsior Springs, Mo., May 17.

Albert Toepfer, M.D. Göttingen, 1873, died at his home in Jersey City, May 18, from angina pectoris, after an illness of six weeks, aged 57.

Claude R. Norton, M.D. New York Homeopathic Medical College and Hospital, 1872, died at his home in Philadelphia, May 31.

John F. Edwards, M.D. New York University, New York City, 1848, died at his home in Raritan, N. J., May 23 aged 87.

George Given, M.D. Marion-Sims College of Medicine, St. Louis, 1892, died at his home in Mexico, Mo., May 14.

James Mosgrove, M.D. Medical College of Ohio, Cincinnati, 1846, died recently at his home in Havana, Ohio.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

METHOD OF DETERMINING THE OPSONIC INDEX.

COLORADO, TEX., May 23, 1906.

To the Editor:—Please tell me where I can ascertain the method of determining the opsonic index after Wright.

THEODORE MERRILL.

ANSWER.—The method of obtaining the opsonic index is briefly as follows: A certain amount of the serum of the patient whose index we wish to determine is mixed with, let us say, the same amount of a suspension of blood corpuscles, washed three or four times in physiologic salt solution in order to remove all traces of plasma or serum, and to this mixture is added a small quantity of a homogeneous suspension in salt solution of the particular bacterium on which we wish to test the opsonic power. The mixtures for the control tests are made exactly in the same way except that in one the serum of a normal person is substituted for the serum of the patient, and that in the other serum is replaced by physiologic salt solution. After thorough mixing of the ingredients these mixtures are placed at 37 C. for 30 minutes or so when smears are made and stained and the average number of bacteria taken up by the leucocytes determined by counting the number of bacteria in, say, 40 leucocytes from each mixture and dividing the total number of bacteria obtained in this way in each case by the number of leucocytes counted. The opsonic index is the relation of the number of bacteria taken up by the leucocytes in the mixtures containing

the patient's serum to the number taken up by the leucocytes in the mixtures containing the normal serum.

The following outline may serve to illustrate the foregoing explanations:

Mixtures.	Average phagocytosis (40 leucocytes counted).
1. Serum of tuberculous patient 0.1 c.c. + washed blood 0.1 c.c. + suspension of Tubercle B. 0.1 c.c..	3
2. Serum of normal person 0.1 c.c. + washed blood 0.1 c.c. + suspension of Tubercle B. 0.1 c.c.....	4
3. NaCl solution 0.1 c.c. + washed blood 0.1 c.c. + suspension of Tubercle B. 0.1 c.c.....	0.1

In this case, the opsonic index of the tuberculous patient is .75 (3 ÷ 4 = .75); if the figures are reversed the index will be 1.33 (4 ÷ 3 = 1.33), as compared with 1, the normal index. The result indicated in the third mixture emphasizes the fact that in the absence of serum there is very little phagocytosis. It is necessary in this work to make sure that the corpuscles used have been washed quite free of serum, and this is the reason for the third mixtures.

The blood necessary for these tests is obtained easily from the lobe of the ear, a few drops being collected in a small *u*-shaped tube that is centrifugated in order to free the corpuscles from the plasma which is withdrawn with a fine pipette. The corpuscles can now be washed in salt solution. In order to prevent all clotting a small amount of citrate solution may be mixed with the blood, but this is really not essential. The point is that the various mixtures be so made that the results are comparable. The mixing may be done in small pipettes marked so that the same quantity of the various ingredients may be drawn in. After mixing thoroughly by drawing the fluids in and out, the pipette with contents is placed in the incubator.

It is quite impossible to describe fully all the details. The only way to learn all about them is by practical work in the laboratory. Thus the preparation of uniform suspensions of tubercle bacilli, for instance, requires special methods which are described by Wright (*Lancet*, 1904, vol. ii, p. 1138). In the case of other bacteria the main points are to secure uniform suspensions of proper density. If too many bacteria are present the leucocytes may be so crowded with bacteria that the latter can not be counted with accuracy. As to staining methods, Leischmann's method or some modification, e. g., Wright's, answers very well for ordinary bacteria. In the case of mixtures containing tubercle bacilli carbolfuchsin followed by acid and methylene blue gives serviceable pictures. The whole literature on phagocytosis and opsonins is discussed by Hektoen in THE JOURNAL for May 12, 1906, and those who wish to learn more about the actual technical details should read particularly the earlier articles by Wright and Douglas and by Leishmann referred to in Hektoen's article.

PREVENTION OF MOSQUITO BITES.

MELLEN, WIS., May 24, 1906.

To the Editor:—Will you please send me a formula for a solution to use on the face and hands to keep mosquitoes and flies away. They are very troublesome here and I can not find anything to help me.

ANSWER.—Oleum hedioma (American pennyroyal) is a very good remedy applied locally to the hands and face.

State Boards of Registration

COMING EXAMINATIONS.

MICHIGAN State Board of Registration in Medicine, Ann Arbor, June 12. Secretary, B. D. Harlson, Sault Ste Marie.

SOUTH CAROLINA State Board of Medical Examiners, Columbia, June 12. Secretary, W. M. Lester, Columbia.

TEXAS State Board of Medical Examiners, Dallas, June 12. Secretary, T. T. Jackson, San Antonio.

OHIO State Board of Medical Registration and Examination, Cincinnati, Cleveland and Columbus, June 12-14. Secretary, George H. Matson, Columbus.

BOARD representing the Medical Society of Delaware and Board representing the Homeopathic Medical Society of Delaware State and Peninsula, former held at Dover, and latter at Washington, June 19. Secretary, P. W. Tomlinson, Wilmington.

NEW JERSEY State Board of Medical Examiners, Trenton, June 19-20. Secretary, E. L. B. Godfrey, Camden.

NEW YORK Boards of Medical Examiners, Albany, June 19-22. Secretary, Charles F. Wheelock, Albany.

PENNSYLVANIA State Board of Medical Examiners, Annex Hotel, Pittsburg, and North Building, Philadelphia, June 19-22. Secretary, Joseph E. Willetts, Pittsburg.

VIRGINIA State Board of Medical Examiners, Richmond, June 19-22. Secretary, R. S. Martin, Stuart.

MARYLAND Board of Medical Examiners, Baltimore, June 20-23. Secretary, J. McP. Scott, Hagerstown.

Arkansas April Report.—Dr. J. P. Runyan, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, April 10, 1906. The number of subjects examined in was 7; total number of questions asked, 52; percentage required to pass, 75. The total number of candidates examined was 96, of whom 66 passed, including 48 non-graduates, and 30 failed, including 28 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Memphis Hospital Med. Coll., (1885) 75; (1892) 75; (1896)		75
Louisville Med. Coll.	(1874)	75
Keokuk Med. Coll.	(1876)	75
Baltimore University	(1905)	87
Vanderbilt University	(1901)	77
Barnes Med. Coll.	(1895)	75
University of Arkansas	(1906) 75, 76, 82	86
Bellevue Hospital Med Coll.	(1896)	75
University of Tennessee	(1884)	75
University of Louisville	(1896)	75
Northwestern University	(1890)	75
University of Virginia	(1901)	92
Hannibal Med. Coll., Memphis, Tenn.	(1895)	75

Non-graduates, the grade of 75 was reached by eleven, 76 and 77 by four each, 78 by two, 80 by seven, 81 and 82 by two each, 83 by three, 84 by two, 85 by four, 86 by one, 87 by three, 88, 89 and 92 by one each.

FAILED.

University of Louisville	(1875)*	
University of West Tennessee	(1906)	38

* Failed on account of sickness.

Non-graduates, the grade of 48 was reached by one, 51 by two, 57, 58, 59, 61 and 63 by one each, 64, 65, 66 and 67 by two each, 68 by one, 71 by two, 72 and 73 by two each, and 74 by one. In two cases no grade was given.

The following questions were asked:

ANATOMY.

1. At what time in the development of the fetus is the hair formed. 2. Describe a red blood corpuscle. 3. Describe the ulna. 4. Name the peculiar ribs. 5. Describe the deltoid muscle. 6. Name nerve supply of the stomach. 7. Bound Scarpa's triangle. 8. Name the lobes of the liver. 9. Name the glands of the alimentary tract. 10. Name the muscles of the eyeball.

SURGERY.

1. Describe fully the symptoms of acute suppurative appendicitis and give the treatment. 2. Describe a gastroenterostomy and name the indications for the operation. 3. Describe a Colle's fracture and give the treatment. 4. Define cholecystitis and describe the surgical treatment. 5. Describe the operation of trephining and give some of the indications for the operation. 6. Give general rules governing the treatment of gunshot wounds of the abdomen. 7. What are hemorrhoids? Give their cause, classification, diagnosis and surgical treatment. 8. In a case of anuria, how would you determine whether due to suppression or retention? Name the causes of retention of urine and give treatment.

MATERIA MEDICA AND THERAPEUTICS.

1. What is the difference between empirical and rational therapeutics? 2. Name four ways by which medicine may be introduced into the circulation. 3. Name four classes of medicine and give example of each class. Give dose of each example. 4. In what manner do emetics act? Name two vegetable and two mineral emetics. 5. From what is salicin derived? Give first dose and physiologic effect. 6. What precaution would you use in the administration of chloroform? 7. Give physiologic effect of opium and treatment of opium poisoning. 8. Strychnia poisoning is similar to what disease? How would you distinguish them? 9. Give indications for the use of aconite in the early stage of pneumonia. 10. Write a complete prescription for a brisk cathartic containing not less than three ingredients.

PHYSIOLOGY.

1. Give location, size, capacity and function of the stomach. 2. Describe the mechanism of gastric secretion. Give composition of gastric juice. 3. Describe the mechanism of absorption. 4. What is meant by internal secretion? 5. (a) Describe in detail, the medulla oblongata and give its function. (b) Name some of the special nerve centers located there.

PRACTICE OF MEDICINE.

1. What is the one characteristic physical sign of pneumonia? When heard? 2. Give treatment of specific urethritis. 3. What is the clinical significance of the constant appearance in the urine of albumin? Of sugar? 4. Give diagnosis and treatment of pleuritic effusion. 5. Differentiate between cerebral anemia and hyperemia and give treatment for each condition. 6. Give diagnosis and treatment of malarial hematuria.

CHEMISTRY.

1. What is meant by specific gravity? 2. What liquid is used as the standard by which the specific gravity of another liquid is tested? 3. Give chemical composition of human urine. 4. Give specific gravity (approximately) of normal healthy urine. 5. Is urine acid or alkaline? 6. What is urea? 7. Give test for albumin in urine. 8. Give test for sugar in urine.

OBSTETRICS.

1. How does the peritoneum cover the uterus? What and where are the ovaries? 2. What is the danger of incomplete abortion? Give treatment of same. 3. What are the indications for the use of the forceps? Would you tie the cord before or after the child cries. Why? 4. Define cephalhematoma; caput succedaneum and explain difference. 5. What is treatment of septic infection of the breast.

Arkansas Eclectic April Report.—Dr. J. L. Vail, secretary of the Eclectic State Medical Board, reports the written examination held at Little Rock, April 9-10, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. Two candidates were examined, one of whom was a graduate of Bennett Medical College, Chicago, 1883, and the other an undergraduate.

Georgia April Report.—Dr. E. R. Anthony, secretary of the Regular Board of Medical Examiners of Georgia, reports the written examination held at Augusta, April 3-4, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 39, all of whom passed. The following colleges were represented:

PASSED.	Year Grad.	Per Cent.
College.		
University of Georgia, (1903) 88; (1906) the grades of 78 and 79 were reached by one each, 80 was reached by two, 81 by three, 82 by two, 83 by seven, 84 by one, 85 by three, 86 and 87 by two each, and 88 by four.		
Howard University	(1905)	83, 86
Maryland Med. Coll., (1904) 78, 81; (1905) 83, 85, 85, 85; (1906) 75.		
Chattanooga Med. Coll.	(1903)	79

The following questions were asked at the examination held at Augusta, April 3-4:

PHYSIOLOGY.

1. Describe a white blood corpuscle. Where are they formed? What is their function and what is their ultimate end? 2. The salivary secretion is derived from what three glands? What is the physiological action of saliva? 3. What are the three motions of the heart and their cause? 4. What is the volume of air taken in the body in an ordinary inspiration? How is this chemically represented, and how much of the O is absorbed? 5. What is the result of a lesion of the spinal cord in the cervical region? In the sacral region?

PATHOLOGY.

1. Mention the pyogenic bacteria. 2. Describe the blood changes in pernicious anemia. 3. Give the structural changes which take place in chronic and acute appendicitis. 4. Differentiate between a typhoid ulcer and a tuberculous ulcer of the intestines. 5. Describe the process of repair.

GYNECOLOGY.

1. Define menorrhagia and metrorrhagia. (a) Give causes and treatment. 2. Describe an operation for the repair of a lacerated cervix. 3. Give symptoms of carcinoma of the uterus. (a) Treatment. 4. Define retroversion and retroflexion of the uterus. (a) symptoms and treatment. 5. Give symptoms and treatment of ectopic gestation.

PRACTICE.

1. Define lobar pneumonia. (a) Give symptoms and treatment. 2. Define malaria. (a) Give prophylactic and medical treatment. 3. Differentiate between chicken pox and smallpox. 4. Define measles; point out the most dangerous complications. 5. Differentiate true croup and spasmodic.

OBSTETRICS AND DISEASES OF CHILDREN.

1. Give symptoms, causes and treatment, of acute mastitis? 2. Give principal causes and treatment of rupture of uterus. 3. Treatment of inertia uteri. 4. Differentiate between diphtheria and the disease with which it might be confounded. 5. Give treatment of bronchopneumonia.

CHEMISTRY.

1. Give the formula of each of five compounds, giving the name in each case and the dose. 2. Give the name and formula of Epsom salt, Glauber salt and Rochelle salt. 3. Mention five mineral poisons and give the antidote for one of them. 4. Name the non-metallic chemical elements, which in various combinations are found in the tissues of the body. 5. How may you decide whether a urinary deposit is urates or phosphates?

ANATOMY.

1. Describe the inferior maxillary bone. 2. Name muscles of posterior tibeo-fibula group, superficial and deep. (a) Give origin and insertion of (1) Pectorails major; (2) External oblique; (3) Sartorius; (4) Triceps muscles. 3. Give course, relations and branches of external carotid artery. (a) Give blood supply of rectum. 4. Give origin, course and distribution of great sciatic nerve. (a) Give nerve supply of heart. 5. Describe the stomach.

SURGERY.

1. Give treatment, constitutional and local, of burns. 2. Name the varieties of fractures. (a) State the cardinal principles in the treatment of fractures. 3. Describe an operation for the radical cure of oblique inguinal hernia. 4. Define hemorrhoids. (a) Give varieties and treatment. 5. Define a chancre. (a) State period of primary and secondary incubation. (b) Treatment, local and constitutional.

MATERIA MEDICA AND THERAPEUTICS.

1. Source of ergot; define its use in obstetrics. 2. Name four preparations of mercury; give dose of each. 3. Source of quinin; for what is it a specific? 4. What is meant by hemostatics? Describe their mode of action; name several of them. 5. Write a prescription for a general tonic with tincture nux vomica and a preparation of arsenic.

OBSTETRICS AND DISEASES OF CHILDREN.

1. How would you manage a shoulder presentation? 2. Differentiate between a five months' pregnancy ovarian-cystoma-ascites and uterine fibroid. 3. What is the Braxton-Hick's sign of pregnancy? How obtained? 4. Under what condition would you be justified in inducing premature labor? 5. What direction would you give the nurse as to care of infant during first week?

The following questions were asked at the examination held at Atlanta, April 5-6:

PHYSIOLOGY.

1. Describe a red blood corpuscle. How are they formed? Give function and relative number to the white corpuscles. 2. What effect has pancreatic juice on proteids? On carbohydrates? On fats? 3. What is the heart's size, weight and capacity per beat? How much force does it put out at each systole? 4. What quantity of air per hour is necessary for health? What proportion of CO_2 in the air would make it dangerous? 5. What effect has section of the anterolateral columns of the spinal cord? Of the posterior columns?

PATHOLOGY.

1. Define pathology. 2. What steps are necessary in preparing a pathologic specimen for microscopic examination? 3. Give steps in examination of blood to determine the presence of malarial parasite. 4. Describe the pathologic changes in liver produced by cirrhosis (interstitial hepatitis). 5. Differentiate between fatty degeneration and fatty infiltration. 6. Give diagnostic points relative to carcinoma. 7. Describe changes in the tissue produced by tuberculous infection. (Answer five of these questions.)

GYNECOLOGY.

1. Describe the ligaments of the uterus. 2. Describe the blood supply of the uterus and ovaries. 3. Give symptoms and treatment of fibroid tumors of the uterus. 4. Describe an operation for the repair of a complete laceration of the perineum. 5. Describe an operation for the removal of the uterus through the vagina.

PRACTICE.

1. Gallstones; their origin, symptoms and treatment. 2. Etiology and treatment of rickets. 3. Define scarlet fever; outline method of handling same. 4. Enterocolitis; etiology and treatment. 5. Typhoid fever; general prevalence and modes of conveyance.

OBSTETRICS AND DISEASES OF CHILDREN.

1. What symptoms would make you positive of the diagnosis of pregnancy at three months? 2. Diagnosis and treatment of fetal death in utero. 3. Give treatment of prolapse of cord. 4. Differentiate between ileocolitis and cholera infantum. 5. Give early symptoms and usual courses of hip-joint disease.

CHEMISTRY.

1. Give the symbol, valence and a principal compound of each of five chemical elements. 2. Give the chemical name and formula of sugar of lead, blue stone, copperas. 3. Mention five vegetable poisons and give the antidote for one of them. 4. What metallic chemical elements are found in various combinations in the body? 5 How much urea is voided by a healthy adult in 24 hours? How may the amount be determined?

ANATOMY.

1. Describe the humerus. 2. Name the muscles of anterior radio-ulna group. (a) Give origin and insertion of following muscles: (1) Biceps, (2) gastrocnemius, (3) supinator longus, (4) tibialis anticus. 3. Give course, relations and branches of the common femoral artery. (a) Describe the "Circle of Willis." 4. Give origin and distribution of the pneumogastric (vagus) nerve. (a) What nerve supplies the diaphragm. 5. Give relations of the liver; name lobes of liver.

SURGERY.

1. Define fistula in ano. (a) State varieties. (b) Treatment. 2. How would you differentiate between concussion and compression of the brain? 3. Give rules for governing you in trephining. (a) Describe the operation. 4. Describe an operation for removing stones from the male bladder. (a) Give your preference and state reasons.

MATERIA MEDICA AND THERAPEUTICS.

1. Source of strychnin; dose, therapeutic indication. 2. What is Fowler's solution; dose of same. 3. Give chief alkaloids of opium, belladonna, hyoscyamus, stramonium; give dose of each. 4. Give symptoms of acute and chronic lead poisoning; treatment. 5. Name the chief heart depressants and their indications.

OBSTETRICS AND DISEASES OF CHILDREN.

1. Diagnose breech presentation. What are the dangers to the mother and child? Give treatment. 2. Give presumptive, probable, positive signs of extranterine pregnancy. 3. What is Hegar's sign? 4. Discuss nephritis as a complication of pregnancy. 5. What is the average length and weight of a full term fetus?

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 2, 1906:

Duncan, Louis C., asst.-surgeon, granted fifteen days' leave of absence.

Whitmore, E. R., asst.-surgeon, order of relief from duty at Fort Jay, N. Y., and assignment to duty at Fort Warren, Mass., is revoked.

Grissinger, Jay W., asst.-surgeon, relieved from duty at Fort Jay, N. Y., and ordered to Fort Warren, Mass., for duty.

Ekwurzel, Geo. M., asst.-surgeon, ordered to proceed from West Point, N. Y., to Army General Hospital, Washington Barracks, D. C., for temporary duty.

Crosby, Wm. D., surgeon, granted fourteen days' leave of absence.

Duval, Douglas F., asst.-surgeon, leave of absence extended twenty days.

Wells, Francis M., contract surgeon, ordered, on arrival at Fort Niagara, N. Y., to Fort Robinson, Neb., for duty. Granted leave of absence for ten days.

Ware, William H., dental surgeon, returned to Fort Wingate, N. M., from leave of absence.

Halliday, Francis A., contract surgeon, granted leave of absence for fifteen days.

Slater, Ernest F., contract surgeon, returned to Fort Hancock, N. J., from temporary duty at Fort Hamilton, N. Y.

Adair, George F., contract surgeon, returned to Fort Wadsworth, N. Y., from temporary duty at Madison Barracks, N. Y.

Williamson, J. William, contract surgeon, granted leave of absence for ten days.

Campbell, George F., contract surgeon, ordered from Wheatland, Wyo., to Philippine service.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 2, 1906:

Iden, J. H., P. A. surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the *Columbia*.

Brown, E. M., P. A. surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to duty in the department of government and sanitation, Ancon, Panama.

Simons, M. H., medical director, detached from duty in command of the Naval Hospital, Mare Island, Cal., and ordered to duty in command of the Naval Hospital, Philadelphia, Pa.

Persons, R. C., medical director, detached from duty in command of the Naval Hospital, Norfolk, Va., and ordered to duty in command of the Naval Hospital, Mare Island, Cal.

Kindleberger, C. P., surgeon, detached from the *Independence* and ordered to the Asiatic station.

Farenholt, A., surgeon, ordered to the *Independence*.

Lee, A. E., asst.-surgeon, appointed assistant surgeon, with rank of lieutenant junior grade, from May 9, 1906.

Dollard, H. L., surgeon, appointed acting assistant surgeon, from May 26, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending May 30, 1906:

Blue, Rupert, P. A. surgeon, relieved from special temporary duty in San Francisco, Cal., and directed to proceed to Washington, reporting at Bureau.

Amesse, J. W., P. A. surgeon, directed to proceed to Stapleton, N. Y., for special temporary duty, on completion of which to rejoin station at Ellis Island, N. Y.

Lloyd, B. J., P. A. surgeon, leave of absence granted for fifteen days, from May 1, 1906, revoked.

Lloyd, B. J., P. A. surgeon, relieved from duty at Guayaquil, Ecuador, and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters; order revoked.

Ebert, H. C., asst.-surgeon, relieved from duty at Seattle, Wash., and assigned to duty on the U. S. Revenue Cutter *Perry*.

Pettyjohn, Joseph, asst.-surgeon, assigned to duty on the U. S. Revenue Cutter *Thetis*.

Frost, W. H., asst.-surgeon, relieved from duty at Baltimore, Md., and assigned to duty on the U. S. practice ship *Chase*.

Kennedy, S. R. M., acting asst.-surgeon, granted leave of absence for four days, from May 27, 1906.

Rice, W. E., acting asst.-surgeon, granted leave of absence for five days, from June 2, 1906.

Watters, M. H., pharmacist, relieved from temporary duty in San Francisco, Cal., and directed to rejoin station in Chicago.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended, June 2, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, May 12-19, 6 cases.
Colorado: General, April 1-30, 16 cases.
Florida: General, May 19-26, 2 cases.
Illinois: Galesburg, May 19-26, 1 case.
Kentucky: Covington, May 19-26, 1 case.
Louisiana: New Orleans, May 12-19, 5 cases, 1 death.
Massachusetts: Boston, May 19-26, 2 cases; Quincy, 2 cases.
Mississippi: Natchez, May 12-19, 1 case, imported.
Missouri: St. Louis, May 19-26, 4 cases.
New York: New York, May 19-26, 2 cases.
Ohio: Cincinnati, May 18-25, 10 cases.
Oklahoma: Oklahoma City, May 12-26, 13 cases.
Pennsylvania: Altoona, May 19-26, 1 case, imported; Lancaster, 2 cases, 1 death; Pittsburg, May 12-19, 2 cases.
Tennessee: Knoxville, May 19-26, 1 death.
Utah: General, April 1-30, 76 cases.
Virginia: Petersburg, May 19-26, 1 case.
Wisconsin: Appleton, May 19-26, 4 cases; Marinette, May 12-26, 4 cases; Milwaukee, May 19-26, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, April 14-21, 5 cases.
Australia: Brisbane, March 31-April 7, 1 case; Fremantle, March 24-31, 3 cases, 1 death; Perth, March 24-31, 1 case.
Austria: Freudenthal, April 14-21, 2 cases; Gallicia, April 8-14, 7 cases; Vorarlberg, April 14-21, 2 cases.
Chile: Antofagasta, March 1-31, 23 deaths; Iquique, April 22-29, 3 cases.
Gibraltar: April 29-May 6, 2 cases.
Great Britain: Bristol, May 5-12, 2 cases; Newcastle-on-Tyne, 2 cases.
Greece: Athens, May 6-13, 1 death; Patras, April 10-17, 1 cases, 1 death.
India: Calcutta, April 13-20, 174 deaths; Karachi, April 22-29, 20 cases, 15 deaths; Madras, April 21-27, 31 deaths; Rangoon, April 14-21, 41 deaths.
Italy: General, May 3-10, 39 cases.
The Netherlands: Rotterdam, May 5-12, 3 cases.
Russia: Moscow, April 21-May 5, 25 cases, 8 deaths; Odessa, April 29-May 12, 46 cases, 6 deaths; St. Petersburg, April 21-28, 7 cases, 1 death.
Spain: Barcelona, May 1-10, 11 deaths; Seville, April 1-30, 34 deaths.

YELLOW FEVER.

Mexico: Merida, May 6-12, 3 cases, 2 deaths.

CHOLERA—FOREIGN.

India: Calcutta, April 14-21, 86 deaths; Rangoon, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, May 24, 1 death.

PLAGUE—FOREIGN.

India: Calcutta, April 14-21, 207 deaths; Karachi, April 22-29, 307 cases, 246 deaths; Rangoon, April 14-21, 65 deaths.
Peru: Lima, April 23-30, 3 cases, 1 death; Trujillo, 4 cases, 1 death; Mansefu, 1 case.
Straits Settlements: Wellesley Province, April 18, present.

Society Proceedings

COMING MEETINGS.

American Medico-Psychological Society, Boston, June 12-15.
Massachusetts Medical Society, Boston, June 12-15.
Maine Medical Association, Portland, June 13-15.
Minnesota State Medical Association, Minneapolis, June 20.
West Virginia State Medical Assn., Webster Springe, June 20-22.
Medical Society of New Jersey, Atlantic City, June 19-21.
State Medical Society of Wisconsin, Milwaukee, June 27-29.
American Ophthalmological Society, New York City, June 28-29.

ILLINOIS STATE MEDICAL SOCIETY.

Fifty-sixth Annual Meeting, held at Springfield, May 15-17, 1906, under the Presidency of Dr. H. C. Mitchell of Carbondale.

Duties and Obligations Relating to Tuberculosis.

DR. C. W. LILLIE, East St. Louis, dealt with what may be termed the ethical aspects of this subject—the duties of parents and guardians; of teachers in our common schools; of employers of labor of all kinds; of city and county officials, and boards of health and overseers of the poor; of legislators, governors and others whose duty it is to promote the passage of laws for the preservation of public health; of charitable persons in each community; of philanthropic and wealthy citizens; of managers of steam and street railways; of hotel proprietors; of the individual in his personal habits; of all doctors, and especially members of state, county and city medical societies, and more particularly the doctor's duty to make sure of his diagnosis. Lastly, he pointed out the duty of the physician in instructing all others in regard to tuberculosis.

Etiology and Diagnosis of Tubercular Spondylitis in Infancy and Childhood.

DR. J. H. HESS, Chicago, reported two interesting cases, and emphasized the great importance of early *x*-ray examinations in these cases, which was illustrated in Case 1, where the degree of destruction, though only moderate, could be localized beyond a doubt; also the common danger of misinterpreting the reflected pains as local diseases in the parts affected, as illustrated by conclusions in both of the cases reported.

Hysteria in Children.

DR. D'ORSAY HECHT, Chicago, said that this subject merits the attention of the general practitioner and specialist in pediatries and neurology. Inquiry into hysteria in children has not been a searching one. The general belief is that hysteria is a malady of adult life. He spoke of the physical and mental factors conducive to the development of hysteria in children, and cited several illustrative cases. The diagnosis was discussed with special reference to the exclusion of organic disease, the recognition of organic disease complicated by hysteria, and the detection of simulation. The prognosis and treatment were likewise discussed briefly.

Manifestations of Rheumatic Infection in Children.

DR. C. MARTIN WOOD, Decatur, pointed out the difference between adults and children in their reaction to rheumatic infection, and said that there is more extensive and lasting damage in the latter. He spoke of tonsillitis, endocarditis, arthritis, chorea and erythemas as rheumatic manifestations. He emphasized the importance of recognizing both mild and obscure cases. He said there is a marked tendency on the part

of some children to frequent outbreaks in one family or another. This is due to a lessened resistance, either hereditary or acquired. The protection of the heart and the prevention of fresh attacks should be the main object of treatment. The former is secured by rest and counteracting of poisons, while the latter is obtained by hygienic management, especially of clothing, exercise and bathing.

The Attitude of the Physician Toward the Nostrum Evil.

DR. CHARLES SPENCER WILLIAMSON, Chicago, said that a very small part of the knowledge and energy which every physician is constantly giving to his work would, if applied to the eradication of the nostrum evil, do away with it in a very short time. Already there are signs of improvement. In another city where the nostrum evil had reached a year or so ago even a worse stage than in Chicago, he finds from the last 200 prescriptions taken consecutively but 21 calling for proprietaries. This number is, of course, still many times in excess of the justifiable proportion, and yet it shows the diminution to one-half or one-third of what should be readily obtained. All that is necessary is to arouse the profession thoroughly to the exact situation, and it will do as it always has done before—act promptly and efficiently, and wipe out this blot on its fair name.

Diseases in the Aged.

DR. W. H. CURTIS, Wilmington, drew the following conclusions: 1. While the first requisite for longevity may, perhaps, be deemed to be an inborn, perhaps inherited quality of tissue structure wherein one part shall be just as strong as another, like the materials of the famous "One Hoss Shay," it is still manifestly possible and sometime practicable to detect the onset of those pathologic processes frequently originating in middle life, and whose development is synonymous with that symptom-complex known as old age. And, further, when a diagnosis is thus made, it is possible and frequently practicable to institute therapeutic measures that will insure the prolongation of the individual life. 2. The study of the processes of disease in the aged, together with their appropriate therapeutics, offers a rich field for individual research, and one that deserves more thorough cultivation. In this connection present knowledge of the subject needs thorough revision, amplification and systematization at competent hands, and to be made more accessible. 3. It is requisite to the successful study of disease in the aged, and certainly almost essential to the one who undertakes their management, that he be possessed of a peculiar mentality, combining not only a liberal education, but great resourcefulness in tact, patience and sympathy.

Treatment of Obesity.

DR. ALFRED C. CROFTAN, Chicago, presented some newer ideas on the treatment of this condition. He discussed the science and art of reduction cures, the calorimetric method, the three degrees of obesity and their management, the restriction of liquids, the element of exercise, the treatment of complications, thyroid therapy and results.

Significance of Hydrochloric Acid Variation in the Stomach Contents.

DR. E. J. BROWN, Decatur, spoke of the relative importance of HCl determination to other chemical findings, and to the physical examination of the stomach. Errors in diagnosis are made by placing too much reliance on HCl tests. He spoke of the relations of HCl excess to so called bilious attacks, muscular rheumatism, gout, eczema, etc. He emphasized, too, the value of HCl tests in hyperchlorhydria, achylia gastrica, gastritis, cancer, ulcer and neurasthenic gastrica.

The Opium Habit and Its Treatment.

DR. GEORGE F. BUTLER, Chicago, said that there is no systematic routine specific treatment for this disease. The patient and not the disease, here as in all cases, is first to be considered. He first ascertains the maximum dose and the total daily amount of the drug the patient is taking. Then he begins the gradual or more rapid withdrawal of the morphin, the method employed being governed entirely by the character of the case. Under no circumstances must the patient know the amount he is given at any stage of the treatment. If the patient is taking it hypodermically, Butler endeavors to abandon the use of the needle as soon as possible, without detriment to the patient, substituting deodorized tincture of opium or codein in some vehicle, preferably non-alcoholic, which will completely disguise the taste of the opium. The patient is invariably encouraged to abandon the use of the hypodermic syringe. The opium in the mixture for internal use can be diminished as required. Free elimination by the bowels, skin and kidneys must be maintained. He believes morphinism can be cured in the great majority of cases if the physician can have the confidence and entire control of the patient, and have him in an institution where all the facilities for proper treatment are at hand, and provided he can keep the patient under observation a sufficient length of time and will treat the patient mentally and physically, and not merely the disease, according to some routine method.

Serum Therapy.

DR. E. R. LARNED, Chicago, classified sera as to their being efficient or inefficient. He spoke of efforts to produce new sera; also of the attempts made to improve sera which have been inefficient for the purposes intended. He spoke of the investigations that have been carried on with reference to making anti-gonorrheal and anti-syphilitic serum. Attention was directed to modifications of the Widal test for the diagnosis of typhoid fever, and of Wassermann's serum in the treatment of diphtheria.

Crime as a Social Disease.

GOV. CHARLES S. DENEEN confined his remarks mostly to crime in Cook County, where for eight years he was state's attorney, and was brought face to face with some of the worst criminals and criminal cases in the world. While crime has existed in the world almost from the beginning, it is only comparatively recently that it is being unearthed by modern methods, and it is only within the past 25 years that criminal procedure has been directed at the source of crime. The criminal court of Cook County is the greatest in the world. This court has a record of 4,000 prosecutions annually by the state's attorney of Cook County. He closed by saying that crime offered one of the widest fields for medical opportunity in the country.

Popular Diffusion of Medical Knowledge.

DR. H. C. MITCHELL, Carbondale, in his presidential address, brought forth the fact that the educated are the best class of people with whom the doctors have to deal; that there is less disease as the people advance in the educational scale, and that the educated are the most reasonable to deal with. He also stated that the society should advocate the passage of a law compelling people who wish to marry to undergo a physical and mental examination before entering on matrimony, and thus allay much of the suffering caused by immature marriage and consequent evil and sickness. Such a measure, he said, would cheat the divorce courts and the jails of their patrons.

Perirectal Abscess.

DR. CHARLES J. DRUECK, Chicago, emphasized the frequently overlooked details in the treatment of perirectal abscess, and took up the pathology, symptoms and diagnosis. Under treatment he considered the necessity of immediate evacuation. He referred to the facts and fallacies of the different methods of obtaining drainage, and made a few remarks relative to the method employed by him. He spoke of the danger of autointoxication and pelvic congestion during the postoperative treatment, and how to prevent it.

The Brain a Good Field for Surgery.

DR. CHARLES D. CENTER, Quincy, attempted to show by numerous well-authenticated cases of traumatism, that many portions of the brain need not be considered vital parts; that less reluctance should be shown by surgeons in invading the brain under antiseptic precautions, the argument being based on the insensitivenes of the brain to injury. The reason for much unsatisfactory brain surgery in the past is that operative measures have been used too much as a last resort instead

of a first resort, and operation has been done in the presence of inflammation, sepsis, or both. He reported a case of gunshot wound of the brain where the ball traversed the brain once in antero-posterior diameter, and partially traversed again in ricochet. Skiagraphs of the head of the patient at the present time were exhibited, and some interesting phenomena were noticed during the progress of the case.

Renal Diagnosis.

DR. FREDERICK LEUSMAN, Chicago, submitted the following conclusions: 1. Functional tests are helpful in causing us to study the kidney more accurately before operation. Their findings are not without value, but experience shows we can do as well without as with their assistance. When employing them in order to save life, we must at times operate, despite their findings. 2. The cystoscope and ureteral catheter have come to stay, and familiarity with their use is becoming more general every day. They are indispensable diagnostic aids. 3. Time will show the practical value or worthlessness of other diagnostic methods. 4. A chemical, microscopic and bacteriologic examination of the urine obtained from the ureteral catheter frequently means much to the patient. 5. The *x*-ray is desirable, if obtainable. 6. An early incision into the kidney in the presence of symptoms pointing to renal surgery is the safest thing for the patient. 7. Do not explore during suppurating conditions. 8. Most kidney operations demand probing to test ureteral patency. 8. Experience demands early nephrolithotomy as soon as the existence of stone is established; early nephrectomy in renal tuberculosis, and early nephrotomy or nephrectomy in acute renal abscess. 10. Nephrotomy is safer than nephrectomy in calculus, especially multiple; also in nephritis and cystic kidney. 11. In doing renal surgery we must not neglect to take care of the associated abdominal pathology—stomach ulcer, duodenal ulcer, cholelithiasis and cholecystitis, appendicitis, intestinal stricture or tumor, intestinal tuberculosis, uterine and pelvic adnexa disease.

(To be continued.)

THE MEDICAL SOCIETY OF THE CITY HOSPITAL ALUMNI.

Meeting held at the St. Louis Female Hospital, May 17, 1906.

Lymphangioma of the Hand.

DR. C. G. WRIGHT presented a case of this affection occurring in a negro child. Family history was not obtained; physical examination showed a well-nourished child; palpation and auscultation were negative. The skin showed numerous small scars; the inguinal lymph glands were enlarged. There was multiple dactylitis of the right hand, the dorsal surface of the fingers being involved. The bones were palpable in the mass, the enlargement being hard and nodular. The left hand was in good condition. The condition had existed since birth.

DR. JOHN GREEN, JR., thought that the condition of the eyes suggested struma. There was a phlyctenular keratitis with some marginal trouble of the lids. Yet he understood that the tuberculous nature of the condition was denied.

A Case of Complete Prolapse of Uterus.

DR. O. H. ELBRECHT'S patient was a washerwoman with a family and personal history negative. She has had three children. The prolapse had existed for eighteen years. There was pain and tenderness in the groin and in the uterus, and the bladder protruded through the labia majora.

DISCUSSION.

DR. F. J. TAUSSIG said that the question of therapy in these cases is puzzling to the profession. The first thing to be considered is whether or not the patient will consent to an operation. If not, the cup and bell supporting pessary may be tried, but it is not usually successful. Another form of pessary that is not so well known is the Menge pessary, which is a modification of the ordinary hard-rubber ring, with a stem which points outward. The main objection to the ordinary hard-rubber ring is that it is easily expelled, because it tilts. The idea of the bulb stem in the Menge pessary is to keep the round part transversely in the pelvis. The bulb end is short. He said that he had tried it in two cases with good results, both being cases of complete prolapse. Operation was suggested, but was refused. As regards the operative side of the case, Dr. Taussig said that he favors the operation of inverting the uterus in the vagina. If the tubes are resected, conception is prevented. By complete hysterectomy the chance of cystocele forming must always be remembered. Furthermore, in such an operation the vagina is obliterated, which is objectionable in married women. The danger of hernia likewise must not be overlooked.

DR. ELBRECHT said that the prolapsus did not bother this patient except when she was working. He did not think the use of pessaries practicable in women who have to do manual labor. They produce excoriations of the vagina. He said that he has yet to see a pessary that will last. They irritate and produce inflammation. He does not like the operation of inversion. He believes the ideal operation is to remove the uterus by the abdominal route and to sew the broad ligaments together. This gives the intestines something on which to rest. This is accomplished in the Fruend-Wertheim operation. When the possibility of pregnancy can not be excluded it is not right to do this.

Aneurism of Thoracic Aorta with Ulcer of Esophagus and Perigastritis.

DR. W. H. RUSH'S patient was a male, aged 56. He had no specific history. Nine years ago he had some caseous lymphatic glands of the neck excised. He presented himself on two different occasions with pains in the pectoral muscles, cough, no chill, but with decided pains in the epigastrium and symptoms suggestive of ulcer of the stomach. He left the hospital and returned some few months later with diminished weight, pain under the scapula and behind the sternum, also exaggeration of the stomach pains. Analysis of stomach contents after a test meal showed free hydrochloric acid, but no blood. He displayed marked tenderness on the left of the spinal column from the third to the ninth dorsal vertebræ. There was extreme tenderness in the entire epigastrium and left hypochondrium, the point of greatest tenderness being to the left of the median line, about two inches below the ensiform cartilage. A diagnosis of ulcer of the stomach and perigastritis was made and the patient was given potassium iodid and mercury in view of the possibility of existing syphilis. Improvement followed for about two weeks, when he was suddenly seized with hemorrhage and in thirty minutes was dead. The autopsy showed the left pleural cavity filled with blood, the lower lobe of left lung filled with blood, the tissue soft and friable. The entire arch of the aorta and the thoracic aorta were atheromatous and projecting from the outer curve of the arch and from the outer side of the upper part of the thoracic aorta was a group of several small sacculated aneurisms, the smallest no larger than a pea. The largest, very thin-walled, about two inches long and irregularly cylindrical in shape, had ruptured into the left pleural cavity and into the left lung. The bodies of the fifth and sixth dorsal vertebræ were eroded. There was no ulcer of the stomach, but in the esophagus, on a level with the upper and smaller of the aneurisms, was an irregular shallow ulcer about 2 cm. in diameter. There was some perigastritis. Rush did not believe that the ulcer of the esophagus caused any of the pain, which was probably due to the pressure of the aneurism.

DR. C. H. SHUTT referred to the case of a man who presented symptoms of a chest disorder. The diagnosis was made of old pleuritis with dense adhesions. One day while walking about the ward he fell over and died. The autopsy showed a rupture of an aneurism into the chest. The dorsal and lumbar vertebræ were eroded from the eleventh dorsal to the third lumbar. The posterior wall of the aorta had entirely disappeared. Pieces of bone projected into the sac.

Ventral Hernia with Gangrenous Ulceration Over Sac.

DR. CORPEDGE'S patient was a very fat subject, a female. She acquired a hernia in the median line. An operation had been performed a few months previously, but the protrusion recurred. There are now three protruding areas. Each pre-

rusion is about the size of an orange. The abdominal walls are very lax. There is a gangrenous ulcer over one side.

DISCUSSION.

DR. DEUTSCH said that no operation would be justifiable in such a case, but he thought the ulcer could be excised so as to prevent the death of the patient from gangrene.

DR. ELBRECHT stated that the patient's condition had improved since entering the hospital. The ulcer was healing. The operation that had previously been performed was the overlapping operation of Mayo, made in this case by Dr. Brown of the City Hospital. He did not believe that any surgical procedure would avail at this time. He did not think that the ulcer should be healed by grafts, but rather preferred the method of healing by scar tissue, thus strengthening the abdominal walls.

Case of Spina Bifida.

DR. GIVEN CAMPBELL presented this patient, a girl of 12. Ever since birth she has been unable to use the lower extremities, bladder and rectum. This condition, he stated, was undoubtedly a meningo-myelocele, with projection of the lower part of the spinal cord into the tumor. Part of the nervous tissue was defective and produced the paralysis and the paralytic clubfoot.

Case of Insular Sclerosis.

DR. CAMPBELL also presented this patient, a woman of 28. The trouble began two years ago. The practical point to be deduced from the case is that when there is nervous trouble of an organic nature in a person of this age it is apt to be multiple sclerosis. Dr. Campbell then presented another case which he was inclined to believe was also multiple sclerosis. The history of the first patient (aged 28 years) was that she noticed a numbness four months ago. She can not use the right hand in eating. The knee-jerks are increased; Babinski reflex increased. The pupils react to light. Nystagmus is present. There were no signs of mental disturbance. The feet sometimes swell. She has a distinct nervous disturbance of the bladder. The ankle clonus present stamps the organic nature of the trouble. Campbell said that the most common diffuse organic condition that occurs in young women is multiple sclerosis. Among the symptoms are intention tremor, being a trembling in the hands when the individual attempts to perform some voluntary act that requires precision. In this case there is a distinct jerk of the eyeball. Among the important symptoms which this patient shows are spastic condition of the lower limbs and the ankle clonus. If the condition were due to a specific trouble there would be sluggishness to light reaction. In the two temporal halves of the optic discs there was a tendency to atrophy, which is symptomatic of multiple sclerosis. The other patient presented showed the phenomenon of "scanning speech," that is to say, an accentuation of words in talking much as one accentuates in scanning poetry. The intention tremor was very pronounced in the second case. The author believes rest cure the best treatment. The salicylates, iron and quinin help in some cases. The tendency of the disease, however, is to progress, although some patients hold their own for twenty years with this condition.

DISCUSSION.

DR. JOHN GREEN, JR., stated that he had examined the eyes of the first patient presented last November. There were some suggestive symptoms of insular sclerosis. Her vision was good. The left pupil was larger than the right. The reaction to light was sharp. The visual fields were apparently quite normal. He was only able to apply the rough finger tests at the time of the examination at the hospital. He said that in the differential diagnosis between hysteria and multiple sclerosis it is of great importance to get a careful estimation of the color fields. There did not appear to be any true nystagmus, but toward the end of the lateral excursions to the right and to the left there was a slight twitching. This is characteristic of the nystagmus of multiple sclerosis, this condition being more marked than the physiologic nystagmus. There was no ocular paralysis. Mobility was free in all directions. The patient never "saw double." The ophthalmoscope revealed pallor of the discs. The atrophy of multiple sclerosis is a postneuritic atrophy. Dr. Green called attention to the fact that ocular examination is often of the greatest assistance in estimating the differential diagnosis between multiple sclerosis and hysteria. Last year Dr. Schwab and Dr. Green reported such a case. There was slight ocular atrophy. Another sign was contraction of the fields for form and color. The fields were contracted in the usual way, not inverted. There was no evidence of tube-shaped fields. It is said that certain of these cases present eye symptoms years before the other symptoms of multiple sclerosis appear, and therefore it behooves the neurologist in any doubtful case to have the eyes examined.

DR. ELBRECHT said that most patients with spina bifida die within the first week of life. Operations for their cure are not successful. In view of the high mortality of the operation he did not approve of operation. Dennis has reported 57 cases, 25 operations, 15 deaths, 7 recoveries, 3 recoveries with no improvement. These cases often occur in bunches, and he has seen four at the Female Hospital in six weeks. The contraindications for operation are involvement of the bladder, hydrocephalus, clubfoot and marasmus. Deaths after operation occur from meningitis through infection.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-first Annual Meeting, held at Hot Springs, Va., May 22-24, 1906.

The President, DR. RICHARD B. MAURY, Memphis, Tenn., in the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Clement Cleveland, New York; vice-presidents, Dr. J. Clifton Edgar, New York, and Dr. Willis E. Ford, Utica, N. Y.; secretary, Dr. J. Riddle Goffe, New York (re-elected); treasurer, Dr. J. Montgomery Baldy, Philadelphia (re-elected); member of the council, Dr. Richard D. Maury, Memphis, Tenn.

The next annual meeting of the society will be held in Washington, D. C., 1907, in connection with the Congress of Physicians and Surgeons.

Is Gynecology Dead? Or Gynecology Against Overdone and Misapplied Surgery.

DR. E. C. GEHRUNG, St. Louis, Mo., protested against unnecessary, if not criminal, surgery that has been and is still being practiced in cases that can not be benefited by the knife, and in others that can be as well or better treated by other and less radical means. In many of the latter the knife may obtain a quicker and, perhaps, just as good result, yet at the cost of mutilation. Many women complain of various kinds and degrees of suffering, yet a most careful examination does not disclose anything on which to operate. Such women may be treated gynecologically with good results. All uterine displacements should be considered in the light of ptoses and herniæ. When the keystone between the pelvis and abdomen is displaced, abdominal ptosis must follow. These enteroptoses may be of minor degree only, or may extend to the kidney or other abdominal organs, and thus produce symptoms for which the simple uterine displacement will not account satisfactorily. The replacement of the pelvic organs frequently relieves the symptoms.

Concerning forward displacements, the situation is altogether different. Since anatomists say that anteversion and anteflexion are the normal positions of the uterus, the pathologist denies pathologic effects to antedisplacements, and the practitioner is only too happy to ignore a state of affairs for which the means of relief are so imperfect, apparently, and so difficult to apply, with so little or no results in prospect. Many of these displacements get well within a comparatively short time, while in others the support or pessary must be worn a long time. The wearing of a pessary he considered as much a cure as the wearing of a cicatrix. The author has obtained excellent results in the relief and cure of symptoms and diseases which have been declared utterly incurable by many gynecologists, by mechanical and other means. His results in cases

of antedisplacements and retrodisplacements have been extremely satisfactory.

DISCUSSION.

DR. GEORGE M. EDEBOHLS, New York, said that his views in regard to anteversion and anteflexion of the uterus have undergone radical changes since he began to practice gynecology. When he finds the uterus anteverted or antellexed, it leads him to suspect that he has to deal with excessive mobility of the organ; in other words, it is the therapeutic equivalent of retroversion of the uterus, and he treats it like a case of retroversion, and invariably his efforts have been crowned with success.

DR. J. RIDDLE GOFFE, New York, expressed himself as having been convinced for many years that anteversion is a normal position of the uterus, and teaches that anteversion should be stricken out of the list of pathologic positions of the fundus of the uterus. He has not found in later years any occasion whatever to interfere with a fundus that lies well to the front. He believes the symptoms of which patients complain can be accounted for by other conditions, and he invariably finds some pathologic condition to account for the symptoms. He does not try to manipulate the fundus in any way with a view of fixing it, or to interfere with its mobility. Anteflexion he regards in a different light and believes that the anteflexed uterus is, as a rule, unless the flexion is acquired, an undeveloped uterus, and he treats it by improving its nutrition, stimulating its circulation, and developing the organ. If the case is one of acquired anteflexion, he treats it very much in the same way, but does not interfere with it surgically by shortening its ligaments or by attaching the fundus to abnormal tissue.

Enteroptosis.

DR. RICHARD R. SMITH, Grand Rapids, Mich., said that the subject is of especial importance to the gynecologist since the majority of the patients who come to him for relief show more or less signs of this condition. It may form merely the background of the picture which the physician has before him, or it may be the complete picture without other pathology. It can be left out of consideration, so far as treatment goes, in patients presenting neoplasms or pelvic inflammatory diseases. It is of great importance in considering lacerations, the various displacements of the uterus, as well as that large class of patients presenting pelvic symptoms, so-called, with slight or undemonstrable lesion. One should consider the matter of operation in such cases with great care, and be most guarded in his prognosis. Above all, in case operation is done, it is very necessary that a proper course of treatment be carried out afterward if one expects to get results. Enteroptosis and fair health are not incompatible. The enteroptosis may be of a decided degree and still the woman go through life comfortably and accomplish her work.

The treatment of enteroptosis should really begin in childhood, and it means all that proper hygiene can do for children. The outdoor life, the exercise and school work should be carefully balanced. The child should be encouraged in the various sports which develop the chest and the muscles of the trunk. If a woman comes suffering from the symptoms which accompany enteroptosis, she should be put to bed. She should be given an abundant, easily digested diet, massage, and any necessary indications as to the bowels and digestion should be met. Pain usually decreases rapidly under this plan. He emphasized the great good that may be obtained from an outdoor life. He advises many of his patients practically as he would a patient suffering from tuberculosis. If the abdomen is prominent or very flabby, and the woman has general abdominal tenderness, and more especially if he finds that by standing behind her and placing the hands over the lower abdomen (the patient standing) and lifting up, relief is obtained, he advises a well-fitting abdominal bandage. If the patient is young, the thorax more or less mobile, he has often given a system of breathing exercises with the idea of increasing the lung capacity and the size of the upper abdomen.

DISCUSSION.

DR. CHARLES P. NOBLE, Philadelphia, thinks that it is a mistake to teach that all patients who have loose kidneys have enteroptosis. It is only in a minority of cases that a loose kidney is complicated with enteroptosis. Many patients who have enteroptosis have loose kidneys; but the converse, in his judgment, is not true. He has seen a few cases of loose kidney due to traumatism, but the number is very small. The great majority of women who have loose kidneys are unmarried; therefore the question of child-bearing is a very small factor in these subjects. It has much more to do with enteroptosis by causing a flaccid condition of the abdominal muscles; but so far as the kidney is concerned, it is a small factor.

DR. MATTHEW D. MANN, Buffalo, New York, said that the all-pervading style among civilized women of constricting the waist line is an important causal factor of enteroptosis. The universality of this mode of dress has a great deal to do with the condition mentioned as it is more commonly found in women than in men. Men who wear tight belts, like blacksmiths, and men who constrict their waists with bands, are the subjects of enteroptoses. He condemned the use of corsets as worn by young women, and said the thorax can never attain its proper shape; the abdominal muscles lacked supportive power, and the contents of the abdomen would be forced down into an abnormal position. He has not been satisfied with operative procedures for the relief of the conditions mentioned.

DR. JOHN G. CLARK, Philadelphia, has had twenty-one cases of various ptoses of the viscera, chief among which have been ptoses of the transverse colon, especially of the sigmoid flexure. He recalls several cases of ptosis of the sigmoid flexure, where a loop of bowel has been caught, in which there was alternating constipation and diarrhea, which is not infrequently seen. He demonstrated a method which he has resorted to for the relief of this condition. He believes that in many of these cases inattention to the bowels is one material factor in the etiology.

DR. GOFFE asked what percentage of these cases came to operation?

DR. CLARK replied, a very small percentage, as medical men relieve the great majority of them.

DR. J. CLIFTON EDGAR, New York, called attention to the too early getting up of women after confinement as a causal factor of enteroptoses. Women, when they get up too early after confinement, complain of stomach trouble, and drift into the hands of a stomach specialist, who finds dropping of the stomach or intestines, yet they did not complain before. Such women are prone to attribute their discomfort to uterine trouble, to uterine displacement, etc. Constipation, alternating with relaxation of the bowels, produced by the constant administration of cathartics given during pregnancy, is one of many causal factors. There is a faulty involution of the intestinal supports. Involution of the abdomen should be complete before a woman gets up after confinement. Massage is a valuable means of prophylaxis. He believes in women, especially primipara, wearing an abdominal support for three months after confinement.

DR. J. RIDDLE GOFFE, in referring to the corset as a part of woman's dress, said he believes the new-fashioned straight front corset is an improvement over those previously worn. He thinks it is a beneficial garment to women. Instead of using abdominal supports, as was formerly his custom after laparotomy, he puts a woman in a straight-front corset, which is carefully made by a woman who carries out his idea. This corset supports the abdomen well. Women like it very much, and continue to wear it for years. He has also recommended this corset to be worn by women with pendulous abdomens.

DR. SMITH, in closing, said that a tight corset will exaggerate such conditions as he had referred to; but it must be remembered that enteroptosis is not due to the wearing of a tight corset nor to tight lacing. Enteroptosis is quite common in Arabian women, who never wear corsets.

Thrombosis and Embolism Following Abdominal Operation.

DR. JOSEPH TABER JOHNSON, Washington, D. C., said that these complications occur most frequently after supravaginal hysterectomies for fibroid tumors; although they may follow any abdominal section, notably after suspension of the uterus. The left leg is most frequently affected; both legs may be affected alternately. The symptoms generally appear between

the second and third weeks. Suppuration is rare. Recovery is the rule, although convalescence is protracted. Pulmonary, cardiac, or cerebral embolism may result, and prove rapidly fatal. He reported two such cases, and gave the histories of six cases of thrombophlebitis with slow recoveries.

Postoperative Embolism.

DR. EUGENE BOISE, Grand Rapids, Mich., said that this condition affects the pulmonary artery and its branches in the great majority of cases. An embolus presupposes a thrombus. For the formation of a thrombus three elements are necessary, fibrinogen and calcium salts, which exist normally in the blood, and nucleoproteid, which is never found in normal blood. Nucleoproteid is formed by the degeneration of the blood plates and leucocytes. Certain conditions of the blood and blood vessels predispose to thrombosis, as anemia or chlorosis, sepsis, excess of calcium salts, retardation of rate of blood current, traumatism, inflammation of coats of vessels, pressure, etc. Conditions calling for operation often involve one or more of these conditions. Fibroid tumors, which show the greatest percentage of postoperative emboli, are coincident with excess of calcium salts in the blood and degeneration of the musculature of the heart, with consequent imperfect contractions, and residual blood, with retardation of blood flow, predisposing to heart clot. Indications for treatment are mostly looking toward prevention. When pulmonary embolism occurs nothing is of much avail except the administration of oxygen.

DISCUSSION.

DR. CHARLES P. NOBLE, Philadelphia, said that of 7,130 women operated on in the Johns Hopkins Hospital, phlebitis occurred in 48. After perineorrhaphy, 4 times; after myomectomy, 19 times; after the removal of ovarian cystoma, 9 times; after hysterectomy for carcinoma, 5 times; after suspension of the uterus, 3 times; after suspensio-uteri and perineorrhaphy, 4 times; after hysterectomy for pelvic inflammatory disease, once, and after miscellaneous operations, 3 times. He has had embolism and phlebitis of the left crural vein occur twice after right nephrorrhaphies. He has had these conditions occur after hysterorrhaphy and after operations on the cervix and perineum.

DR. REUBEN PETERSON, Ann Arbor, Mich., said that the mystery in the etiology of thrombosis and embolism makes it doubly interesting. These conditions come on not only immediately after operation, but a month or six weeks afterward. He has a patient with an aggravated form of femoral thrombophlebitis, which appeared in the third week after operation. The operation consisted of the removal of non-purulent, nonadherent appendages. There was not enough sepsis connected with the case to warrant one in thinking that any such condition would develop. During the third week the woman developed thrombophlebitis of the left side of a severe type, in that it extended not only in the femoral region, but also up over the buttocks. Swelling was very intense. Very soon a dark area appeared over the left femoral vein and gradually this developed into a necrosis.

He has taken statistics from his clinic for the last four and a half years, but which do not include the case mentioned. Of 3,000 operations performed during this period there were 6 cases of femoral thrombosis. There were 1,050 women operated on. Of these, 3 came for removal of the appendages; one for hysterectomy for fibroid, although there were 80 or 100 cases in which fibroids were removed; one came for simple dilatation and curettement of the uterus, and in one case the record was not available. The left femoral vein was affected four times, and in one case the left groin and right leg were affected. As regards its occurrence after operation, in one case it occurred eleven days after operation, in two cases fourteen days, in two cases nineteen days and in one case twenty-one days.

DR. EDWARD REYNOLDS, Boston, said that thrombosis has occurred most frequently in his experience in patients treated for the correction of retrodeviations of the uterus, in which there has been a great deal of congestion before operation. He is inclined to believe that thromboses are more frequent now than they were a dozen or fifteen years ago.

DR. ANDREW F. CURRIER, New York, said that the tendency of surgeons in these days to get patients up in a hurry after the performance of serious operations has doubtless something to do with the production of thrombosis.

DR. SETH C. GORDON, Portland, Me., agreed with Dr. Currier and expressed the belief that too early getting up of patients after operation is causative of phlebitis.

DR. T. J. WATKINS, Chicago, said that evidence has been brought forth to show that thromboses are in some cases due to infection. Thromboses are common in infectious diseases where there is no traumatism. They also are common after typhoid fever. He believes that thromboses are nearly as frequent after typhoid as after abdominal section.

DR. J. MONTGOMERY BALDY, Philadelphia, said that while sepsis, pressure by retractors and traumatism of the pelvic veins are possible causal factors, yet none of the explanations so far offered seemed sufficiently feasible to explain a large number of cases.

SYMPOSIUM ON DILATATION VERSUS INCISION OF THE PREGNANT UTERUS.

Artificial Dilatation of the Cervix Uteri.

DR. GEORGE TUCKER HARRISON, New York, said that some indications for the artificial dilatation of the cervix are local morbid conditions which interfere to such an extent with the dilatability of the os uteri and cervix that the natural forces are inadequate to the end to be attained. In addition, direct danger to mother and child might furnish an indication for the artificial dilatation of the cervix, a danger only to be averted by a speedy delivery of the child. Of the local diseases, he referred especially to those which make a rigid, unyielding condition of the cervix, namely, chronic inflammations, syphilitic induration, carcinoma or hypertrophy of the infravaginal and supravaginal portions. Of the pathologic conditions which demand active intervention in the interests of both mother and child, to effect a speedy delivery he mentioned eclampsia, prolapse of the umbilical cord, placenta prævia portialis, asphyxia of the fetus, and beginning sapremic intoxication consequent on a dead fetus or retention of placental parts. Furthermore, the premature detachment of the placenta attended by internal or external hemorrhage is a grave and dangerous accident which demands prompt delivery. Artificial dilatation is indicated when in an obstetric operation (forceps, version, perforation) the passage of the head or breech meets with difficulty in consequence of an insufficiently dilated os uteri. Finally, an indication is furnished in cases of transverse presentation with premature rupture of the membranes, when version, according to Braxton-Hicks method, is not yet possible, and also in certain cases of narrow pelvis, with the head at the brim, in order to make the prophylactic version.

An indication for the incision of the os uteri is given when immediate delivery is a matter of paramount importance, the os uteri not being sufficiently dilated and the cervical canal, on the contrary, unfolded. Deep incisions of the cervix, usually combined with deep vaginal and perineal incisions, open up a wider field of operative intervention. The advantages of this procedure were pointed out. Mechanical dilatation of the cervical canal and external os uteri can be effected by distension with the fetal body after bringing down a foot, by the hand, by the use of expanding foreign bodies, such as tents, dilators, iodoform gauze, rubber bags or balloons.

Dilatation of the Parturient Uterus.

DR. PHILANDER A. HARRIS, Paterson, N. J., referred to a method of manual dilatation which he has employed for the past twenty-two years, and first described in 1893. By this method a far greater tonic strain can be applied on the musculature of the cervical ring than by any other manual method. It is also far less fatiguing than other methods. It relies mainly on the flexor muscles of the fingers and hands. Not all cervices are dilatable. Cancer of the cervix may render it undilatable. A cervix which has been partly cut away and amputated or sewn, or resewn, may contain so much white fibrous tissue that it is undilatable. The average time required safely to dilate the cervical ring to a circumference of eleven or twelve inches should be forty-five minutes. If the cervix is not effaced the average time of ninety minutes will be necessary safely to dilate the cervical ring to a circumference of eleven or twelve inches. The special advantage of knowing how to dilate man-

nally is that the operator always has his hands with him, and they scarcely ever fail to dilate the cervix if properly used. The disadvantages of the method are the fatigue incident to the task and the frequent changing of hands from left to right and from right to left is liable to carry septic matter into the vagina from the rectum or some unwatched area.

The advantages of instrumental dilatation, as accomplished by the instrument which the author presented, are that it will dilate any cervix that is dilatable. It is easy of introduction. It does not have to be withdrawn and reintroduced over and over again, as in the long operation when done by the hand. It is provided with a dynamometer which shows not only the number of pounds pressure which are being exerted on the cervical ring, but it also shows whether the ring is dilating under the pressure. The instrument has a safety device, so that extensive laceration can not occur if the instrument is used properly. Laceration, however, rarely occurs, except in the hands of impatient and unskilled operators. The instrument is made of steel and can be sterilized. No one should use it who has not previously and practically studied its behavior.

Advantages of Bimanual Dilatation of the Pregnant and Parturient Uterus.

DR. J. CLIFTON EDGAR, New York, said that no method of manual dilatation can ever entirely supplant instrumental dilatation and incision. The uterine and vaginal tampon, graduated hard dilators, branched rectal dilators, hydrostatic dilators, superficial and deep incisions and vaginal Cesarean section are all applicable in appropriate cases. Dilatation by hydrostatic bags, the fingers of one or both hands, and branched rectal dilators are feasible in most instances and are to be preferred to methods by incision. Incision of the uterus for purposes of dilatation is rarely indicated. The best method of cervical dilatation is the one which most closely imitates Nature's method of dilatation, hence the advantages of hydrostatic and manual dilatation. The bimanual method is a closer imitation of the natural process than any other method of manual dilatation, being in this respect analogous to the bag of membranes or the hydrostatic bag, because the force used for dilating the cervical ring is directed from above downward. Far greater force can be brought to bear on the cervical ring, if need be, by the bimanual method than by any other, because the fingers of both hands are brought into play, and the stronger flexor muscles of the fingers and hand are the ones made use of. There is no danger of prematurely rupturing the membranes, as there is when the fingers of one hand are passed through the cervix. There is no interference with the original presentation or position, since the finger ends closely hug the lateral uterine wall; this can not be said of any other manual method of dilatation nor even of hydrostatic bags. The bimanual method is far less fatiguing than any other method, because the strain is distributed in both hands and the sense of touch of the operator's fingers is unimpaired, as there is no constriction of the hands, as happens when one hand is used.

(To be continued.)

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-first Annual Meeting, held at Washington, D. C., May 15-16, 1906.

(Concluded from page 1723.)

Therapeutic Advantages of a Refined and Concentrated Diphtheria Antitoxin.

DR. W. H. PARK, New York, described a method of refining this antitoxin by precipitating and eliminating the serum albumin and non-proteid constituents by means of ammonium sulphate, afterward precipitating other materials by sodium chlorid, and finally by dialysis rendering it very similar to the blood. This also gives it two and one-half times the concentration of the original. Nine months' use of antitoxin thus prepared seems to show that it is preferable to that formerly employed. Rashes following its use are milder, and constitutional symptoms practically do not appear. The results indicate that the proteid substances thus eliminated are deleterious.

A Case of Bacillus Coli Septicemia with Hemolysis.

DRS. A. D. BLACKADER and B. D. GILLIES, Montreal, reported this case, apparently uterine in origin, which occurred in a woman of 27. Hemoglobin was 48 per cent. and marked hemolysis was shown microscopically and by the presence in the blood of methemoglobin. Cultures from the blood, urine and uterus showed purely the colon bacillus.

DISCUSSION.

DR. T. G. JANEWAY, New York, said that in such cases one must think of one other thing, although that was not suggested by the autopsy in this instance, and that is the possibility of bichlorid poisoning. He has seen four cases within six months, and not one of them presented salivation. In the urinary passages bacillus coli infections often pass off and the patients recover.

DR. G. M. STERNBERG, Washington, said the injection of *Bacillus coli communis* into animals gives results similar to those described by Dr. Blackader. From the fatty changes in certain tissues Sternberg was led in some instances to suspect yellow fever, and when he was studying yellow fever he obtained from those subjects a pathogenic variety of the colon bacillus. It produced fatal results in dogs, but there was not such marked hemoglobinuria as that described.

Hemachromatosis and Diabetes Mellitus.

DR. THOMAS B. FUTCHER, Baltimore, said that hemachromatosis is distinguished by a triad of symptoms, pigmentation of the skin and viscera, hypertrophic cirrhosis of the liver, and, in advanced stages, persistent diabetes. He reported two fatal cases in which diabetes was a terminal event. The first was in a man of 45, an alcoholic, who died 20 months after onset of symptoms, diabetes being present during 15 months. The second patient was a man of 53, with striking pigmentation and acidosis, who had diabetes six weeks before death. In both, microscopic examination of the skin showed the characteristic iron reaction in the sweat glands and ducts. The disease has been called bronze diabetes. The cases should not be reported as such unless the pigment is found histologically. The pigment is of two kinds, one iron-containing, the other iron-free or hemofuscin.

DR. JAMES B. HERRICK, Chicago, mentioned a case giving a clinical picture somewhat like those reported, with also tuberculosis of the lung. Autopsy revealed atrophic cirrhosis of the liver, pulmonary tuberculosis, and absence of pigment in the viscera. The sequence of events in this case ought to have ruled out the idea of hemachromatosis, as for seven years there were indications of cirrhosis, for four years glycosuria, and lastly, pigmentation of the skin developed. With these three symptoms present one may be misled unless they are carefully analyzed.

Universal Skin Itching without Skin Lesion; Hematogenous Urobilinuria; Peculiar Erythrocytolysis.

DRS. JOHN K. MITCHELL and A. R. ALLEN, Philadelphia, reported the case of a man who for seven or eight years had chronic malaria, followed by Raynaud's disease, and finally itching of the whole body. The particular interest lay in the urinary and blood findings. To the urobilinuria a hematogenous rather than a hepatogenous origin was ascribed because: 1. No bile acids were present. 2. The liver function was always good. 3. There was no increase in the indican. The blood showed non-staining granular bodies, in or partly in or outside the red cells; they could not be stained by any method tried, appearing more like the endoglobular degenerative bodies which have been described than any other condition. Eosinophilia was conspicuous, reaching as high as 13 per cent. Treatment by hot baths and intermittent courses of the iodids and mercury diminished the itching and caused improved condition of the blood and urine; there is, however, a constant tendency to relapse.

Two Cases of Essential Pentosuria.

DR. T. W. JANEWAY, New York, said that these cases occurred in brothers. One had been mildly diabetic for a year, but the constant presence of sugar, notwithstanding change in diet, raised the suspicion of pentosuria, and tests confirmed its presence. It was also shown to be present in the second case.

The diagnosis requires several steps. The substance reduces Fehling's solution only after several minutes' boiling, when there is a sudden change to a greenish or orange-yellow throughout the specimen. This phenomenon should lead to the suspicion of pentose. The urine should then be tested by orcein, then by the spectroscope, and finally by ozosone prepared by a chemist. The clinical significance of the condition is mainly negative; that is, it should not be confounded with diabetes and the diet so modified. The real nature is not known, but it has no connection with decreased sugar combustion. It is analogous to cystinuria and alkaptonuria rather than to diabetes.

Aplastic Anemia with Report of a Case.

DR. R. S. LAVENSON, Philadelphia, reported the case of a woman of 35, previously healthy, who without apparent cause developed a profound, rapidly fatal anemia. The blood showed marked reduction of red cells and hemoglobin, a few normoblasts, no megaloblasts, and leukopenia with relative lymphocytosis. Autopsy showed complete aplasia of the bone marrow.

DISCUSSION.

DR. R. C. CABOT, Boston, has seen two cases believed to be of this type, but which were not confirmed by autopsy. The practical point is the prognosis. All these patients go progressively and rapidly to death in a few months. In cases of pernicious anemia there are usually waves of improvement.

DR. A. C. WARTHIN, Ann Arbor, took issue with the statements as to the rarity of the condition in question. In Michigan this is the most common form of pernicious anemia, most cases showing no changes in the bone marrow. These cases might well be called hemolytic anemias. The name aplastic is better applied to the megaloblastic type.

DR. ALFRED STENGEL, Philadelphia, does not agree with Dr. Warthin as to the absence of bone marrow changes in pernicious anemia. As to aplastic anemia being an independent disease, his views have changed somewhat, and he thinks there is, after all, a primary hemolysis in these cases. He does not believe there is aplasia of bone marrow before the symptoms of the disease develop.

DR. E. O. OPIE, New York, said that as the polynuclear cells are replaced by lymphocytes, and the former arise only from the bone marrow, this is an indication that the disease is primary in the marrow.

Exophthalmus in Leukemia.

DR. JAMES B. HERRICK, Chicago, reported the case of an Italian, aged 26, who had been ill for 32 days. He saw him during 10 or 12 days, the case running the typical course of acute lymphatic leukemia. Bilateral exophthalmus was a striking feature. Autopsy showed hyperplasia of the spleen and other lymphoid structures, and leucocytic infiltration of the lungs, liver and other organs. Exophthalmus was explained by a retrobulbar leukemic infiltration of the fatty tissue.

Leucolytic Action of Roentgen Rays and Injection of Leucolytic Serum in Leukemia.

DRS. J. A. CAPPS and J. F. SMITH, Chicago, showed that the serum of a leukemic patient under treatment by the Roentgen ray caused leukopenia in animals into which it was injected, and also caused destruction of the leucocytes in a hanging drop of human blood, the destruction of the lymphocytes being greater than that of the polynuclears. Serum from such a patient was injected into a person who had lymphatic leukemia and had been for three months without treatment. Four c.c. were injected with a drop in leucocytes during 48 hours from 160,000 to 104,000. The leucocytes then increased gradually until at the end of 13 days the original number had been reached. A second injection of 5 c.c. caused a drop less marked than the first, and the number was regained in nine days. After this the count went up to 320,000. A third injection of 10 c.c., when the count was 300,000, brought it down to 215,000, but the number was again attained in seven days. Since the treatment the leucocytes have been more variable than they were before. The points emphasized were: 1. The immediate drops of the leucocytes in all the experiments and the selective action of the serum on the mononuclear forms; 2, recovery of number was more quick after each of the injections, suggesting a partial immunity against the serum. The same immunity is also noted in cases being treated by the Roentgen ray.

DR. A. S. WARTHIN, Ann Arbor, did not regard the leucolyses reported as being very striking; many serums produce the same effect. There are also striking falls in the leucocytes in cases of leukemia not so treated, the cells in this disease being very unstable. In one case pneumonia caused a fall from 750,000 to 4,000. The improvement noted in cases of leukemia treated by the Roentgen ray is due to the destruction of leucocytes, but the disease itself goes on.

The Nucleus Test in Pancreatic Disease.

DR. J. DUTTON STEELE, Philadelphia, confirmed Schmidt's and Wallenfang's experiments on dogs and studied two cases of pancreatic disease and nine of other affections in human beings. In one of the cases of pancreatic disease, muscle nuclei in ingested meat were not digested. The chief fault with the test is that it does not show the reaction until the pancreas is far gone. Further experiments indicate, however, that a modification of Schmidt's method may be made to show partial as well as complete lesions of the organ. One case in contrast showed lack of digestion of muscle fiber when chronic appendicitis was the lesion.

Experiments on the Digestive Activity of Pepsin in the Gastric Contents.

DRS. JOSEPH SAILER and C. F. FARR, Philadelphia, spoke particularly on the advantages and disadvantages of Mett's method of estimating peptic activity; they find it reliable. The elaborate details of using it described by some they do not find necessary. Two essential points are that the albumin must be coagulated by boiling and that five minutes must be allowed for the test. Experiments indicate that the inhibitory factors in peptic digestion depend on the products of peptic activity on albumins. The effects of various foods and food preservatives on peptic digestion were given in detail. Boric acid did not appear to inhibit, and alcohol and formalin exercised but very little inhibitory action on digestion by pepsin. Benzoic acid and sodium sulphid caused strong inhibition and sodium chlorid a considerable degree.

Glandular Fever with Dermal Lesions Suggesting Syphilis.

DRS. ALFRED STENGEL, J. W. WHITE and J. S. EVANS, Philadelphia, detailed this case, which occurred in a physician of 26 years. He had anal fistula when a child, and later suffered from neurasthenia, which was relieved by glasses. The onset of the condition reported was sudden, as an itching of the skin and a tendency to urticaria. An icteroid condition then appeared and finally sore throat, there being vague pains in the body, the joints, and finally substernal. Fever then developed and the eruption became more marked. The lymphatic glands of the neck, axillæ, inguinal regions and finally in all the superficial groups, became enlarged. The eruption can best be described as an atypical erythema multiforme. Some leucocytosis was present, at one time reaching 22,000. The juice from massage glands and also some removed glands were examined for the *Treponema pallidum* and found negative. Cultures from the blood, enlarged glands, and from the tonsils showed a streptococcus resembling the *S. equi* found in the epidemic coryza and glandular fever of horses. The patient has gradually improved without specific treatment.

Experimental Study of Cerebrospinal Meningitis.

DR. SIMON FLEXNER, New York, described experiments carried out at the request of the New York health department. The experiments were made on 30 or 40 monkeys of the rhesus type. When culture of the meningococcus is injected into the spinal canal symptoms identical with those in man appear. They develop quickly, beginning in two or three hours, and when severe prove rapidly fatal, the animal dying within fourteen hours. If it survives forty-eight hours recovery usually occurs. Microscopically the organisms are found at first extracellular in the fluid, and the fluid is clear. In from two to six hours emigration of leucocytes and englobulation of cocci may be observed. The phagocytosis of cocci increases, except in

the rapidly fatal cases, and at the end of twelve hours most of the cocci are within leucocytes. Dr. Flexner has reached the conclusion that the cocci do not multiply in the cerebrospinal canal, the effect depending on the amount of material injected. By grading the amount of the cocci and by multiple injections of small amounts of culture, there can be induced a subinfection lasting a week or more. A serious infection can then be caused in the ordinary manner. The lesions found are not only those of an acute inflammation, but there is also dilatation of the cerebral ventricles. An interesting point in the condition is the localization of the disease. The exudate on the base of the brain has been ascribed to the fact that the infection comes from the nose, but it is also said that the monkey can not be infected through the nose. In the monkey, however, the sites of the lesions are the same as in man, even when the cocci are introduced into the lower end of the spinal canal. Some explanation other than that of the point of entrance is then needed. The upper nasal passages in some of the monkeys became inflamed and suggested that the coccus came down from the brain into the nose. In one instance careful examination left no doubt that this extension had actually occurred. Without throwing doubt on the possibility of infection through the nose, it appears probable that reinfection of the nose occurs from above. It remains yet to work out the poison and find how it acts. Some problems of immunity have also been investigated during the studies summarized.

Internal Hydrocephalus Complicating and Following Cerebrospinal Meningitis.

Dr. Henry Koplik, New York, described three forms, the acute, subacute and chronic. The first may come very suddenly at the end of twenty-four hours, and is dangerous to life unless quickly relieved. The subacute and chronic are the forms usually mentioned. The cause is commonly said to be the matting together of the structures at the base of the brain and occluding the ventricles. This is regarded by Dr. Koplik as only one cause, as in some cases the narrow ventricles are open. Hence, more than the mechanical factor must be active. The diagnosis of hydrocephalus is best determined by percussion of the skull by MacEwen's method or a modification of it. By this means can be told whether or not lumbar puncture is justified at the outset. Some cases get well without interference. Others will recover if pressure from hydrocephalus be relieved early. In chronic cases puncture is of no use, even the repeated punctures advised by some being valueless.

Nature of Spirochetes.

Dr. F. G. Novy, Ann Arbor, showed numerous lantern slides illustrating his views regarding the nature of spirochetes, based on his work with *Spirochæta obermeieri*. He does not agree with Schaudinn that they are protozoa. In the first place they have no structure as do other protozoa; they possess neither nucleus, micronucleus, flagellum or undulating membrane. Secondly, tests of resistance show that under adverse conditions they are not destroyed as are protozoa, but they approach the bacteria in resisting qualities.

Prevention and Cure of Relapsing Fever.

Dr. F. G. Novy immunizes rats and uses the serum from them, devising a unit for its measurement. By injecting this serum in conjunction with cultures of spirilla, he has reached the conclusion that the serum treatment, or prevention, of relapsing fever in human beings is a possibility. He regards the tick fever of Africa as distinct from the relapsing fever of Europe.

Thrombophlebitis of Splenic and Portal Veins and Its Relation to Splenic Anemia.

Dr. A. S. Warthin, Ann Arbor, reported an additional case of this lesion, supplementing the three previously put on record by Dock and Warthin, and illustrated the histology by lantern slides. The fourth case is one of relatively acute splenic thrombophlebitis following pneumonia, and presenting features of secondary anemia and splenic fibrosis. Many of the cases of this condition reported followed typhoid fever, the patient never fully recovering from that disease. The cases indicate that certain forms of Banti's disease have primarily nothing to do with the spleen. The advisability of the term splenic anemia for them is doubtful. Those in which thrombophlebitis is present had better be put in a separate class under that name. The sequence appears to be thrombosis, fibrosis of the spleen, and passive congestion of the liver and other structures. Apparently old infections underlie the condition.

Two Cases of Sudden Death Associated with Hypertrophy of the Thymus.

Dr. Warthin also presented slides of these cases. Both concerned boys of 6 years. One had enlargement of the glands simulating Hodgkin's disease; in the other the glands were not enlarged. Both died the so-called thymic death. In each the thymus was 17 cm. long, reaching from the floor of the mouth to the apex of the heart, and causing tracheal stenosis. In both the lymph nodes showed the same changes, atrophy and disappearance of the lymphoid elements, with hyperplasia of the endothelial and fibrous hyperplasia. Similar changes were also found in the spleen and bone marrow. The thymus showed lymphoid hyperplasia and an eosinophilia. The findings are taken to indicate the action of toxemia which resulted in lymphoid exhaustion of the lymph nodes, bone marrow and spleen, and a compensatory hypertrophy of the thymus. The cases suggest a relationship between Hodgkin's disease and thymic hypertrophy.

Clinical Notes on Eighty Cases of Exophthalmic Goiter.

Dr. W. Gilman Thompson, New York, spoke particularly of three features of the disease: 1. The large number of cases in which an acute febrile toxemia develops. In addition to the cardinal symptoms there appear fever, acute dilatation of the heart, cardiac murmurs, dyspnea, precordial, thoracic or abdominal pain, edema of the legs, erythema and sweating. The temperature not infrequently reaches 104 or more, and may persist for weeks. These toxic exacerbations are particularly favorable for treatment by the new cytotoxic serum. 2. The cause of these toxic attacks appear often to be intercurrent mild infections, as tonsillitis, influenza, bronchitis or gastrointestinal disturbance. 3. The close resemblance of these cases when aggravated to malignant endocarditis. In the hospital at one time was a case of each, and they were interchangeable, as far as clinical symptoms were concerned, for teaching purposes. Dr. Thompson has never seen a case of this condition end in recovery with the exception of two or three treated by the serum described by Dr. Rogers.

Treatment of Exophthalmic Goiter by a Specific Cytotoxin.

Dr. John Rogers, New York, described the results of treatment with the serum prepared by Dr. Beebe and himself. Of 41 personal cases, 8 patients were cured, 25 improved, 6 gave no result, and 2 died. Of 28 patients treated by others, 3 were cured, 16 improved, and 9 unimproved. Two types of serum are employed—the pathologic, obtained by injecting rabbits with the products of diseased glands, and the normal, obtained by the use of normal glands. There is not a great distinction between the two, but they differ in activity. The serum is given subcutaneously by hypodermatic injection. Reaction follows the injection, usually according to the benefit derived in severity. Swelling after a few hours appears, the part becoming not unlike erysipelas in appearance. Constitutional disturbance also accompanies the swelling. A reaction that is alarming occurs occasionally. No patients have died from this, but Dr. Rogers believes they might. The reaction is believed to be due to the entrance of the serum into a vein. The dosage varies. Usually 1 c.c. is given every other day, with the patient in bed; if reaction occurs, no more is given until it subsides. Regarding the limitations of the serum, if the goiter is small and soft the chances for improvement or cure are good, by the normal serum. If the thyroid be large and hard, the case is doubtful. Cases may respond to pathologic serum when they do not to normal serum. The acute toxic are the most amenable; the chronic toxic the most refractory. Improvement in the chronic or subacute cases is usually slow. Dr. Rogers recognizes these forms of the disease: 1. The simple subacute or chronic; 2. the acute toxic; 3. the chronic toxic; 4. the atypical. Under the last are included the simple adeno-

natous or cystic goiter with subsequent Graves' symptoms, the cases without goiter, and the psychopathic cases.

Preparation of a Specific Cytotoxin for Exophthalmic Goiter.

DR. S. P. BEEBE, New York, gave in detail the principles underlying the serum referred to by Dr. Rogers. It had its basis in serums cytolytic for other organs, as the liver and kidney. The nucleoproteids alone or in combination with the thyroglobulin of the gland are employed, as it is believed, to produce higher specificity than when the whole gland is employed. The serum is based on the assumption that in the disease in question there is hyperactivity of the thyroid. The serum possesses both cytolytic and antitoxic properties. The presence of the latter is shown particularly in the acute toxic cases which are so amenable to treatment.

Pathology of Exophthalmic Goiter.

DR. JAMES EWING, New York, gave a lantern slide demonstration of the changes in the thyroid in the disease in question. He believes the change is one of functional hypertrophy. To establish this theory it is not necessary that a specific change be found in the gland. Histologic studies favor the theory of hypersecretion, though the structure need not differ essentially from that found in simple goiter. Clinical data offer a definite basis for serum therapy in uncomplicated cases. The possible implication of other organs and the permanent lesions in many organs in prolonged cases seem to preclude the possibility of securing any agent that will be curative in all cases.

DISCUSSION.

DR. S. J. MELTZER, New York, showed photographs of a case of exophthalmic goiter cured by treatment with thymus gland, and afterward the administration of sodium phosphate. As to the work of Rogers and Beebe, it is a remarkable discovery. They should see, however, if the serum attacks the thyroid in animals as did the hepatolysins the liver in their experiments.

DR. F. FORCHHEIMER, Cincinnati, reported 31 cases of exophthalmic goiter treated in an empirical manner by giving 5 grains of hydrobromate of quinin and 1 grain of ergotin three or four times daily. There was a decided improvement in the patients, beginning in some in six weeks, in others only after fifteen months. In four of the cases the method failed, and four are still under treatment. The remaining 23 patients have been comparatively restored to health.

Enzymes in Phagocytic Cells of Inflammatory Exudate.

DR. EUGENE L. OPIE, New York, described the technic for determining the ferments in leucocytes by which he arrived at the proof of two, one in the polynuclear and the other in the large mononuclear. The former digests actively in an alkaline medium and to it he has given the name leukoprotase. That of the mononuclear cells digests only in an acid medium and has been named lymphoprotase. The importance of the ferments in the progress of pathologic processes is very great. He has also found in the blood in a case of myelogenous leukemia a proteolytic substance capable of digesting fibrin.

Experiments in Psychotherapy.

DR. L. F. BARKER, Baltimore, was much impressed by the methods of Dejerine, who isolated certain patients and impressed on them the fact that they ought to get well. He has tried the plan on a small scale in the Johns Hopkins Hospital with results that are distinctly gratifying. Only the simpler methods of isolation, persuasion and re-education or suggestion, have been used as a rule, hypnotism being used only in special cases. Neurasthenics and that class of subjects do best under this mode of treatment.

Effect of the Roentgen Ray on Unresolved Pneumonia; Nature of Toxic Reaction to Roentgen Ray.

DR. D. L. EDSALL, Philadelphia, reported observations on two cases of unresolved pneumonia. Under the action of the rays one case cleared up in five days and the other in ten days. The changes in metabolism during this time showed a remarkable increase in the output, just as occurs in ordinary pneumonia at the time of the crisis. In the three cases in which he used the rays response was prompt. It appears worth while to try this agent farther in cases of unresolved pneumonia. As to the nature of the toxic reaction to the Roentgen ray, a case of pernicious anemia was instructive. A slight exposure was followed in a few hours by a violent reaction. The patient improved somewhat at first, but died within a week or two. A second patient suffering from polyarthritis was given a slight exposure. He was evidently ill that night and next day was worse, and death was feared. He finally slowly returned to the original condition before the exposure was given. In both these cases the excretion was diminished. The indications are that the Roentgen ray causes a remarkable breakdown of tissue already toxic and this sudden change causes metabolism to halt. The experiments confirm Dr. Edsall's previous views that the action of the rays is on something already in the body and not the production of a new substance. The best explanation is that it acts as a ferment accelerator.

Officers Elected.

The officers for the ensuing year are: President, Dr. F. P. Kinnicutt, New York; vice-president, Dr. James Tyson, Philadelphia; secretary, Dr. Henry Hun, Albany; recorder, Dr. S. Solis-Cohen, Philadelphia; treasurer, Dr. J. P. Crozer Griffith, Philadelphia; member of council, Dr. L. F. Barker, Baltimore.

Active members elected are: Dr. W. M. L. Coplin, Philadelphia; Dr. S. W. Lambert, New York; Dr. G. H. Weaver, Chicago. Associate members elected are: Dr. A. A. Eshner, Philadelphia; Drs. R. G. Freeman and J. S. Billings, Jr., New York; Dr. I. P. Lyon, Buffalo; Dr. M. J. Rosenau, Washington; Dr. E. R. Baldwin, Saranac Lake; Dr. H. C. Moffitt, San Francisco.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Nocturnal Enuresis.

In considering the most common causes of nocturnal enuresis V. Chastel de Boinville, in an article in the *Practitioner*, states that nocturnal enuresis is commonly found in weak, excitable children. It occurs, however, in every class of life. It is more common in boys than in girls, but among adults women are more frequently affected. It is very frequently associated with some local irritative process, such as thread worms, and it also occurs more frequently in those who are in the habit of lying on the back during sleep, as the weight of the urine presses on the trigone of the bladder. He mentions the fact also that pressure exerted between the bedclothes and the sacrum may reflexly be a contributing cause. He speaks of the pernicious habit of overloading the stomach at the evening meal, also flatulence of the stomach or bowels from any cause as etiologic factors. A bed which is too hot or, on the other hand, one which is too cold, as may be the case in the winter months, also contributes to this condition. Children born in warmer climates, such as in India, may acquire the habit on coming to a colder climate. In a great many instances it is the symptom of organic disease of a serious nature, many of which he enumerates in his article. The treatment, according to this author, must pertain to removing any conditions or group of conditions which may be found to contribute to this malady, as nocturnal enuresis is not in itself a disease, but a symptom. Any sources of general debility must be checked, if possible, and every means taken to strengthen the patient. Exercise in the open air is of great value, and in some cases change of air is very beneficial. Cool baths and, in obstinate cases, general massage along with suitable tonics, are advised. Any source of local irritation, the most frequent of which is thread worms, must be promptly removed. The urine in any case should be thoroughly tested, and if any irritating combinations are found, they should be properly corrected. The

time of eating should be carefully regulated, and special attention should be given to the evening meal, which should consist of easily digestible food, and tea and coffee, on account of their diuretic action, should be avoided. As a rule, he advises against a strong animal diet, and against those articles of food which are liable to produce flatulency. Inquiry should be made as to whether or not nocturnal fits have been overlooked by the nurse or parents, and if these fits should be found to be present, bromids in proper doses should be administered. In hysterical and mentally weak patients strict discipline should be installed, avoiding, however, scolding or punishing the child. The child should be encouraged to use all his will power to overcome the trouble. The urine should be passed the last thing before going to bed, and it is a good plan to accustom the patient to emptying the bowels in the evening rather than in the morning. By this means the evil effects of the full rectum are disposed of, pelvic congestion is relieved, and the gradually enlarging bladder meets with a minimum amount of resistance during sleep. The writer speaks of this simple precaution alone as having cured the habit. The tendency to lie on the back during sleep may be overcome by attaching a bobbin or some other hard body to the patient in such a position that during his sleep, if he lies in this attitude, the pressure of the bobbin will disturb him and cause him to turn on his side. The night clothing should be properly regulated so as not to allow the child to get too hot or too cold when asleep. The bed should have a moderately hard mattress, and the clothing should not be too heavy. It is sometimes well in these cases to awaken the patient at least once during the night to empty the bladder.

DRUGS.

Of the medicinal preparations employed, the author recommends belladonna or atropin and nux vomica or strychnin as the best preparations, although these drugs differ widely in their general effects, they each directly or indirectly have control over the sphincters. Belladonna acts probably by producing a paresis of the inhibitory nerve fibers of the sympathetic, and also by depressing the peripheral nerve endings of the sensory nerves. In ordinary medicinal quantities its action is not very powerful, and as children bear the drug well, it is recommended administered in large doses, beginning, however, with moderate-sized doses, such as perhaps 2 minims of the tincture for a child of 5 years. The dose may be gradually increased until some effects are shown on the pupils, and after ten days or two weeks the quantity may be gradually diminished. He advises the administration of two doses daily, one just before the evening meal and the other just before retiring. In this way the maximum action of the preparation is obtained at the desired period. In the administration of atropin it should be injected subcutaneously, the doses ranging to suit the age of the child, and increased to the point of tolerance. The injection should be given about one hour previous to retiring. For a child of 5 years he recommends a dose of 1 minim of a 1 per cent. solution to begin with. Nux vomica and its alkaloid, strychnin, act by stimulating the motor nerves in the spinal cord, and are of value because of their tonic effects. Care must be observed in the administration of these drugs to avoid any cumulative action, for in such instances more harm than good may be done by their tendency to set up intermittent contraction in the muscular walls of the bladder. Consequently the object is to administer such quantities as will maintain the tone of the sphincter muscle and strengthen the patient generally. For a child of 5 years he recommends 1½-minim doses of the tincture of nux vomica, given three times daily after meals, and continued for several weeks. If desirable, the nux vomica may be combined with belladonna without fear of decreasing the influence of either preparation over the condition present. For this purpose he recommends the following combination:

R.	Tincturæ belladonnæ	.m. xxxii	2|12
	Tincturæ nucis vomicæ	.m. xxiv	1|55
	Syrupi aurantii floris	.3iiss	|15
	Aquæ q. s. ad	.....℥iv	120|

M. Sig.: Two teaspoonfuls three times a day for a child of 5 years.

If for any reason it is desirable, the tincture of belladonna may be provided in a separate bottle and added to the nux vomica preparation in increasing quantities, as the physician may see fit. The author mentions urotropin (hexamethylenamin) as sometimes of value when the urine is at fault; and the alkalies, he states, are invaluable for a patient having highly acid urine. Potassium bromid, chloral hydrate, opium, codein, morphin, cannabis indica, and other narcotics should, as a rule, be avoided.

LOCAL MEASURES.

When medicinal preparations do not succeed local methods may be resorted to. For this purpose he recommends cold douches applied to the perineum as being very efficacious; they should be given the last thing before retiring. Counter-irritation by means of fly blisters applied to the spinal column has not proven of much benefit in his experience, and, indeed, in some cases it has aggravated the condition. Good results, however, have in some instances followed the passage of a sound into the urethra. Where this method is employed, it must be carried out daily for several days to obtain proper results. In other cases good results have followed cauterization of the urethra in females, and has been more successful when the cauterization is carried well back toward the neck of the bladder. In males the catheter may be passed down to the prostatic portion of the urethra, and a solution of silver nitrate, 10 grains to the ounce, may be injected.

ELECTRICITY.

As regards electricity, its effects, according to this author, are, as a rule, only transient in character. The constant and faradic current both have been used. One pole may be placed over the pubes or over the lumbar spine, and the other in the perineum or even in the urethra. The current should be reasonably strong, without producing any unusual symptoms on the part of the patient. It should be kept in mind, however, that nocturnal enuresis in children usually ceases of its own accord about the period of puberty, and consequently heroic measures are not advisable, nor is it wise to introduce electric or other sounds into the genital orifices of children approaching this age. If necessary, local massage may be applied in connection with cold douches to the perineum, and the sphincter itself may be massaged by means of a probe introduced into the neck of the bladder. But in cases of children, again, there is always great danger of producing the habit of masturbation. In adults, nocturnal enuresis often depends on conditions more serious, such as tumors in the pelvis, or organic disease of the nervous system. In such cases, of course, but little can be done in the way of a cure.

OTHER CAUSES AND THEIR TREATMENT.

R. T. Morris, in New York *Med. Jour.*, states that preputial adhesions are predominantly the cause of enuresis, particularly among girls, and recommends that no treatment be outlined until that trouble has been disposed of. This disturbance is more frequent in girls than in boys.

J. Ullman, in an abstract in "Practical Medicine Series", summarizes the following outline of treatment: 1, Hygiene; 2, psychical and suggestive; 3, physical or mechanical. He emphasizes the importance of massage combined with the administration of atropin internally. The object of the massage is to remedy the insufficient action of the detrusors and sphincter vesicæ. He, therefore, recommends that:

1. The rectum be freed of fecal matter and massage applied, by means of the index finger, to the sphincter vesicæ, gently tapping it for one-half to one minute.

2. A deep circular massage should be applied over the hypogastric region for two or three minutes.

3. The patient should be placed in the dorsal position, with the knees tightly drawn together, and instructed to resist while the knees are drawn apart; and with the knees wide apart he should be told to resist while they are drawn together. Adduction and abduction of the limbs should be carried out in the same manner. These movements should occupy about two minutes.

4. The patient should be instructed to stand against the wall or a door and cross and recross one thigh over the other for a period of five minutes.

5. Vibratory massage may be applied to the lumbar and sacral regions for one or two minutes.

Percy Lewis, in *Med. Record*, has noticed that infants fed on starchy foods always pass a larger amount of urine than normal, and that a decrease in the amount takes place when this form of food is cut off. Starchy food, however, may be allowed for breakfast as a rule when the nocturnal enuresis has stopped. At the same time tonic treatment should be instituted and pushed for a period of four weeks, when a normal diet may be resumed.

Medicolegal

Physician's Account Book May be Used to Show Birth.

The Court of Criminal Appeals of Texas says that in Neill vs. State, a prosecution for rape, the state introduced a physician, who testified that he waited on the mother at the time the prosecutrix was born, as shown by his memorandum in medical accounts made at the time. The accused objected on the ground "that the same was not admissible for any purpose. There is only one kind of book admissible in evidence; that is, an account book between the parties, where there is a suit between the parties connected with the account. It is hearsay testimony and improper." But the court holds that these objections were not tenable. It says that it has heretofore held that books kept by a physician, when proper predicate was laid, as the record here showed, are admissible to show the birth of children.

Privilege Not Waived by Mere Taking of Deposition.

The First Appellate Division of the Supreme Court of New York says that the plaintiff in the personal injury case of Clifford vs. Denver & Rio Grande Railroad Co. took the deposition of a physician in Colorado, but she did not use same at the trial. When the defendant then proposed to use it, she objected to certain portions thereof involving disclosures by the physician. Thus was raised the question of whether the plaintiff, by procuring this testimony to be taken, waived the prohibition contained in section 834 of the New York Code of Civil Procedure, which prevents a physician from disclosing any information which he acquired in attending a patient in his professional capacity. The court holds that she did not. It says that a waiver, by section 836, must be made in open court, on the trial of the action, and that it certainly could not be said that the proceeding to take the testimony by commission before the trial was a proceeding in open court on the trial of the action. After the testimony was taken and the deposition returned to the court, the plaintiff was not bound to read it. Not having read it, when the defendant offered to read same, it made the physician its witness, and the competency of the witness to testify was to be determined by the trial judge. Nothing that the plaintiff had done before and nothing that had happened in the course of the action could be a waiver of the right to prevent a disclosure to the jury of the facts acquired by this physician in attending the plaintiff except a waiver in open court or a written stipulation signed by the attorneys. The prohibition being absolute, unless waived, and the only method by which it could be waived, namely, a waiver in open court on the trial, or a written stipulation signed by the attorneys, not appearing, the court thinks that it was rightly held that the evidence was not competent.

Insurance of Physician and Septicemia—"Operation."

The Supreme Court of Illinois says, in Central Accident Insurance Co. vs. Rembe, that a practicing physician and surgeon having agreed to take an accident policy, was tendered one containing the clause: "This policy does not cover . . . death . . . resulting wholly or partially from any of the following causes: . . . voluntary or involuntary taking of poison or contact with poisoned substance." He declined to accept it, and insisted on an additional clause to cover blood poisoning or septicemia. The policy then had a slip attached which read: "Policy No. 75,719 is hereby extended to cover that class of injuries known as septic wounds, caused by accident while performing any operation pertaining to the business of the insured, the poison matter being injected into the wound at the time of the accident and resulting in disability or death under the conditions of the policy." This was accepted.

Thereafter, during the treatment, in his office, of a patient afflicted with syphilis in a virulent form, of several weeks' duration, the physician, while in the act of preparing medicine to be administered to the patient, attempted to remove the cork from a glass bottle, and the top or neck of it was accidentally broken, cutting a small wound in one of the fingers of his right hand. He immediately dressed the cut, binding it up in gauze cloth and rubber tissue. On the afternoon of the same day, and again on the next day, he treated a child suffering from an abscess in the ear, which was discharging pus. On the next morning after breaking the bottle the wound on his finger began to pain him and swell, and on the second day a well-defined case of septicemia, or blood poisoning, manifested itself. Skilled physicians were called, who, by operation and other means, made every effort to save his life, but failed, his death occurring in about three weeks after the accident.

The insurance company refused to pay the policy, and the beneficiaries brought suit, recovering a judgment, which is affirmed. The court says that the facts not only tended to prove, but established, the fact that the death of the insured resulted from the accidental injury to his finger. And it is unable to see how it could be seriously contended that under these facts and the law applicable to the case his beneficiaries were not entitled to recover under the first count of their declaration, which declared on the policy as it was first tendered without the attached slip and averred that while the insured was in pursuit of his avocation as a physician and surgeon, and while undertaking to remove the cork from a bottle, his finger was injured, and the wound caused blood poisoning, resulting in his death. The policy without the slip provided that on the death of the insured caused by external violence and accidental means the company would pay the beneficiaries therein named $5,000. The cause of the death, as the court understands it, was the wound in the finger, by means of which blood poisoning intervened. Without the accidental wounding of the finger blood poisoning would not have ensued, and, therefore, that disease was only incidental to the wound.

The claim, not seriously insisted on, that the inoculation was caused by the pus discharged from the child's ear, was wholly unsupported by the evidence.

Again, with regard to the contention that the death of the insured was caused by the wound coming in contact with virus from the syphilitic patient, either on the hands of the insured or on the neck of the bottle which was broken, the court says that if poisonous germs entered the wound, causing blood poisoning, that wound would not be, within the fair meaning of the policy, "coming in contact with poisonous substance," causing death. Even if the germs were a poisonous substance within the meaning of the policy, those germs, according to the testimony, would have produced no injurious effect, but for the wound in the finger. They only became poisonous when allowed to mingle with the blood.

The court is also satisfied that the evidence justified the verdict in favor of the beneficiaries under the second count of the declaration, which declared on the policy as amended by the attached slip, and averred the injury from the broken bottle, and that poison matter from the patient suffering from syphilis became injected into the wound at the time of the accident, resulting in death. It says that it seemed to be contended on behalf of the company that the provision in the slip only covered cases where a surgeon or physician was in the act of performing an operation or administering treatment on a patient, and in the act met with some accident which caused a wound, while the wound in this case was not inflicted while the insured was so engaged in performing an

operation or administering treatment to the patient. But in the court's opinion this was too narrow a construction of the language of the policy.

Suppose the insured had cut his finger by accident while preparing instruments with which to perform a surgical operation, or if, after the operation, in disinfecting the instrument used he had accidentally wounded himself and blood poisoning had in either case intervened, would it be claimed there was no right of recovery under the conditions of this policy? The court hardly thinks it would be seriously so contended. The clause was, "caused by accident while performing any operation pertaining to the business of the insured." His business was both that of a surgeon and physician. His treatment of the patient was a continuing service, and should not be limited to any particular act in such treatment. The preparation of medicine to be taken internally at the very time the patient was in his office, or subsequently, according to directions, was, the court thinks, administering treatment pertaining to the business of the insured, within the meaning of this clause of the policy. "Operation" meant treatment pertaining to the business of the insured.

Furthermore, the court says that if the accidental cutting of the finger caused the death, then, under the proof in this case, it was clearly independent of all other causes.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

May 26.

1 *Heart Failure as the Result of Deficient Food. A. Haig, London, England.
2 Syphilitic Lesions of the Joints in Hereditary and Acquired Infections. R. W. Taylor, New York.
3 Syphilitic Arthritis. H. W. Frauenthal, New York.
4 *Conservatism in the Treatment of Senile Hypertrophy of the Prostate. J. Van der Poel, New York.
5 *Gonococcal Infection in Woman. E. H. Grandin, New York.
6 Gigli's Operation. J. A. Schmitt, New York.
7 *Occurrence and Prognosis of Pneumonia as Studied at the Lincoln Hospital. L. F. Bishop, New York.

1. **Heart Failure as Result of Deficient Food.** Haig says that he has seen many instances in which deficient nourishment had led directly to more or less marked heart failure. If there is a condition of slow, steady, and constant deficiency of food there comes a time when not only do the less important tissues suffer, but the heart, muscles and brain cells begin to suffer with them to some extent. The signs of heart failure are perfectly definite and distinct, and those who know how to look for them can scarcely miss them. The three chief objects of treatment are: The diminishing of the work of the heart, the increase of its nourishment, and for a time the administration of a tonic. In practice he gives all such adults who consult him nine grains of albumin a day for each pound of body weight. He declares that although this is only a rough guide it is decidedly better than none. He also watches the temperature of the body, the condition of the blood, the ratio of the capillary reflux to blood pressure, and the other circulatory signs, and looks on these taken together as safe and certain guides to a condition of satisfactory nourishment and nutrition.

4. **Conservatism in Treatment of Senile Hypertrophy of Prostate.** Van der Poel believes that catheterism properly applied and at the right time renders unnecessary many operations. Modern technic and advance in the knowlege of prostatectomy now make operations justifiable which would not have been so according to former statistics. Operation must be considered much earlier in poorer patients or when aseptic catheterism is practically impossible than in other cases. Prophylactic prostatectomy can not be recommended. In acute retentions the catheter should be given a full trial before intervention. In certain cases catheterism will reestablish the urinary function for many years, no matter what may be the condition of the prostate. In chronic retentions, if the case is septic and has been so for some time, clean catheterism seems to be powerless to eradicate its effects and operation is indicated.

5. **Gonococcal Infection in Women.** Grandin declares that fully 60 per cent. of his operative work among women would not exist if it were not for the gonococcus. About 45 per cent. of sterile marriages are due to the gonococcus. It is said that about 75 per cent. of males have had gonorrhea at least once, while fully 30 per cent. carry the latent germ to the nuptial couch. It has been estimated that about 30 per cent. of blindness is traceable to this disease. The disease is tolerated on account of ignorance on the part of the laity. The code of morals should be the same for both man and woman. The author believes that in time public opinion will make itself heard and that boards of health will be obliged to place gonorrhea in the class of acute infectious diseases.

7. **Occurrence and Prognosis of Pneumonia.**—Bishop states that pneumonia, in a measure, ranks with the degenerative diseases. If people live long enough and become feeble from age, and escape death from epidemics, or any of the infections, the contraction of pneumonia is one of the things particularly liable to occur. Damage to the kidneys and circulation, such as comes from high living or overwork, predisposes to fatal pneumonia. The writer declares that clinically it does not seem to him that the infectiousness of pneumonia is very marked. It has not at all been proved, he thinks, that a particular germ is the cause of pneumonia. The prognosis depends to a great extent on the previous life history of the patient, as well as on the cause of pneumonia. Pneumonias that occur as terminal conditions are necessarily extremely fatal. The prognosis in a case of mild pneumonia affecting one lobe in a previously healthy and robust person is very good indeed. The prognosis of those patients who are in a class between these extremes is doubtful. Blood examination is a matter of much importance in prognosis.

New York Medical Journal.

May 26.

8 *Bacteriologic Types of Acute Conjunctivitis. (To be continued.) A. Duane and T. W. Hastings, New York.
9 Observations on Fibromyomatous Tumors of the Uterus. J. O. Polak, Brooklyn, N. Y.
10 *Liability of Healthy Individuals Contracting Tuberculosis in Visiting Resorts Frequented by Tuberculosis Patients. J. H. Way, Waynesville, N. C.
11 Tuberculosis of the Kidney. H. H. Morton, Brooklyn.
12 Operative Treatment of Fractures of the Patella. J. H. Gibbon, Philadelphia.
13 Dyspepsia Nervosa. M. Gross, New York.
14 Case of Widespread Intracerebral Sinus Thrombosis. J. E. Talley, Philadelphia.
15 Anterior Metatarsalgia and Its Treatment. S. Epstein, New York.
16 Bilateral Empyema in Children. H. Heiman, New York

8. **Bacteriology of Conjunctivitis.** Duane and Hastings report on the findings in 132 unselected cases of conjunctivitis. The following tentative conclusions are drawn, pending a further investigation:

1. There is no special type of conjunctivitis associated with any special germ. The clinical picture, therefore, affords no clue to the germ causing the conjunctivitis.

2. While certain organisms, like the gonococcus, diphtheria bacillus, and streptococcus, usually cause severe reaction, and the other germs regularly produce much slighter effects, this rule has many exceptions, and no sure deductions can be drawn from the intensity of the inflammation as to the germ causing it.

3. Membranous conjunctivitis, as is well known, may be caused by a variety of organisms. It does not necessarily indicate a severe inflammation, nor one that will always produce other evidences of excessive reaction besides the false membrane.

4. In trachoma, particularly trachoma in the stage of acute exacerbation, a variety of organisms may be present. These do not, of course, cause the trachoma, but they are of importance in that they do produce an intercurrent acute conjunctivitis with secretion, which latter serves as a carrier of contagion and thus disseminates not only the conjunctivitis, but the trachoma as well.

5. The *Staphylococcus albus* and particularly the *Staphylococcus aureus* when occurring in the conjunctival sac are sometimes at least pathogenic, and distinctly predispose to the production of corneal lesions. The fact that the *Staphylococcus albus* is probably an almost constant inhabitant of the conjunctival sac, does not invalidate this conclusion.

6. Very mixed infections seem, if anything, to be rather less severe than those in which one germ is the predominant infecting agent.

10. **Liability of Contracting Tuberculosis in Sanatoria.** After a careful investigation of the danger of visiting places frequented by tuberculous patients, Way has come to the conclusion that non-tuberculous individuals necessarily incur no danger of infection with tuberculosis in visiting or residing at modern health resorts frequented by patients with pulmonary tuberculosis. There is less danger of contracting pulmonary

tuberculosis in a well-regulated modern health resort than elsewhere. Health resorts for tuberculosis are almost invariably places where it has been originally noted that the average of deaths from tuberculosis among the natives was remarkably small. The climatic and other local conditions which originally permitted so small a development of tuberculosis among the natives continues to render them relatively (not absolutely) immune, and as well to beneficially impress the visitors to such resort. Considered in the light of most recent scientific knowledge, it is doubtful if the infective dangers of street expectoration are so great as we have previously believed. The average greater degree of sanitary knowledge and practice prevailing to an extent among all classes at a modern health resort is also highly conducive to the physical improvement and gain shown by the immense majority of visitors to our mountain resorts. The most careful attention to sputum indoors, thorough ventilation, and open air life so much in vogue at the modern health resort for tuberculosis render them safer and should be continued.

Lancet-Clinic, Cincinnati, Ohio.

May 26.

17 *Trigeminal Neuralgia—Surgical Treatment. B. M. Ricketts, Cincinnati.
18 Observations Based on Five Hundred Operations for Appendicitis. T. B. Eastman, Indianapolis, Ind.

17. **Trigeminal Neuralgia.**—Ricketts' paper is an historical résumé of the surgical treatment of this affection.

Bulletin of the Lying-in Hospital of the City of New York.

March.

19 Two Cases of Spina Bifida with Operation. J. W. Markoe, New York.
20 A New Cervical Dilator. R. W. Lobenstine, New York.
21 Case of Hematoma of Vulva Following Normal Delivery. A. B. Davis, New York.
22 *Unusual Case of Hemorrhage in Eclampsia. J. E. Welch, New York.
23 *Maternal Mortality in 32,000 Tenement-House Confinements. J. A. Harrar, New York.
24 Case of Pernicious Vomiting in Pregnancy. J. W. Markoe, New York.
25 Case of Benign Goiter Complicating Pregnancy. W. A. Morgan, New York.

22. **Unusual Hemorrhage in Eclampsia.**—Welch reports the findings in a case diagnosed clinically as eclampsia which exhibited hemorrhagic lesions in the skin and serous membranes, congestion of all the meninges, distension of all the ventricles by fluid blood, a large clot in the left corpus striatum which projected into the left lateral ventricle causing extensive laceration in the substance of the left frontal, parietal and occipital regions. The patient died four hours after admission to the hospital. The autopsy report is published in full.

23. **Maternal Mortality in 32,000 Confinements.**—In the series of cases reported by Harrar the maternal mortality was 0.357 per cent., or about 1 death in every 280 deliveries. The chief causes of death were sepsis, rupture of the uterus, eclampsia and placenta prævia, in the order named. Twenty-seven women, or about 1 in 1,200, succumbed to septic infection. The next most frequent cause of death after sepsis was rupture of the uterus, 15 women having died as the result of this accident. In 5 of these cases rupture occurred as the result of an internal version; in one woman, in whom the cervix had been amputated a year previously, it was produced during a forceps delivery; and in 2 others it was traced to severe falls sustained several days before delivery. Thirteen deaths are accredited to eclampsia, and it may also be noted in passing that this complication occurred 50 times in the series of cases here reported, with a mortality of 26 per cent. Placenta prævia ranks fourth on the list as a mortality factor, there having been 12 deaths from this condition. The 4 cases alluded to account for 67 of the total of 114 deaths from all causes. Lobar pneumonia was fatal in 6 cases, postpartum hemorrhage in 5, premature detachment of the placenta in 4, chronic endocarditis in 4, and phthisis in 4. Four deaths are ascribed to shock and 4 to uremia. Three women died after Cesarean section had been performed. Other causes of death were pulmonary edema, which claimed 3 patients, and embolism and thrombosis, which was fatal in 3 cases. Toxic albuminuria and puerperal toxemia account for 2 deaths. One death was due to chloroform and one each to carcinoma and erysipelas.

Washington Medical Annals, Washington, D. C.

May.

26 Review of the Present-day Therapy of Pulmonary Tuberculosis. B. M. Randolph, Washington, D. C.
27 Case of Septic Endocarditis. S. Ruffin, Washington, D. C.
28 Some Eye Cases. R. S. Lamb, Washington, D. C.
29 Surgical Treatment of Complications and Sequels of Pneumonia. W. P. Carr, Washington, D. C.
30 Prostatic Neuroses. E. F. King, Washington, D. C.
31 *Cystinuria with Formation of Calculi. H. A. Fowler, Washington, D. C.
32 Case of Adenocarcinoma of Lachrymal Gland. E. O. Belt, Washington, D. C.

31. **Cystinuria.**—The patient in the case reported by Fowler was a male, aged 67, whose family and personal history were absolutely negative, except for an attack of malaria and one of typhoid, about 30 years previously. His present trouble began about a year ago, when he first noticed a slight increase in the frequency of urination, associated with precipitency. Six months later he began to have sharp pains at the end of micturition. Cystoscopic examination revealed a single large oval calculus with a coarsely granular surface lying on the right side of the trigone. This calculus was removed by a perineal prostatectomy, and a smaller one was passed spontaneously later. Chemical examination showed the calculi to be composed of pure cystin.

University of Pennsylvania Medical Bulletin, Philadelphia.

April-May.

33 Focal Diagnosis of Operable Tumors of the Cerebrum. C. K. Mills, Philadelphia.
34 Ocular Symptoms of Tumor of the Cerebrum. G. E. deSchweinitz, Philadelphia.
35 Surgical Aspects of Operable Tumors of the Cerebrum. C. H. Frazier, Philadelphia.
36 *Study of the Blood in Lead Poisoning, with Description of Bone-marrow of one Fatal Case. W. B. Cadwalader, Philadelphia.

36. **Blood in Lead Poisoning.**—Cadwalader made total and differential blood counts in 37 cases of lead poisoning, all the patients presenting typical symptoms and a clear history of having worked in lead for periods of from a few weeks to many months. The hemoglobin and the erythrocytes were reduced to about one-fourth of the normal in most cases, giving an average of about 65 per cent. hemoglobin and 3,850,000 red cells per 1 cm. In every instance there was a marked increase in the number of granular red blood corpuscles. Macrocytes and microcytes were occasionally met with, but poikilocytosis was, as a rule, not marked. One or more normoblasts were found in all but four cases, and megaloblasts in two instances, while in one case 130 normoblasts and 13 megaloblasts were found, while counting 500 white cells, notwithstanding the fact that the total number of erythrocytes was scarcely one-fourth less than the normal. After convalescence was established the nucleated red cells disappeared from the circulating blood before the granular erythrocytes, which slowly decreased in numbers. The total number of red cells very gradually approached the normal. In one case, in which the blood was studied during some length of time, the red cells had only increased 40,000 in four weeks after all symptoms had disappeared, while granular erythrocytes were still easily demonstrated. It would seem as if the intense pallor so characteristic of this condition could not be wholly dependent on so slight an anemia, and may possibly be caused in part by a contraction of the peripheral capillaries, as has been suggested. The leucocytes showed no morphologic changes. The greatest number per 1 cm. was found to be 12,550, while the lowest was 4,700, giving an average of 7,568.

New York State Journal of Medicine.

May.

37 Features and Results of the Treatment and Prevention of Diphtheria by the Use of Antitoxin. H. D. Pease, Albany, N. Y.
38 Somatic Evidences of Syphilis in Paretics. J. M. Winfield, Brooklyn, N. Y.
39 Treatment of Hyperemesis Gravidarum. W. S. Stone, New York.
40 Nosologic Status of Paranoia. W. A. White, Washington, D. C.
41 Simultaneous Extrauterine and Intrauterine Gestation. J. E. W. Whitbeck, Rochester, N. Y.
42 *Detection of Occult Blood in the Feces; a Modification of Boas Test. A. L. Benedict, Buffalo, N. Y.
43 Venereal Diseases in the Navy and Their Prophylaxis. G. E. H. Harmon, Brooklyn, N. Y.

44 Venereal Diseases in the Army and Their Prophylaxis. V. Havard, U. S. A.
45 Medical Teaching of To-day and the Private Quiz. R. C. Newton, Montclair, N. J.
46 History of the Medical Society of the State of New York. (Continued). J. J. Walsh, New York.

42. **Detection of Occult Blood in Feces.**—Benedict employs the following modification of the Boas test. Any convenient quantity of feces is used, say 2 to 5 c.c. of liquid feces, or of more or less solid feces reduced to a diarrheal consistency with water. (Distilled water is not a necessity.) For every 5 parts of liquid feces about one part each of fresh tincture of guaiac and old oil of turpentine is used, and from one to five parts of gasoline. On shaking the blue tint of the positive reaction—or it may be a greenish blue—is communicated to the gasoline. Fats do not interfere with the test, so that no preliminary extraction is necessary. It seems to make no difference in what order the ingredients are added. Ordinarily, to conceal the fecal odor, gasoline is added immediately to the feces, then the guaiac, and finally, the oil of turpentine are poured in and the whole is shaken. The test may be performed perfectly well in an ordinary bottle, even at the house of the patient. Unless several suspicious cases are under observation, the tincture of guaiac is best made fresh, by adding alcohol or wood alcohol to a few whittlings of gum guaiac, so as to produce a yellow solution.

Interstate Medical Journal, St. Louis, Mo.
May.

47 Two Cases Illustrating the Combination of Organic with Hysterical Disease of the Nervous System. S. I. Schwab, St. Louis.
48 Pseudo-Scorbutic Type of Acute Lymphatic Leukemia. J. S. Myer, St. Louis.
49 *Remarks on a Chorionepithelioma in a Male. C. Fisch, St. Louis.
50 Case of Anorexia Nervosa in an Infant. A. Friedlander, Cincinnati.
51 *Abnormal Retention of Dead Ovum. H. Ehrenfest, St. Louis.
52 Submucous Resection of the Nasal Septum for the Correction of its Deformities. W. E. Sauer, St. Louis.
53 *An Aid to the Treatment of Epididymitis. H. McC. Johnson, St. Louis.
54 Abscess of the Liver—Successful Cases in Point. W. Bartlett, St. Louis.

49. **Chorionepithelioma in a Male.** Fisch reports the twenty-first case of this kind recorded in the literature. The patient, a male, 26 years old, applied for relief of an enlarged right testicle that had begun to grow for a period of about 6 months. There was no pain connected with the enlargement, only mechanical inconvenience. The testicle was removed and a microscopic examination showed a typical chorionepithelioma. The patient died about five weeks after the operation, and the autopsy disclosed extensive metastases of the tumor in the lungs, kidney, subperitoneal, bronchial and tracheal glands, one tumor under the scalp of the forehead, and a large metastasis in the white substance of the left posterior frontal lobe, encroaching on the gray matter of the posterior or third frontal convolution. A small tumor was found in the neighborhood of the opening of the carotid canal on the right petrosum. Symptoms of brain tumor were present shortly before the death of the patient.

51. **Abnormal Retention of Dead Ovum.**—In the first case reported by Ehrenfest the dead fetus was retained for about six weeks. In the second case it was retained for about six months.

53 **Treatment of Epididymitis.**—Johnson describes a method which he has employed extensively and with most gratifying results. The parts should first be shaved. With the patient lying on the back one end of a strap of zinc oxid adhesive plaster, two and a half to three inches wide, is applied to the lower abdomen, from one and one half to two inches from the median line. The strap, face upward, is taken around and under the scrotum, elevating the testicles to a level at least as high as the peno pubic angle, and forming, as it were a sling. The other end of the plaster passes up on the opposite side of the median line of the abdomen. A second strap is applied in the same manner as the first, overlapping the latter at its median border by about one inch. The straps are now neatly adjusted about the scrotum. A few short straps are gently passed crosswise over the anterior portion of the scrotum, just below the peno-scrotal angle, completely to cover in the testicles and to enclose them by the plaster, and one crosswise above the penis to aid in holding the longitudinal straps in place. It is intended to make no pressure whatever, and care should be taken that none is made. Both testicles are included in the bandage whether both or one are inflamed. The bandage may be applied at any stage of the attack, but it is especially applicable in the beginning often cutting short the swelling. If the testicle should swell after this dressing is put on—which, thus far, has not happened in the author's cases—there is ample room toward the penis and perineum to allow of swelling without undue pressure, thus relieving any fear of strangulation. The testicle is thus put in a splint, so to speak, and at the same time the plaster retains the heat and moisture. Patients who come with an epididymis much swollen, saying that they can scarcely walk for the pain, after the application of the bandage, express themselves as much more comfortable. They go about in comfort, attending to their ordinary duties, provided the occupation is not one calling for unusual exercise. The swelling subsides rather rapidly so that within a week or ten days the plaster may be removed and suspensory bandage worn instead.

Surgery, Gynecology and Obstetrics, Chicago.
April.

55 Ureteral Calculus. J. B. Deaver, Philadelphia.
56 *Interstitial Hernia. A. E. Halstead, Chicago.
57 Non-Lithogenous Obstruction of Biliary Ducts. A. H. Cordier, Kansas City, Mo.
58 *Treatment of Varicose Veins. C. H. Mayo, Rochester, Minn.
59 Fortieulin. W. W. Richardson, Los Angeles.
60 Four Cases of Hydramnion. C. B. Reed, Chicago.
61 Treatment of Uterine Retrodisplacements. E. H. Grandin, New York.
62 *An Operation for the Cure of Chronic Dilatation of the Stomach. H. J. Donaldson, Williamsport, Pa.
63 *Early Operative Treatment of Osteomyelitis in the Femoral Head and Neck (Hip-Joint Disease). T. W. Huntington, San Francisco.
64 *Arterial Anastomosis by Invagination. E. J. Brougham, Chicago.
65 Methods of Suture in Hernia Operations. M. L. Harris, Chicago.
66 Technic of Median Perineal Prostatectomy. A. H. Ferguson, Chicago.
67 Technic of Vaginal Section. H. T. Byford.
68 Opening and Closure of the Abdominal Wall by the Lower Mesial Incision. J. C. Webster, Chicago.
69 Japanese Navy and Army Sanitation. B. K. Takaki, I. J. N.

56. **Interstitial Hernia.**—Halstead reports one case of strangulated inguino-properitoneal hernia in which reduction was accomplished *en masse*, followed by herniotomy. The second case was one of inguino-interstitial hernia (left-sided) in which a herniotomy was done. Both patients recovered. Halstead urges that operative treatment be instituted in all cases of interstitial hernia, including the properitoneal type, because the wearing of a truss can do nothing but harm.

58. See abstract in The Journal, Jan. 13, 1906, p. 146.

62. **Chronic Dilatation of Stomach.**—In the case cited, Donaldson performed, with slight modifications, the operation which is known as Weir's modification of Bircher's operation. The surfaces were brought together with Lembert sutures, the opposing surfaces scarified, and the sutures tied and reinforced by a continuous gut suture. Lastly, in the bottom of the first fold which forms the largest dead space a continuous gut suture was introduced, bringing the surfaces together and making a submucous stitch after the first row was tied. By means of the first row of sutures Donaldson enfolded three inches of stomach wall, and by the second row two inches, bringing the two curvatures within about four inches of each other. After two years the stomach apparently is normal in capacity, there has been no return of the gastric symptoms, and the patient is well.

Donaldson emphasizes the following points on which he believes the success of the operation depends: The catgut suture, obliterating the large fold and dead space and pulling up the fold, flattens it out against the surface of the stomach, preventing it from hanging down into the cavity of the stomach, making, by its firmer and broader contact with the opposing serous surfaces, that giving increased nutrition, less danger of ulcer formation. By two rows of Lembert sutures, reinforced by continuous suture, there is absolutely no danger of any gaping of the wound, even if one or more sutures prove defective. The careful scarification between the sutures insures excellent and immediate union. The multiplicity of

sutures gives so much strength and firmness that fluids can be given in twelve hours after the operation without fear of injuring the wound.

63. Operative Treatment of Osteomyelitis.—The operation referred to by Huntington is one which has been described by him before. A trephine opening about one-half inch in diameter is made on the outer aspect of the thigh, at the lower border of the great trochanter. Through this opening, with a small bone curette, the neck of the femur is tunneled to a depth of from two to two and a half inches. At this depth the epiphyseal cartilage connecting the head and neck will be encountered. If there be any evidence of the focal lesion external to the epiphyseal cartilage, further efforts may be suspended. It is extremely desirable not to interfere with this cartilage, if possible to avoid it, for the reason that such interference will materially affect future development. If it be necessary to enter the head of the bone, either at the time of the initial undertaking or at a later period, this should be accomplished by a small instrument, thereby establishing a channel of communication between the head and neck through which, as a line of resistance, a liquefied focus may find exit.

64. Arterial Anastomosis by Invagination.—Brougham reports the case of a boy who received a penetrating wound of the axillary artery, almost severing this vessel, and of the axillary vein. After freeing the ends of the artery from the sheath for about half an inch, the proximal end of the artery was invaginated into the distal end by means of three fine silk sutures. Five additional sutures taken in the overlapping edge of the distal part sufficed to bind it securely to the external surface of the proximal end. The sheath was adjusted over the invagination for double security. The operation wound was packed with iodoform gauze and the entire arm enveloped in cotton. Late in the evening the radial pulse returned. The patient made an uninterrupted recovery. At no time was there edema of the arm or any evident disturbance of the circulation. The axillary vein was ligated.

American Medicine, Philadelphia, Pa.

April.

70 *Action of Quinin on the Tertian, Quartan and Aestivo-Autumnal Malarial Plasmodia. (To be concluded.) C. F. Craig, Manila, P. I.
71 Tuberculosis of Bursæ and Tendon Sheaths. J. C. Stewart, Minneapolis.
72 Contamination of Milk at the Dairy. A. H. Stewart, Philadelphia.
73 *End Results in Appendicitis Work. E. A. Balloch, Washington, D. C.
74 Timidity. (To be concluded). M. K. Isham, Cincinnati, Ohio.
75 Results of the Radium Treatment of Cancer. C. MacFarlane, Philadelphia.
76 *Staining of Spirochæta Pallida (Treponema Pallidum) in the Tissues of a Case of Congenital Syphilis. O. T. Schultz, Cleveland.
77 Resuscitation by Means of Direct Massage of Heart in Syncope After Chloroform Anesthesia and Other Cases of Sudden Death. F. Woodbury, Philadelphia.
78 Hysteric Hemiplegia. A. Gordon, Philadelphia.

70. Action of Quinin on Malarial Plasmodia.—The study undertaken by Craig for the purpose of determining the actual effect of quinin on the various forms of the malarial plasmodia, and the best time for the administration of the drug, show that quinin acts on every stage in the growth of all the varieties of the plasmodia, but that its action is most marked on the free spores and on the young intracorpuscular forms, in the latter often not preventing entirely the development but producing very marked developmental changes. In tertian malaria quinin is effective on all but the segmental bodies, and therefore exercises its curative action whenever given, whether in one large dose just prior to segmentation, or in undivided doses. The effect of quinin on the quartam plasmodium is practically the same as its effects on the tertian in all stages of its development, hence the effect of the drug is most apparent when it is administered in divided doses given at regular intervals, thus keeping the blood full of quinin all the time. Craig's observations on the estivo-autumnal parasite have not yet been completed.

73. End Results in Appendicitis Work.—Balloch believes: (1) The appendix is a rudimentary organ, a part of the cecum, undergoing obliteration, and so far has not been shown to be in any way a necessary part of the human economy. (2) Reasoning from the results of operation in cases of chronic and quiescent appendicitis, the removal of the appendix in the course of operations for other conditions is justifiable. (3) The difficulty of determining from microscopic examination whether an appendix is diseased or not, is an argument in favor of the removal of the organ. (4) The fact that deaths have occurred that might have been avoided had the appendix been removed at the first operation is an unanswerable argument in favor of the practice advocated in this communication, viz., that the appendix should be removed as a routine measure in abdominal work, provided always, that its removal will not prejudice the chances of the patient for a smooth recovery.

76. Spirochaeta Pallida.—Schultz reports a case of hereditary syphilis in which this organism was found in sections from the various organs. The case from which the material was derived was a female infant which died on the fourth day after birth of acute lobar pneumonia. The mother gave an indefinite, but probable, history of syphilitic affection contracted after the beginning of her pregnancy.

American Medicine, Philadelphia, Pa.

May.

80 Action of Quinin on the Tertian, Quartan, and Aestivo-Autumnal Malarial Plasmodia. (Concluded). C. F. Craig, Manila, P. I.
81 Tent Sanatorium for Consumptives. W. Hutchinson, Redlands, Cal.
82 Resection of the Infraorbital and Supraorbital Nerves for Eyestrain. G. M. Gould, Philadelphia.
83 Maggots in Renal Calculus; Cystic Kidney with Obliterated Ureter and Fibroid Uterus Causing Chronic Distention of Bladder with Retention of Urine. J. H. Gibbon, Philadelphia.
84 Nephrectomy Followed by Pregnancy and Labor. C. P. Noble, Philadelphia.
85 Timidity. (Concluded.) M. K. Isham, Cincinnati, Ohio.

Therapeutic Gazette, Detroit, Mich.

May 15.

86 Abduction Treatment of Fracture of the Neck of the Femur. R. Whitman, New York.
87 Fracture of Neck of Femur. D. Willard, Philadelphia.
88 Diagnosis and Non-surgical Treatment of Fractures of the Neck of Femur. O. H. Allis, Philadelphia.
89 Treatment of Fracture of the Neck of the Femur. W. J. Taylor, Philadelphia.
90 *Calomel in the Treatment of Eclampsia. W. R. Wilson, Philadelphia.
91 Etiology and Treatment of Mastoiditis. S. M. Smith, Philadelphia.

90. Calomel in Eclampsia.—Wilson reports 6 cases of eclampsia in which the use of calomel was attended by good results, except in 1 case. In the first case 10 grains were given immediately after delivery. There were no further convulsions and the urine became normal in quantity in less than 48 hours after delivery. There was no salivation. In the second case, 20 grains of calomel were given in 2-grain doses, frequently repeated, with the same result as in the previous case. The third patient had her first convulsions during the third stage. There were 11 convulsions in all. The patient was given 15 grains of calomel within 30 hours. The fourth patient was given 20 grains of calomel after the first convulsion, which occurred during the third stage. There were no more convulsions, nor was there any need for the use of sedatives. The fifth patient had convulsions immediately after labor began. Following a podalic version and extraction she had two more convulsions, with increasing coma, and after an interval of three days another convulsion occurred. (No mention is made of the amount of calomel administered in this case.) The sixth patient, an alcoholic, was first seen in coma which followed three convulsions. Death occurred 30 hours after delivery from pulmonary edema. Thirty-five grains of calomel had been given in doses of 5 and 10 grains.

Wilson urges that calomel should be energetically administered both in the pre-eclamptic stage and in the stage of convulsions. An initial dose of 10 grains, followed in 46 hours by an equal dose, is indicated in the first instance. In the convulsive stage an initial dose of 20 grains, followed by half this amount in the intervals between convulsions, as the opportunity arises, or in accordance with the ability of the patient to swallow, is indicated. If the patient is somnolent or if the convulsions follow each other in quick succession, the maximum dose, 25 grains, should be administered at the first opportunity. In cases in which a pre existing kidney lesion is present smaller doses may be given frequently—two grains every six hours.

Texas Medical News, Austin.

April.

92 Two Fatal Cases of Anthrax. H. A. Barr, Beaumont.
93 Counter Prescribing. D. Monroe.
94 Continued Malarial Fevers. A. S. Garrett, Springtown, Texas.
95 Trachelorrhaphy. E. Lanphear, St. Louis, Mo.

Bulletin of the American Academy of Medicine, Easton, Pa.

April.

96 Report of Committee to Tabulate the Academic Value of the First Degree. W. S. Hall, D. C. Hawley, W. J. Barlow, C. H. Van Pelt, and C. McIntire.
97 Report of Committee on the Teaching of Hygiene in Public Schools. (Continued).

The Philippine Journal of Science, Manila, P. I.

April.

98 Principal Insects Attacking Coconut Palm (Part II). C. S. Banks, Manila.
100 Studies on Experimental Variola and Vaccinia in Quadromana. W. R. Brinckerhoff and E. E. Tyzzer, Boston.

The Laryngoscope, St. Louis, Mo.

April.

101 *Submucous Resection of the Septum. W. L. Ballenger, Chicago.
102 Technic of Submucous Resection of the Septum. S. Yankauer, New York.
103 Submucous Resection of the Nasal Septum with Ballenger's Swivel Knife. J. F. McCaw, Watertown, N. Y.

101. See abstract in THE JOURNAL, Oct. 7, 1905, p. 1112.

Iowa Medical Journal, Des Moines.

May 15.

104 Thrombosis of Right Middle Cerebral Artery with Symptoms and Autopsy. H. J. H. Hoeve, Des Moines.
105 Medical Progress. E. Hornbrook, Cherokee.
106 One Week's Work with Hyoscin-Morphin Anesthesia. E. Lanphear, St. Louis.

Mississippi Medical Monthly, Vicksburg.

May.

107 President's Address to the Mississippi State Medical Association, April 17, 1906. E. H. Martin, Clarksdale.
108 Fevers Seen in the Delta. E. A. Cheek, Arcola.
109 Case of Erysipelas. L. B. Sparkman, Cleveland.

Virginia Medical Semi-Monthly, Richmond.

May 11.

110 Rheumatism—Acute and Chronic, Rheumatoid Arthritis and Rheumatic Arthritis. J. C. Walton, Chase City.
111 Alkaloidal Medication. W. F. Waugh, Chicago.
112 A Case of Obstetrics. C. S. Webb, Bowling Green.
113 Acute Lymphatic Leukemia. H. S. Holloway, Jacksonville, Fla.
114 Value of Medical Examinations. R. D. Garcin, Richmond.
115 Clinical Cystoscopy. D. L. Hirschler, Norfolk.
116 Traumatic Sciatica. J. V. Shoemaker, Philadelphia.
117 Prophylaxis and Care of the Puerperal Breast. W. A. Plecker, Hampton, Va.
118 Extemporaneous Asepsis. W. A. Gills, Richmond.

Northwest Medicine, Seattle, Wash.

May.

119 Intramuscular Injections in Treatment of Syphilis and Use of the Sozolodolate of Mercury. (To be concluded). A. Garcean, San Francisco.
120 Chronic Gastric Ulcer, Frequency, Pathology and Diagnosis. A. A. Matthews, Spokane.
121 Delayed Transportation of Stomach Contents, Symptoms and Differentiation of Causes. E. M. Rhinger, Seattle.

Medical Age, Detroit, Mich.

May 10.

122 Paresis. C. P. Bancroft, Concord, N. H.
123 Evils of Cocain. Q. W. Hunter, Louisville, Ky.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

May 15.

124 Compound Fractures. E. A. Hensel, Alexandria.
125 Septic Endocarditis. H. L. Staples and W. M. Chowning, Minneapolis.
126 Carbolic Acid in Modern Surgery. J. C. Stewart, Minneapolis.
127 Technic of Extirpation of Faucial Tonsil. F. C. Todd, Minneapolis.

Detroit Medical Journal.

May.

128 Dermatologic Malingering. H. R. Varney, Detroit.
129 Therapeutics of Acute Nephritis. C. G. Jennings, Detroit.
130 Etiology of Peritonitis. P. S. Root, Monroe.
131 The Morning Drop; Its Significance and Treatment. W. A. Hackett, Detroit.
132 Cerebral Abscess. H. C. Wyman, Detroit.
133 Anesthesia for Brief Surgical Procedures. C. S. Oakman, Detroit.

Texas State Journal of Medicine, Fort Worth.

May.

134 Necessity for Better Reciprocal Relations Between the Medical Profession and the Public. J. E. Gilcreest, Gainesville, Texas.
135 Individual Scholarship. M. L. Moody, Greenville.

The Medical Standard, Chicago.

May.

136 Notes from Nothnagel's Clinics. G. B. Hassin, Chicago.
137 Hepato-Ptosia, Coloptosis and Enteroptosis in Splanchnoptosia. B. Robinson, Chicago.
138 Syphilis. V. V. Hunt, Blackwell, O. T.
139 Practical X-Ray Therapy. (To be continued). N. M. Eberhart, Chicago.

Denver Medical Times.

May.

140 Treatment of Fatty Heart. H. W. McLauthlin, Denver.
141 Id. E. Stuver, Ft. Collins.
142 Fatty Degeneration of the Heart. W. J. Rothwell, Denver.
143 Treatment of Fatty Degeneration of the Heart. A. S. Taussig, Denver.
144 Treatment of Fatty Heart. F. P. Gengenbach, Denver.
145 Osteoplastic Operation on the Lower Jaw. E. J. A. Rogers, Denver.
146 A Few Remarks on Pneumonia. G. F. Butler, Chicago.
147 Ocular Symptoms in General Diseases. E. W. Stevens, Denver.
148 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

May 12.

1 Autointoxication; Its Relation to Certain Cardiovascular Disorders. H. B. Shaw.
2 Eucalyptus Poisoning. J. Orr.
3 Importance of Anesthesia by Lumbar Injection in Operations for Acute Abdominal Diseases. H. P. Dean.
4 *Spirochæta Pallida and Its Variations. A. Maclennan.
5 *A Fatal Case of Acute Cardiac Beriberi. H. Wright.
6 Dionin in Ophthalmic Practice. J. Hinshelwood.
7 Local Anesthetic Action of Stovain. D. McKenzie.

4. **Spirochaeta Pallida.**—Maclennan is of the opinion that the name *Spirochæta pallida* denotes only one stage in the history of an organism, while *Cytorrhyctes luis* probably denotes another, so that another name will be required for the protozoan found with, or as the cause of, syphilis. He suggests that it is also possible—if not, indeed, probable—that there is more than one organism responsible for the series of symptoms included in syphilis. It is a striking fact, he says, that the symptoms of syphilis during the roseolar stage are so slight, yet the blood and tissues are more or less contaminated by hordes of micro-organisms. Such symptoms as are present are not likely, therefore, to be due to a toxin elaborated by these germs, but to the germs themselves.

5. **Acute Cardiac Beriberi.**—A postmortem examination was held on the case reported by Wright, and careful culture experiments were conducted. A very suspicious bacillus was found, similar to one recovered from the stools in other cases of acute beriberi. A full report of these findings is given. All the media inoculated from the contents and scrapings of the stomach and duodenum showed growth by the end of twenty-four hours. Plates were made from all surface colonies, but no organism was seen which corresponded with that found in the mucosa of the stomach and duodenum. In the glucose-agar stabs there was found, in almost pure culture, a bacillus which corresponded morphologically and in staining reaction with that found in the gastric and duodenal mucosa. At twenty-four hours the bacillus ranged from 4 to 8 or 9 microns in length, and was 1.05 microns in breadth. The ends were almost square and the sides regular, but slightly curved. Older cultures were longer, stouter, and tended to become clubbed. The patient died in the seventh week of the disease from cardiac failure. The train of events during life were an acute onset with complaint of gastrointestinal symptoms, followed or accompanied by other symptoms that marked the effect of the beriberi virus on the cardiac and vasomotor nervous systems.

The Lancet, London.

May 12.

8 Autointoxication; Its Relation to Certain Disturbances of Blood Pressure. H. B. Shaw.
9 *Case of Primary Intestinal Anthrax in Man; Septicemia; Hemorrhagic Leptomeningitis. J. H. Teacher.
10 Technic of Colon Irrigation in a Case of Appendicostomy for Colitis. W. Ewart.
11 Two Unusual Cases of Difficult Labor. H. T. Hicks.
12 *Invisible Surgery. J. L. A. Aymard.
13 Bronchopneumonia and Pyemia. I. McKenzie.

9. **Primary Intestinal Anthrax.** Clinically the case reported by Teacher was one of an acute illness terminating fatally within twenty-four hours, the prominent features of which

were headache, cerebral irritation manifesting itself in restlessness, delirium, and finally convulsions. There was also slight abdominal tenderness which might have suggested peritonitis, but there was no pyrexia. The history afforded no hint as to the nature of the disease. At the postmortem examination the case presented the features of an acute septicemia and early peritonitis which appeared to spread from a hemorrhagic lesion of the small intestine with ulceration and necrosis internally and signs of an infective process extending up the mesentery. The nervous phenomena were explained by the discovery of a diffuse hemorrhagic condition of the pia-arachnoid, which microscopic examination demonstrated to be an early meningitis due to the anthrax itself. The identity of the organism was proved by cultivation and inoculation experiments. The intestinal lesion was clearly the oldest, and the conclusion appears warranted that the case was one of anthrax septicemia due to intestinal infection caused most probably by the ingestion of a quantity of anthrax bacilli or spores in the stools.

12. **Invisible Surgery.**—Aymard describes a skin incision for which he claims that a permanent visible scar is not left. His method consists in dividing the skin on the slant in contradistinction to the present method of dividing it at right angles to the surface. The scar is present, but is hidden away. The knife should make one clean sweep down to the fascia, which in turn should be divided as far under the face of the upper flap as possible, and on no account should the lower flap be dissected off this fascia. The upper flap is enclosed in a warm, dry, sterile link and secured far back with tissue forceps. The lower flap being retracted, the fascia is treated in a similar manner and the operation for which the incision is made is proceeded with in the usual way. Aymard seldom uses a suture, but when he does he passes a lance-shaped, slightly curved needle threaded with horsehair through the skin on a slant at a little distance from one extremity of the wound; it then passes through the base of the upper and the apex of the lower flap continuously, its point of exit being through the skin on the slant at the other extremity of the wound. The suture is not tied and is removed at the end of forty-eight hours.

The object is to stretch the delicate apex of the upper flap, and the best plan is to press this edge gently between the finger and thumb, the lower flap at the same time being stretched and placed in position with suitable forceps. The accuracy of the apposition should be tested with a magnifying glass. The subsequent object of dressing is to keep this edge, together with the rest of the flap, in accurate flat apposition, remembering that undue pressure may cause damage. Sometimes he secures the wound by placing across it a few strips of china silk and collodion, at others by merely placing collodion on the curved or flat glass dressing. He prefers glass to celluloid or mica because it is rigid and prevents contraction of the flap.

Journal of Tropical Medicine, London.

May 1.

14 Tinea Imbricata in Brazil. U. Paranhos and C. P. Leme.
15 Mosquito Notes. G. M. Giles.

Glasgow Medical Journal.

May.

16 Laparotomy in Tuberculous Peritonitis. D. MaCartney.
17 Recent Cystoscopes, with Special Reference to Inspection of the Ureteral Orifices. J. H. Nicoll.
18 Mechanism, Diagnosis and Treatment of Persistent Occipito-Posterior Presentations. A. W. Russell.
19 *Three Cases of (So-called) Double Uterus. G. S. MacGregor.

19. **Double Uterus.**—Macgregor reports 3 cases of this kind seen by him and makes an analysis of 100 cases occurring in the literature. Of these 100 patients 30 were unmarried, while 70 were married women. Two out of the 30 unmarried women had had abortions. Of the 70 married women, 14 were non-parous, while 56 were parous; of these 56, 14 aborted and 44 went to full time. From these 44 women there were 96 children, while out of the labors of these there were 2 Cesarean sections, 2 hysterectomies, 4 forceps cases and 36 normal labors. In only 71 cases is there any reference to menstruation; 58 patients were regular, 8 were irregular, while 5 had amenorrhea and 13 dysmenorrhea. In 38 cases there is noted the size of each uterine horn; in 17 cases the left was the larger, the right was the larger in 13 cases, in 8 they were equal, while one was an infantile uterus didelphys. It is evident that the presence of such malformations does not materially lessen the chances of impregnation, except when the genital canal is completely occluded at some point, and that delivery usually occurs without any special danger or difficulty, except when the fetus is held in the rudimentary horn of a markedly double uterus. In such a case there is danger of rupture of the uterine wall; or there may be no dilatation of the imperfectly developed cervical canal; or, again, it may be a powerless labor from the lack of sufficient contractile force in the uterus itself.

Presse Médicale, Paris.

20 (XIV, No. 31.) Asphyxia from Illuminating Gas.—Fermez vos becs. A. Martinet.
21 Les diurétiques de la série xanthique. A. Martinet.
22 De la suture des nerfs. P. Reclus.
23 *De la sénilité. A. Létienne.
24 (No. 32.) *Quelques considérations sur l'aortite syphilitique. Dieulafoy.
25 Les paralysies de l'épaule à volonté et la loi sur les accidents de travail (voluntary paralysis of shoulder). E. Brissaud and F. Moutier.
26 *Camptodactylie. Stigmate organique précoce du neuro-arthritisme. L. Landouzy.
27 *Technique de la néphropexie. J. Albarran.
28 Les cancers primitifs de l'ampoule de Vater. M. Letulle.
29 La leucoplasie de la vulve, du vagin et de l'utérus. F. Jayle and X. Bender.

23. **The Senile Heart.**—Létienne remarks that the heart is the organ which is generally most affected by senility, but the symptoms suggesting its inferiority are usually masked by others which seem foreign to this organ. It may struggle along for years handicapped by the unsuspected senile changes, and succumb at last abruptly. The fulminating end is apparently very sudden, but the struggle has been going on for years. The most common signs of senile changes in the heart are shortness of breath and fatigue. There is no real pain, but merely a disinclination to make an effort. If the effort is made it is followed by rheumatoid pains in the muscles involved. Rest banishes the pains, but they return at the next effort and may become permanent in time. They may be accompanied by slight dizziness, unstable balance, possibly even ocular troubles or actual angor, which cease during rest but recur at the slightest fatigue. General nervous troubles may be observed, taking the form of indolence or disinclination for the accustomed brain work. The nervous system requires rest like the muscles and demands it imperiously by recurring periods of somnolence. On the other hand, sleep at night is interrupted by waking frequently, or there may be actual insomnia. Slight gastric disturbances may also be observed. None of these symptoms points to the heart, and the only sign of the underlying trouble is possibly slight swelling of the ankles at night or after a long walk, and the composition of the urine. All the constituents of the urine will be found notably reduced in amount, although generally retaining their proportional values.

24. **Syphilitic Aortitis.**—Dieulafoy relates 3 striking examples of syphilitic angina pectoris of extreme severity and persistence for years rapidly cured by daily injections of from 0.5 to 2 c.c. of mercury biniodid in an aqueous solution. He keeps up the injections for ten or twelve days at a time, with intervals of two weeks or a month. Mercurial inunctions had failed to relieve in one case and the patient was in a condition similar to the *état de mal* of epilepsy, the attacks being practically continuous. The biniodid seems to have a remarkably prompt and efficient action on the symptoms. One patient was so much improved that he is now—seven years later—working on a farm, no one in the district being able to compete with him in endurance, although the physical signs of aortic insufficiency still persist.

26. **Early Sign of Tendency to Nervous and "Rheumatic" Affections.**—Landouzy refers to an irreducible inward flexion of the ring and little fingers, generally of the right hand. It is impossible to straighten them out voluntarily. This little sign, he says, permits the physician to divine the past of his patient, to judge of his temperament, and to augur his future. It is a sign of "neuro-arthritism"—nutritional sluggishness—

and may be observed early in life or may develop later, especially after some infection. It reveals the kind of defensive reactions that may be anticipated in case of disease. It has led Landouzy in many instances to prophesy congestive or nervous troubles at puberty, and in case of incipient tuberculosis in such young people, to announce that the disease would probably assume more of a bronchitic form, with spasmodic asthma, or slight recurring hemoptyses or attacks of tachycardia. The course of the disease in such individuals is more inclined to be inflammatory.

27. Technic of Nephropexy.—Albarran gives an illustrated description of the technic with which he fastens the kidney to the lower rib and muscle wall.

Semaine Médicale, Paris.

30 (XXVI, No. 19.) Typhlite et perityphlite (without appendicitis). F. Lejars.

Beiträge z. klin. Chirurgie, von Bruns', Tübingen.

Last indexed, page 1147.

31 (XLVIII, No. 2.) Embryologic Study of Accessory Passages in Penis.—Ueber die Entwicklungsgeschichte einiger accessorischer Gänge am Penis. A. Lichtenberg.
32 *Zur Lehre vom Cardio-Spasmus. F. Brüning.
33 Die Dermoide des Samenstrangs (seminal cord). L. Wrede.
34 *Treatment of Acute Inflammations with Artificially Induced Hyperemia— Behandlung akuter Entzündungen mit Stauungshyperämie. H. Rubritius.
35 *Ueber Milz-Exstirpation wegen Milzverletzung (splenectomy for injury of spleen). W. Noetzel.
36 *Ueber die Operation der Leberverletzungen (injuries of liver). Id.
37 *Die Roentgen-Behandlung des Kropfes (of goiter). C. Pfeiffer.
38 Zur Pathologie des congenitalen, partiellen Riesenwuchses (giant growth). M. Hofmann.
39 Veraltete, komplete vorder-Arm-Luxation nach aussen geheilt durch Arthrotomie. O. Klauber.
40 Ueber die äusseren Fisteln bei angeborener Atresia ani s. recti und ueber die Darstellung des kongenital verschlossenen Rectums im Roentgen-Bilde. A. Läwen.
41 *Ueber die sogenannte akute Pancreatitis und die Ursachen des schweren, oft tödlichen Verlaufes derselben (cause of fatal course). G. Doberauer.

32. Spasmodic Contraction of the Cardia.—Brüning describes a case in detail, with the resulting disturbances and the benefit derived from operative treatment. The patient was a young man and as the disturbances from the dilated esophagus were serious, the cardia was stretched with Mikulicz forceps introduced through an opening into the stomach. It required some force to conquer the spasmodic contraction, but it was finally stretched to a diameter of 6 cm. A tube had been passed into the stomach through the mouth and out through the opening made in the stomach. The lower end of the tube was slit into halves for a short distance, and one of these halves was tied to each branch of the forceps. The forceps could then be drawn up into the cardia as the tube was drawn up through the mouth. The single stretching answered the purpose. In acute cardiospasm, painting the mucosa of the cardia with a 3 per cent. solution of cocain has proved effectual in some instances. In the chronic cases the cocain has given only transient benefit, not affecting the purely functional spasm. It is sometimes possible to cure an incipient tendency by changing the diet, restricting the patient to fluid foods for a time. No benefit has been derived to date from electricity. Feeding through the stomach sound has benefited many patients. In the case described this was kept up for two months, supplemented by rinsing out the esophagus and application of electricity. This improved the patient to such an extent that he felt comparatively free from disturbances for two years, but then they returned in a more serious form than before. The spasmodic contraction never returned after the cardia was finally stretched.

34. Treatment of Acute Inflammation with Passive Congestion. Rubritius reports the experience at Wölfler's clinic at Prague with Bier's method of passive congestion. Nearly 125 patients were thus treated and the results were highly satisfactory, in cases of suppuration in a tendon sheath, abscess, furuncle and especially so in mastitis. The final verdict is that Bier's method of "congestive hyperemia" is extremely useful in the treatment of acute suppurative processes, but is liable to do harm in case of existing general infection. In an experience with 3 cases of this kind and in 3 reported in the literature, existing general infection seemed to be aggravated by the passive congestion. Symptoms of general infection or the finding of bacteria in the blood should contraindicate this method of treatment. [The second edition of Bier's book, "Hyperemia as a Curative Agent," 1905, is already exhausted and a third edition is now being prepared. He states that

Figure 1.

from lack of space in the new edition he refrains from touching on the value of artificial hyperemia in the treatment of cutaneous affections, although his experiences in this line have been remarkably favorable. The various devices used to induce passive congestion at his clinic have recently been described and illustrated anew in the *Zeitft. f. aerztliche Fort-*

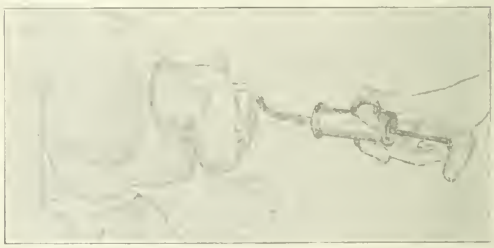


Figure 2.

bildung, Nos. 7 to 9. The article is by R. Klapp of his clinic, who reiterates that the constricting band should not cause any discomfort in itself, and that the sensations in the congested area should be merely those of congestion without any prickling or "going to sleep" in the part. The limb should feel warm, even warmer than the sound side. The skin should

Figure 3.

look bluish red, and the pulse should be distinctly felt. In case of acute inflammation the limb flushes up to the constricting band and generally swells considerably, while the pre existing pain gradually subsides. In case of a chronic affection, or with merely brief artificial hyperemia, the congested area does not swell much and it does not grow much if any

warmer. Bier has always advocated the use of simple, generally home-made devices, for application of superheated air, for the elastic constricting bands and for his suction cups. Figure 1 shows the constricting bands as applied to the arm, shoulder and neck. For the shoulder a rubber tube is sewed into a ring. Figure 2 shows the suction cup used for mastitis with a syringe pump or rubber bulb. Figure 3 shows the cup used for boils, abscesses, etc. At the Hamburg surgical clinic the constricting bands are applied on out-patients, without medical supervision. They are told to take them off at once if they begin to hurt.—ED.]

35. **Splenectomy for Injured Spleen.**—Noetzel reviews the history of 6 patients whose spleens were removed on account of injury of the organ. He did not notice any symptom specially characteristic of such injury, but signs of irritation of the peritoneum from effusion of blood demanded prompt intervention. He also found that severe pain at the point of injury invariably accompanied serious damage within. In one of the cases the early intraperitoneal hemorrhage stopped spontaneously, but commenced again the third day, requiring operative measures. He discusses the best technic for splenectomy judging by the outcome of his cases. It is the only means of arresting hemorrhage from the injured spleen. Suture and tamponing may arrest it for a time, but there is always great danger of recurrence of the hemorrhage, as occurred in some of his cases.

36. **Operative Treatment for Injuries of Liver.**—Noetzel here describes 8 cases of injury of the liver in which an operation was performed in less than four hours in all but one, in which the interval was ten hours. His experience shows the advantage of suturing the wound in the liver whenever it is at all possible. He sutures through a tampon to prevent bleeding later. He has recently examined 3 of the patients after an interval of from several months to two and a quarter years, and found them all entirely well and free from disturbances of any kind.

37. **Roentgen Treatment of Goiter.**—Pfeiffer describes the experiences with Roentgen treatment of goiter at von Bruns' clinic at Tübingen. The particulars of 51 cases are given and the histologic findings in 8, with the results of experimental research. The general conclusion is to the effect that Roentgen treatment of goiter is ineffectual as a rule and should not supplant the better tried methods.

41. **Cause of Death in Acute Pancreatitis.**—Doberauer analyzes the clinical histories of 6 cases of acute pancreatitis and summarizes his experiments on 35 dogs. The course of the clinical cases and the findings in the dogs indicate that the diseased pancreas generates toxins which are extremely injurious. He was able to cause the same symptoms in dogs as those observed in human acute pancreatitis by tying off the vessels in the pancreas and isolating it. The pancreas soon showed signs of fat necrosis, subserous hemorrhage and hemorrhagic effusion into the peritoneal cavity, and the animals rapidly succumbed. Injection of fragments of the diseased pancreas into healthy animals caused the same fatal syndrome in the latter. The diseased pancreas evidently undergoes an autodigestion with the generation of extremely toxic elements which are rapidly absorbed by the peritoneum irritated by the presence of the digestive juices. His experiences further suggest the possibility of rendering dogs immune to this toxin by injections of normal and then of small amounts of the diseased pancreas.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

42 (XXXII, No. 12.) Action of Preparations Containing Tubercle Bacilli on Tuberculous Organism.—Experimentelle Studien ueber die Wirkung von Tuberkelbacillen-Präparaten auf den tuberculös erkrankten Organismus. A. Wassermann and C. Bruck.
43 *Ueber traumatischen Morbus Brightii. C. Posner.
44 *Early Diagnosis and Treatment of Laryngeal Cancer.—Zur Frühdiagnose und Behandlung des Kehlkopfkrebses. B. Baginsky.
45 *Ueber prämenstruelle Temperatur-Steigerungen. G. Riebold. (Concluded.)
46 Die galvanokaustische Sonde für den Tränenkanal (lachrymal canal). M. Peschel.
47 Eine seltenere Erkrankung am Knie (rare knee affection). L. v. Lesser.
48 *Eine neue Harnprobe auf Santonin (test for santonin in urine). Neuhaus.
49 Der Wortzeichenschutz für Arzneimittel (trade mark name for medicines). L. Lewin.
50 Pathogenesis of Cancer. Ehrlich's Vortrag ueber Pathogenese des Krebses.
51 (No. 13.) Zur kriegschirurgischen Bedeutung der neuen deutschen Infanterie-Munition. Kranzfelder and Oertel.
52 *Zur Behandlung der Lungen Phthise mit künstlichen Pneumothorax (artificially induced). A. Schmidt.
53 *Transmission of Syphilis to Monkeys.—Versuche zur Uebertragung der Syphilis auf Affen, IV. Siebert, Schucht and A. Neisser.
54 *Experimentelle Untersuchungen ueber die Infektiosität des syphilitischen Blutes (blood). E. Hoffmann.
55 *Radium Treatment of Skin Affections.—Wirkungsweise und Anwendbarkeit der Radiumstrahlung und Radioaktivität auf die Haut mit besonderer Berücksichtigung des Lupus. P. Wichmann.
56 Zur Behandlung des Heufiebers (hay fever). M. Berliner.
57 Zur Lokal-Anästhesie in der Ohrenheilkunde (in otology). J. Hechinger.
58 Aspirator for Nose.—Ein neuer Nasensauger. C. Leuwer.

43. **Traumatic Bright's Disease.**—Posner discusses the questions suggested by the case described. A girl of 11 had scarlet fever, but was otherwise healthy until she reached her twenty-third year. She then fell from a horse car and immediately experienced violent pain in the right side which recurred repeatedly. A tumor became evident and was recognized as the displaced kidney. Two years passed without essential improvement from the supporting bandage ordered. Six months later, while the pains still continued, albuminuria was observed. It was of the cyclic type at first, but after another six months pains developed also on the left side, the albuminuria became constant and signs of chronic inflammation of both kidneys became apparent.

44. **Early Diagnosis and Treatment of Laryngeal Cancer.**—This article is a postgraduate lecture and outlines the present status of the subject. Total extirpation, Baginsky says, has become a less dangerous operation than it used to be, and the after-treatment has been much improved, but, even at the best, the mutilation is great. The physician must bend all his efforts to early diagnosis and exert his influence to have the growth removed in its incipiency.

45. **Premenstrual Increase of Temperature.**—Riebold calls attention to the fact that in many women, just before the menstrual discharge appears, the process of ripening of the follicle is accompanied by an increased activity in all the vital processes, so that at this time a violent storm sweeps over the organism. In healthy women there does not seem to be any special disposition to acquire disease during this period, although digestive disturbances are frequent. An already diseased organism is especially liable to contract new infections at this time. Any disease already present may become aggravated during the premenstrual period. There is frequently a rise in temperature at this time, generally due to absorption from some old infectious focus or to exacerbation of the underlying affection. This premenstrual fever is observed frequently but not exclusively in tuberculous women, and never in entirely healthy women. Franck has recently asserted that premenstrual fever is an indication that something is wrong somewhere in the organism. It may be necessary to take the rectal temperature in order to detect minimal premenstrual fever.

48. **Test for Santonin in Urine.**—Fehling's solution turns the urine dark green and, in larger amounts, dark purple, in case of the presence of santonin.

52. **Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis.**—Schmidt describes a combined trocar and cannula with which he has been injecting gases or fluids into the pleural cavity. He does not yet publish his therapeutic results, but merely describes his technic. He evidently thinks it promises well.

53. **Transmission of Syphilis to Monkeys.**—Neisser's experiments on monkeys have been frequently mentioned in these columns. In this fourth part of his official report he states that fresh syphilitic growths, even the tertiary, induce primary sores when inoculated into monkeys. It is immaterial whether these tertiary manifestations occur in an early or at a very late stage of the syphilitic infection. The inoculations are always positive so long as the growths are not destroyed by necrosis or suppuration. When there is specific gummatous degeneration of the tissues or suppuration then the inoculations are never successful. He warns that every tertiary man-

festation should be regarded as contagious even although the danger of infection is much less than in case of the primary and secondary manifestations. His findings also suggest the necessity for several thorough, intermittent courses of mercurial treatment for every syphilitic in the tertiary stage. The primary and secondary lesions are particularly dangerous, as they are located at the points which are most liable to come into close contact was other individuals. These points are, also, particularly liable to excoriation (lips, interior of the mouth, etc.). On account of the latter fact, the lesions are especially liable to be mistaken for harmless excoriations. The tertiary lesions from which the positive inoculations were made were always those with intact skin above them. Some were on patients who had acquired their syphilis from ten to fifteen years before. Neisser's examinations of children with inherited syphilis have convinced him that their bodies swarm with parasites which can pass by way of the blood into the organs. Inoculation with mucus from the nose of such a child produced a primary sore on a monkey in one case. Inoculation with the blood and tissues from various organs was also always positive. In 2 of the 3 cases described in detail the children were apparently healthy for several weeks before anything suspicious of syphilis developed. Nothing in the history of the parents suggested any suspicion of the disease. It may be possible to detect the syphilis in such cases much earlier by examination of the blood or secretions for spirochetes.

54. **Contagiousness of Syphilitic Blood.**—Hoffmann also reports experiments with monkeys which have confirmed the contagiousness of the blood during the early stage of syphilis. The virus is present in the blood in an attenuated form, probably, as only part of the experiments resulted positively.

55. **Radium Treatment of Cutaneous Affections.**—Wichmann reports the experience at the Hamburg Lupus Institute with radium. He found that the larger part of the rays are absorbed in the cutis and that pathologic tissues absorb more than the sound. The action on the surface is too intense, while the underlying tissues do not feel the effect of the radiation enough. He suggests that it might be possible to overcome this difficulty by filtering the rays and increasing their deep action by supplementing them with injections of radioactivated fluids. He has found radioactive barium sulphate excellent for the latter purpose.

Jahrbuch für Kinderheilkunde, Berlin.

Last indexed, page 1735.

59 (LXIII, No. 3.) *Ileus bei Kindern. Volvulus flexuræ sigmoidea. W. E. Tschernow.
60 *Die osmotische Konzentration der gebräuchlichsten Säuglingsnahrungen (of infants' foods). Helene Stoeltzner.
61 Zur Frage der Pasteurisation der Säuglingsmilch (of milk). T. Zelenski.
62 *Mors thymica bei Neugeborenen (in the newly born). E. Hedinger (Berne).
63 Zur Kenntnis des Intubations-Traumas. C. Zuppinger.
64 Die operative Behandlung Jugendlicher Krüppel (youthful cripples). E. Reichard.
65 (No. 4.) Die Ernahrung mit "Hollandischer Säuglingsnahrung," ein Buttermilch-Gemisch; Dauerpräparat (buttermilk preparation that will keep). H. Koeppe (Giessen).
66 *Untersuchungen ueber die Pädatrophie. C. E. Bloch.
67 *Zur Kenntnis der Pneumokokken-Arthritis im ersten Kindesalter (in infants). H. Herzog (Heidelberg).
68 Ueber Verbreitung und Wirkung des Alkohols bei Schülern (liquor drinking by school children). R. Hecker (Munich).
69 *Diffuses Ekzem; Herztod (heart failure). H. Rehn.

59. **Volvulus of Sigmoid Flexure in Children.**—Tschernow reports 3 cases. Two were in lads of 10 and one in a girl of 4. The condition is very rare in children under 15, but is so frequent after 20 that Treves is cited to the effect that 2,000 persons die annually from this cause in England alone. One of Tschernow's 3 patients succumbed to the ileus. The girl was relieved of the acute symptoms of occlusion, but the trouble was evidently due mainly to a congenital dilatation of the colon. The sigmoid flexure and mesentery were unusually long allowing the flexure to form a loop which caused trouble in the passage of feces but no occlusion, as the loop was rounding and not a sharp peak. In Boeckel's case the round loop was twisted a quarter around on its axis. The symptoms are those of ileus in general. Indicanuria indicates obstruction in the intestines and may aid in the diagnosis. Other symptoms are due to the resulting autointoxication.

60. **Osmotic Concentration of Infants' Foods.**—Stoeltzner urges study of the osmotic concentration of the foods and stomach content of infants. It is almost certain that osmotic processes play an important part in the digestive processes.

62. **Sudden Death from Enlarged Thymus in Infants.**—Hedinger's previous communications on "thymus deaths" were recently reviewed in these columns, page 1484. He has found evidences of hyperplasia of the thymus in the cadavers of 17 infants. In some the thymus alone was unusually large, while in the others there was also thyroid hyperplasia, although not to such a degree as to have suffocated the child. In all these cases, as also in those on record, the children either did not recover from their asphyxia after birth or else, after a few hours of apparently normal breathing, respiration ceased abruptly. In the cases reported by Somma the children did not succumb until the third or fourth day, after several attacks of suffocation. Hedinger gives an illustration of a deformed, hemicephalous child who lived twenty-four hours. The thymus was extremely large, measuring 7.5 by 6.5 cm. and 4 cm. thick. The suprarenals were extraordinarily small. The findings in all these cases differed in several important respects from those characteristic of the status lymphaticus.

66. **Idiopathic Atrophy in Infants.**—Bloch supplements his former communications on this subject by reporting the pathologic anatomic findings in 6 cases of idiopathic atrophy of infants under 8 months. They demonstrate that the primary cause of this condition, as also of certain forms of chronic dyspepsia (without catarrh of the intestines), is defective functioning of the serous digestive glands.

67. **Pneumococcus Arthritis.**—Herzog remarks that the 3 cases of this condition which he has had occasion to observe in infants certainly demonstrate that the joints at this early age are predisposed to pneumococcus infection the same as other serous membranes, the pleura, peritoneum, pericardium and meninges. Without a preceding lung affection, it is rare in adults. Only 4 are known in 55 cases in adults; 11 in 28 cases in infants under 2, and 5 in 8 children from 2 to 14. The only effectual treatment is by extensive arthrotomy, carefully saving the ligament apparatus. The tendency to multiple abscesses must not be forgotten. The deposits of fibrin—"nests for the pneumococci"—must be carefully removed. Defects in the cartilage and bone must be curetted and the wound drained for two or three days. The function of the joint is seldom permanently impaired. Detachment of the epiphysis has been observed in neglected cases, but there is no actual sequestrum formation. The clinical picture observed in Herzog's 3 cases included extreme pallor of the skin, especially of the face, notwithstanding the irregular fever. The appetite, digestion and sleep did not seem to suffer much. The joint was swollen, sometimes the entire limb, and it was hot and sensitive to pressure. Sometimes the joint was abnormally movable. A characteristic feature is the absence of circumscribed redness when all other signs point to an inflammatory process. He based his diagnosis on this feature in one instance. When there is redness it indicates that the process has involved the tissues around the joint. The pneumococcus pus is generally a greenish yellow, not fetid, but creamy, with a tendency to fibrin formation. Endocarditis has never been observed in connection with the arthritis in infants. The general symptoms are much milder than in case of staphylococcus arthritis. Exploratory puncture will differentiate the affection from tuberculosis, etc. Gonorrheal arthritis in infants resembles more the pneumococcus affection, but other signs of gonorrheal infection are seldom lacking. There is little edema and the pus is thin and serous. The article concludes with a bibliography of 108 titles on pneumococcus arthritis.

69. **Diffuse Eczema; Heart Failure.**—An apparently healthy child of 16 months, with diffuse eczema with much exudation, was brought to Rehn for relief from the itching. He prescribed a 2 per cent. ichthyol salve and in a week the eczema had improved to such an extent that there was no more itching, and the child's appetite and sleep were good. This improvement lasted for two weeks, when the eczema flared up again with fever. It subsided under cool compresses and aluminum acetate with 0.1 gm. phenacetin internally morning

and evening. These measures were followed by application of a 5 per cent. ichthyol salve, under which the eczema and the general health rapidly improved. The mother reported five days later that the child had no appetite. There was no fever and no edema. The lymph glands around the right ear were enlarged, evidently the result of suppurating eczematous patches in the outer ear. The next morning Rehn was hastily summoned to the child, who was in collapse; the heart action was weak and irregular. The child died in less than two hours. There were no evidences of status lymphaticus, but there was fatty degeneration of the heart, liver and kidneys. Streptococci and staphylococci were found in the blood of the heart.

Monatsschrift f. Geb. u. Gynaekologie, von Rosthorn's, Berlin.
Last indexed, page 1655.

70 (XXIII, No. 3.) *Right of Child to Life at Birth.—Wie weit soll das Recht des Kindes auf Leben bei der Geburt gewährt werden? B. Krönig (Freiburg).
71 *Die Mortalität beim engen Becken einst und jetzt (contracted pelvis in the past and present). K. Baisch (Tübingen).
72 *Laktation und Menstruation. K. Heil (Darmstadt.)
73 Fall von schwerem Tetanus uteri und Spasmus orificii interni. W. Rühl.
74 *Hebotomie oder Symphyseotomie? H. Sellheim (Freiburg).
75 (No. 4.) *Anatomische Untersuchungen ueber die Grundlagen für die Leistungsfähigkeit der weiblichen Brustdrüse (anatomic basis for mammary secretion). Engel (Dresden).
76 *Salz Starvation in Dropsy of Pregnancy.—Chlornatrium-Entziehung bei Hydrops gravidtatis. H. Cramer (Bonn).
77 Riesenwuchs beim Neugeborenen (macerated fetus weighing 6,550 gm.). G. Schubert.
78 Adenoma malignum portionis. W. Schidkowski.
79 *Zur Prophylaxie und Radikaloperation postoperativer Ventral-Hernien. A. Schütze (Königsberg).
80 Ueber Leber- und Nieren-Echinococcus in der Gynaekologie (of liver and kidneys). D. von Veits.
81 *Statistische und anatomische Ergebnisse bei der Freund-Wertheimschen Radikal-Operation des Uterus-Karzinoms. R. Schindler (Graz). (Commenced in No. 2.)

70. **Right of Child to Life at Birth.**—Krönig discusses the question of how far obstetricians are justified in imperiling the mother to save the child. He quotes Zangemeister to the effect that the obstetrician is justified in performing operations in the interests of the child if they have generally a mortality of not over 2 per cent. He analyzes the 135 cases in his own experience in which children died during delivery, out of a total of 3,133 births. In 40 instances death was due to protracted birth and consequent asphyxia of the child, the soft parts being contracted and the head twisted. In 23 cases there was placenta prævia, in 18 prolapse of the cord and strangling, and in 22 cases the mother's pelvis was contracted. He is convinced that with more active measures some of these children might have been saved. Reviewing his own and the experience of others, he has found that the prognosis for the mother of symphyseotomy and Cesarean section is scarcely any more unfavorable than that of craniotomy, granted good technic and asepsis. The maternal morbidity of craniotomy is also higher than is generally assumed. Prophylactic version and artificial premature delivery have a larger mortality for the mother than is generally recognized, and they reduce the mortality of the children very little if at all. He advocates more extensive resort to pelvis-enlarging operations or Cesarean section, provided the birth canal can still be regarded as aseptic. If the mother is already infected, Cesarean section is almost inevitably fatal, unless infection of the peritoneal cavity can be prevented. During 1905, 440 children weighing over 2,500 gm. were delivered at his clinic, with 11 deaths. Two at least of these children might possibly have been saved if an operation to enlarge the pelvis had been undertaken earlier. One of the children succumbed during the serious collapse of the mother in consequence of lumbar anesthesia.

71. **Past and Present Mortality in Case of Contracted Pelvis.**—Baisch compares statistics from various clinics to learn the causes of the mortality for mothers and children when the pelvis is deformed. The practical conclusions of his study are that it is a grave mistake to suppose that artificial premature delivery, prophylactic version and high forceps will accomplish the desired purpose when the pelvis is too much contracted to allow the passage of a living child. The mortality from expectant treatment in such cases is not so high as from these operative measures. Zweifel and Döderlein have abandoned them altogether, and yet their mortality is lower than that of others who still cling to these measures. In conclusion Baisch asks if it might not be advisable to substitute external cephalic version in case of transverse presentation, for the classic podalic version. He advises against trusting too long to expectant treatment in case of too protracted delivery. The widespread dread of the forceps is perhaps exaggerated. Forceps and version are contraindicated, however, when the head has failed to move downward at all. The entrance of the head into the pelvis might be favored by hebotomy (pubiotomy or extramedian symphyseotomy).

72. **Lactation and Menstruation.**—Heil's article is based on 200 cases. His experience has been that about half of all nursing women menstruate regularly. He is almost tempted to believe, for reasons which he cites, that the menstruating nursing women represent the normal healthy type.

74. **Hebotomy or Symphyseotomy.**—Sellheim contributes anatomic, clinical and experimental researches to aid in deciding the question as to the superior advantages of these two operations. The balance is still undecided.

75. **Anatomic Bases for Secretion of Milk.**—Engel points out that the defective development of the specific glandular parenchyma of the mamma may be responsible for the inability of certain women to nurse their babies. The external form and palpation findings do not permit of reliable conclusions as to the functional capacity of the mammary glands. Every breast, even the defectively developed ones, contain more or less of the secreting parenchyma, and in every case it should be pressed into service for the feeding of the infant. The mothers with little of this secreting parenchyma should be encouraged to keep it continuously at work so that their infants can at least profit by partial breast feeding if the mothers are not able to feed them entirely.

76. **Reduction of Salt in Treatment of Dropsy of Pregnancy.**—Cramer regards the edema that develops in the course of pregnancy, and also the varices, as a manifestation of the autointoxication of pregnancy. The walls of the vessels are affected by some disturbance in metabolism, the result of autointoxication. The dropsical tendency can be successfully combated by reduction of the intake of salt, as his experience in 5 typical cases has demonstrated. The patients did not eat salted foods, the bread was baked without salt, and all food containing salt was avoided, including milk and meat. On a diet of eggs, puddings, cereals, vegetables and fruits the existing dropsy rapidly retrogressed and the patients lost weight constantly until their normal weight was reached. One of his patients had a fetus in each half of a double uterus, delivery proceeding nearly simultaneously in each but quite independently, although requiring some help. This patient exhibited symptoms toward the end of the pregnancy which indicated the existence of eclampsia, although there were no convulsions. He thinks that we must accept the existence of eclampsia without convulsions as a well-defined morbid entity, and even without edema or albuminuria. His experience further demonstrates that the edema of the legs observed during pregnancy is a static accumulation of fluid when the dropsy has reached a certain degree. He was unable to detect any injurious influence from the "salt starvation" treatment on the development of the children, and regards the benefit observed after reduction of salt in the diet in the dropsy of pregnancy as a very promising fact. The measures ordinarily applied, sweats, diuretics, etc., have more or less of an effect on the heart or general health of the patient, while reduction of salt in the food is harmless, simple and easy, even for the poorest.

79. **Postoperative Ventral Hernia.**—Schütze declares that a well-made suture of the fascia after a laparotomy ensures positively against postoperative hernia. The best technic for the suture is what he calls the "Vienna suture," with an antiseptic (Turner) silk. In case of postoperative hernia, he has found the Karewski technic of treating it harmless and extremely satisfactory. The earlier it is done the better the results. The Karewski technic was briefly described in THE JOURNAL, xliv, page 665, 1905.

81. **Statistical and Anatomic Study of Results of Operations for Uterine Cancer.** Schindler's extensive article re-

views what has been written on the results of the Freund-Wertheim radical operation for carcinoma of the uterus. He presents all the evidence and the results of 117 operations at Gratz.

Muenchener medizinische Wochenschrift.

82 (LIII, No. 11.) Einige Studien ueber Reflexe, besonders an 116 Hemiplegikern. Graeffner.
83 *Die Behandlung akuter und chronischer Eiterungen mit Phenol-Kampher (for suppuration). C. Ehrlich.
84 Deformities in Extremities Due to Amniotic Bands.—Ueber Extremitätenmissbildungen. E. Schwalbe.
85 *Eine sehr empfindliche Reaktion auf Gallenfarbstoffe (bile pigments). A. Kroklewicz.
86 Anthrax of Larynx.—Milzbrand des Kehlkopfes. E. Glas.
87 Zur Diagnose der Extrauteringravidität durch Röntgen-Strahlen. F. Lichtenstein.
88 *Fall geheilter Magen-Perforation (of stomach). v. Zezschwitz.
89 *Vaccine Affection of Eye.—Ueber Vakzineerkrankung des Auges. L. Alexander.
90 Therapie des Tonsillen-Abszesses. G. Sommer.
91 *Pregnancy and Delivery After Vaginal Cesarean Section.—Ueber den Verlauf von Schwangerschaft und Geburt nach vorausgegangenem vaginalem Kaiserschnitt. Rühl.
92 Improved Appliance for Agglutination Test. Bluttupferröhrchen zur Erleichterung der Gruber-Widalschen Reaktion. E. Czaplewski.
93 Die neurogene und myogene Theorie des Herz-Schlags (of heart beat). E. Mangold. (Concluded.)
94 Historisches zur Frage des Einzelkelches beim Abendmahl (individual communion cup). A. Martin.

83. **Carbolic Acid and Camphor in Treatment of Acute and Chronic Suppuration.**—Ehrlich has adopted Chlumsky's method of treating suppuration with a mixture of 30 parts carbolic acid, 60 parts camphor, and alcohol to 100 parts. It was described in The Journal, Nov. 4, 1905, page 1453. Ehrlich confirms all Chlumsky's assertions in regard to the simplicity, harmlessness and effectiveness of this method of treating all kinds of inflammations. It does not require trained assistance, and his experience in 96 cases of felons, phlegmons, leg ulcers, furunculosis, erysipelas, tuberculous fistulas and infected wounds of all kinds, was extremely favorable. He applies the mixture on a loose tampon, without an impermeable covering, and found the length of treatment very much shorter than by other methods. There were no disagreeable by-effects. Among the examples cited was the case of a soldier with a tuberculous fistula in his neck which had resisted treatment for months. Under phenol-camphor treatment the fistula healed in twelve days. In another case an old leg ulcer on a soldier healed under three applications. The relief from pain and the feeling of warmth suggest that the benefit may be due to artificial hyperemia as in Bier's passive congestion, but the latter technic requires trained supervision, which is unnecessary with the phenol-camphor dressings. A folded mull compress impregnated with the phenol-camphor is placed around the focus and dry cotton over it, the whole held by a loose bandage. When the focus is incised a strip of mull impregnated with the mixture is introduced into the opening.

85. **Sensitive Reaction for Bile Pigments.**—Krokiewicz reports that later experience has confirmed more and more the extreme delicacy of his test for bile pigments. The reagents used are 1 per cent. aqueous solution of sulphanilic acid and also of sodium nitrite, and pure hydrochloric acid. He mixes 1 c.c. each of the two solutions together and then pours out all but 0.5 c.c. The same amount of the fluid to be examined is added. In case of the presence of bile pigments it turns red and, on addition of a drop or two of hydrochloric acid, a permanent violet. In 1,000 different tests with urine after ingestion of various drugs and in other conditions the reaction was never positive except in the presence of bile pigments. The reaction also can be obtained with as little as from 2 to 10 drops of the fluid to be examined.

88 **Spontaneous Cure of Perforation of Stomach.** The patient described was an artist of 46 who had complained for some time of symptoms suggesting a possible ulcer in the stomach. Indications of perforation developed, treated by absolute rest, very hot applications to the region for several hours, and then ice. Although the high temperature and the serious condition of the patient seemed to impose surgical intervention, yet his constitution and a family history of tuberculosis, and signs that the peritonitis was becoming circumscribed justified delay and recovery proceeded smoothly. A year later there were evidences of fixation of the transverse colon and of its adhesion to the abdominal wall and liver.

89. **Vaccine Affection of Eye.**—Alexander reviews the literature on the subject of vaccine affections of the eyes, mouth, genitals, etc. He reports a case in which a child had probably scratched a vaccination pustule and inoculated itself on the face, eyelids, right hand and arm so that other pustules developed. He urges prophylaxis of such occurrences.

91. **Pregnancy and Delivery After Vaginal Cesarean Section.**—Rühl relates the details of 4 cases in which he delivered women in a pregnancy subsequent to vaginal Cesarean section. No disturbing influence from the operation could be discovered. In one case the rigidity of the cervix had been the reason for the obstetric operation, and this rigidity interfered also with the later delivery. In another case a cicatricial adhesion fastened the uterus to the broad ligament, and this had to be severed before the uterus was able to enlarge normally, but this band was the result of old inflammation, not of the obstetric operation.

Nordiskt medicinskt Arkiv, Stockholm.

Last indexed, page 1245.

95 (XXXVIII, Internal Medicine, No. 4.) Present Status of Crusade Against Tuberculosis.—Ueber den derzeitigen Stand der Tuberkulosebekämpfung. Robert Koch. Address on Receiving Nobel prize.
96 *Ueber experimentelle Leukocytose. Kier.
97 *Die Cytologie der Pleura- und Peritoneal-Ergüsse (effusions). H. Köster.
98 Traitement de la tuberculose par le sérum antituberculeux de Marmorek. E. Levin.

96. **Experimental Leucocytosis.**—Kier asserts that in rabbits there are always more leucocytes proportionately in the peripheral vessels than in the central, except that the portal vein always contains a large proportion of leucocytes. The fastening of the animals, the anesthetic, and any slight operation affects the number of leucocytes, and the leucocytosis of digestion, in rabbits, is always very pronounced. These facts must be borne in mind in experimental studies of leucocytosis in these animals.

97. **Cytology of Pleural and Peritoneal Effusions.**—Among the results of this extensive study of the subject may be mentioned the fact that lymphocytes predominated in 80 per cent. of the tuberculous effusions, while in the inflammatory exudates of other than tuberculous or rheumatic origin, the polynuclear leucocytes predominated in 80 per cent. and the lymphocytes were comparatively rare. In cases of carcinoma the endothelial cells predominated in 63.4 per cent., but lymphocytes were also present in large numbers in 11 out of the 41 cases.

NEW PATENTS.

Recent patents of interest to physicians:

$18814. Vaginal syringe. Martin L. Bosworth, Bristol, R. I.
$18618. Massage apparatus. George B. Fraley, Philadelphia, Pa.
$18953. Obstetrical instrument. John G. Gottlieb, Essenden, N. D.
$18446. Truss. George V. House, Mount Vernon, N. Y.
$18888. Truss. Elbu Hovey and M. M. Black, Albion, Mich.
$18878. Ammonia still. Burchard Thoens, New York.
$18583. Machine for forming sacks for suspensory bandages. Justin K. Toles, Chicago, Illinois.
$19704. Apparatus for reoxygenating exhaled air for respiration purposes. Max Bamberger, F. Bock, and F. Wanz, Vienna, Austria-Hungary.
$19498. Massage implement. James Barker, Philadelphia, Pa.
12477. Reissue. Sanitary syrup-receptacle for soda-water fountains. Frederick H. Hecker, Los Angeles, Cal.
$19458 Vibrator-applicator for and connection therefor. Clarence H. Richwood, Boston, Mass.
$19459. Applicator for mechanical massage. Clarence H. Richwood, Boston, Mass.
$19383. Treating surgical articles. Austin V. M. Sprague, New York, N. Y.
$19392 Gas-administering apparatus. Walter N. Wayman, Staunton, Va.
$19330. Hypodermic syringe. Osvaldo A. Yeaza, Guatemala, Guatemala.
$20082. Artificial leg. John T. Apgar, New York.
$19972. Bottle indicator. Washington H. Bixler, Easton, Pa.
$19975. Pelvical belt or band. Guglemo Bracco, Sr., Ferin, Italy.
$20106. Indicator for bottles. Frank A. Erkovic, Galveston, Texas.
$20004. Fecal-analyzer. James A. MacMillan, Detroit, Mich.
$19901 Medicated pencil. Charles S. Mascal, Kingston, N. Y.
$20753. Electrical vibratory motor. James L. Adams, Jr., Springfield, Ill.
$20845. Obstetrical forceps. Lyman G. Barton, Willsboro, N. Y.
$20853. Truss. Harvey Eagon, New Comerstown, Ohio.
$20576. Automatic dose-measuring bottle or vessel. Arthur W. Hutchins, Providence, R. I.
$20720. Capsule lifter. Hubert King, New York.
$20056. Ozone ventilator. Frederic de Mare, Brussels, Belgium.
$20724. Capsule closing and printing machine. Victor Meyberg, Newark, N. J.
$20728 Truss. Thomas O'Malley, McKeesport, Pa.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, JUNE 16, 1906. No. 24.

Addresses

THE ASSAULT ON TROPICAL DISEASE.*

LEWELLYS F. BARKER, M.D.

Professor of Medicine, Johns Hopkins University, Baltimore.

BALTIMORE.

INTRODUCTION.

Tropical pathology is rapidly becoming recognized as a special field in medicine, a field worthy of cultivation by itself and for its own sake. Indeed a number of the energetic and able men of our profession have already made the decision to devote themselves to it as a life work.

Though it was my rare good fortune some years ago to travel as a member of a commission for the special study of tropical diseases, and I had the opportunity in Hongkong, in the Philippines and in India to observe some of the more prevalent maladies occurring there, it was less this fleeting experience, I imagine, which prompted you to ask me to speak on the subject allotted to me, than, in the first place, a desire to extend a courtesy to the appointee to a dignified office, and, in the second place, the conviction that one whose life is devoted to teaching and research in inner medicine might have some qualifications for judging of progress in one of its special fields. For after all the problems and difficulties of disease in warm climates do not differ fundamentally from those of disease in the cooler countries of the earth; they can scarcely be solved without enlightenment by the principles which are true for pathology here as well as there.

THE GROWTH OF INTEREST IN TROPICAL MEDICINE.

A survey of the history of medicine will reveal many examples of stimulation to medical research the outgrowth of changes in the political and economic movements in the world. Perhaps none is more striking, however, than the impulse to medical research excited comparatively recently by the struggle of the nations for the control of the tropics. A great impetus to American interest was given by the Spanish-American war and the relations necessarily established with Cuba, Porto Rico and the Philippines. That experience taught us on the one hand how ultimately the problems of tropical pathology and colonial medicine are bound up with those of military and naval hygiene, and, on the other, how indispensable a knowledge of tropical diseases is for a home country that has to deal with tropical possessions. The proximity of Mexico to the United States, the large volume of trade with South American ports and with the Orient, the increasing number of American inhabitants in the Philippines and West Indies, clearly emphasize the importance of the study of tropical diseases for the people of the United States; this importance is decidedly augmented as we consider the construction of the Panama Canal and the results that inevitably will follow it.

Europeans are no less interested in the problems of tropical medicine. England with India, the Malay States and its African territories is, wisely, greatly concerned. Germany's investigations in tropical pathology are as aggressive as are her political tactics in the hot countries. France, though in a smaller way perhaps, is making notable contributions. Italy, Portugal and even Russia are taking part in the movement to increase our knowledge of tropical diseases, to improve the hygienic conditions in warm climates and to make effective the sanitary engines of modern prophylaxis.

THE PRINCIPAL DISEASES OF THE TROPICS.

The people in hot countries suffer from the "cosmopolitan" diseases, as well as from those peculiar to their lands. The study of these universal maladies as they occur in the warmest climates is a problem by itself, well worthy of serious investigation. The difference in climatic relations, the various races affected, and the peculiar economic and cultural conditions, give in the tropics an especial stamp to types of disease well known all over the world. Typhoid fever, relapsing fever, cholera, dysentery, smallpox, tetanus, tuberculosis, syphilis, diabetes, arteriosclerosis, nephritis and neurasthenia ought to be understood by the physicians of Manila, Singapore, Bombay, Khartoum and Havana as well as by the doctors in Baltimore, London and Berlin. But there is a large group of diseases which occur almost exclusively in tropical and sub-tropical climates and only rarely in the more temperate regions of the earth. A surprisingly large number of them are due to bacteria or to animal parasites. Some of them are infections or toxic diseases of unknown origin. A large number of them are cutaneous diseases presenting peculiar characters. Of the better known infectious diseases you will recall bubonic plague, dengue, yellow fever, Malta fever, tropical malaria, beriberi and leprosy. Of the intoxications I may remind you of pellagra, lathyrism and snake poisoning. Of the diseases due to animal parasites, the distomal, the bilharzial, the filarial, the uncinarial, the amebic, the piroplasmal, the malarial, and the trypanosomal appear to be the most widespread and important.

INSTITUTES FOR INSTRUCTION IN TROPICAL MEDICINE.

Coincident with the recognition of the momentousness of tropical disease there has developed a series of institutes for its special investigation, a group of hospitals in which cases may be observed, and a number of courses of instruction in tropical medicine, some of them in separately organized schools.

Here in the United States, we are far behind other countries in the foundation of such institutes and in the planning and realizing of such courses of instruction. American contributions to tropical medicine have been great, but they have been along other lines. There is

* An address delivered by invitation before the Medical and Chirurgical Faculty of Maryland, Baltimore, April, 1906.

one notable exception and that is not in the United States, but in a dependency. Thanks to the liberal mindedness of the Hon. Dean C. Worcester of the Philippine Department of the Interior, a biologic laboratory has been established as a part of the Bureau of Government Laboratories in Manila, with Dr. Richard P. Strong as director; it has been admirably equipped, has a fine library and other exceptional facilities, and is attracting a high type of trained investigators. This laboratory and its management guarantee the thorough investigation of tropical pathology in the Philippine Islands; that it will continue to reflect credit (as it has already done) upon American medicine as a whole there can be no doubt. For an account of the organization and equipment of this Institute I would refer you to an article by the superintendent of the government laboratories in Manila, Dr. Paul Freer.[1]

But within home territory, despite the excellent work carried on in tropical pathology by our University laboratories, the Army, Navy and Marine-Hospital service, so far as I know, no institute especially set apart for the study of tropical disease has thus far been endowed or planned. A choice opportunity thus lies open to some wealthy person who wishes to benefit humanity.

There has been a good deal of discussion as to whether the institutes for tropical research should be situated in the home countries or in the tropical lands themselves. As noted, America thus far utilizes only laboratories established for more general purposes at home, and has set up one permanent laboratory in the tropics. The advantage of a permanent station in Manila must be obvious to all; with abundant materials and facilities for work on the spot, investigators avoid those difficulties which so often rob travelling commissions both of valuable time and of rare opportunity. Much can be said, however, for the more generally accepted view that special institutes should be organized at home, one or more for each great nation. Germany, for example, set up in 1900 an Institute for Naval and Tropical Hygiene (*Seemanskrankenhaus und Institut für Schiffs- und Tropenkrankeiten*) in Hamburg, which serves as a sort of central institute for all her many scattered colonies. It has the advantage of economy on the one hand and of contact with home science on the other. The Germans fit out expeditions to the tropics instead of establishing stations there, though these expeditions frequently spend large sums of money in setting up temporary laboratories in the tropical regions where they work. In Hamburg the institute has a hospital connected with it; it contains a fine library. Regular courses of instruction in tropical diseases, six weeks in duration, are given two or three times a year. There is no examination at the end of the course. A good description of the institute and its work will be found in an article by Dr. Nocht, its director.[2]

In England, too, the tendency is toward the establishment of home institutes for the study of tropical diseases, though certain laboratories, usually temporary, such as the plague laboratories in India, the beriberi laboratory in the Malay States, the Burroughs Wellcome laboratory at Khartoum, have been set up nearer the equator. Largely through the far-sightedness of the Hon. Joseph Chamberlain, there has been founded at Albert Dock in London as a branch of the Dreadnaught Seaman's Hospital, the now well-known London School of Tropical Medicine (Director S. C. Low), where Sir Patrick Manson and other lecturers, including Hewlett, Duncan, Cantlie, Simpson and Sambon, are at work. It has an income of some ten thousand dollars per annum, and gives several courses yearly to physicians entering the Colonial service or to others interested in tropical diseases.[3]

The Liverpool School of Tropical Medicine was founded in 1899 and is supported by voluntary contributions. Its aims are first to train physicians in tropical hygiene; secondly, to make original investigations of tropical diseases; and thirdly, to organize preventive measures for the tropics. It gives many shorter and longer courses of instruction and issues certificates of proficiency. Dr. R. Boyce is the dean of the school, and Major Ronald Ross is the principal professor with tropical experience. The special laboratory for Tropical Medicine and Parasitology forms a part of the magnificently equipped Thompson-Yates and Johnston laboratories in Liverpool.

In France there is the Institute of Colonial Medicine (*Institut de medicine coloniale de Paris*); in Italy special instruction is given in "exotic pathology" and "naval hygiene" by Rho and Pasquale. Even Portugal, I am told, has a school of tropical medicine.

EXPEDITIONS AND COMMISSIONS FOR THE STUDY OF TROPICAL DISEASES.

Most fruitful in results has been the promotion of expeditions and commissions to the tropics for the study of particular diseases. The wealth of information we now possess concerning plague and Asiatic cholera is largely due to the work of such commissions. The Yellow Fever Commission of the United States Army, with Walter Reed at its head, carried out in Cuba the remarkable series of experiments well known to us all. The Johns Hopkins Medical Commission to the Philippines gave Flexner the opportunity to begin his important studies on dysentery; the light recently thrown on the summer diarrheas of infants may be regarded as a direct sequel to his investigations.

The Liverpool School of Tropical Medicine has sent out nearly twenty different expeditions to the tropics, among them commissions which have greatly increased our knowledge of malaria and sleeping sickness. The German government is very liberal in the financing of expeditions. R. Koch, who has already been sent on a number of costly excursions, has left again this month for Entebbe in British Uganda. He has been sent for eighteen months to continue the study of sleeping sickness, and has been allotted some $30,000 for his expenses during the first year.

THE BIBLIOGRAPHY OF TROPICAL DISEASES.

A subject of such rapidly extending significance, and one which has to be taught to an increasing number of medical men, could not go long without its text-books. Sir Patrick Manson's "Tropical Diseases,"[4] is widely read in English speaking countries. His "Lane Lectures" given in San Francisco last year also afford an easy approach to the subject.[5]

Of German books, Scheube's "Diseases of Warm

1. Freer, P. C. Description of New Buildings, Bull. No. 22, Dept. of Interior, Bureau of Govt. Laboratories, Manila, 1905, 1-29.
2. Nocht, D. Organization des Unterrichts ueber Tropenhygiene und Tropenkrankheiten in Hamburg. Janus, Amst., 1901, ix, 170-876.
3. Manson, Sir, P. On the London School of Tropical Medicine. Jour. Trop Med., Lond., 1904, vii, pp. 10-14; also, The London School of Tropical Medicine, what it has done, is doing, and hopes to do. Climate, Lond., 1903-4, v, 12-19. See also Stiff (E. B.) Report on the Schools of Tropical Medicine and Military Medical Schools of England. Rep. Surg.-Gen. Navy, Wash., 1904-5, 167-171.
4. Manson (Sir P.) Tropical Diseases, 3d ed., London, 1903.
5. Manson (Sir P.): Lectures on Tropical Diseases. Lane Lectures for 1905. London, 1905, pp. 230.

Countries"[6] is excellent. The references at the ends of the individual chapters permit of quickly getting at the original sources. The book has been translated into English.[7] Just recently the first volume of a new handbook has appeared in Germany.[8] I have not yet had the opportunity to study it. The books of Rho, Le Dantec, Brault and Muzio may be mentioned without exhausting the list from other countries.

Original articles on tropical disease appear in various scientific periodicals. Recently several journals have been established which are devoted either wholly or largely to the subject. Prominent among these are the *Journal of Tropical Medicine* issued twice a month in London, the *Archiv für Schiffs- und Tropenhygiene* in Hamburg, *Janus* in Amsterdam and the *Philippine Journal of Science* in Manila.

Almost every conceivable phase of the subject is being dealt with in special articles in the general medical journals. A glance through the Index Medicus under the caption "Tropical Medicine" will give an idea of the activity prevailing. There are papers dealing, for instance, with diet in the tropics, the influence of the acquisition of tropical territory on American medicine, the effects of tropical diseases on commerce, the care of the aged and infirm in the tropics, and the particular diseases which occur in various localities such as the Panama Canal zone.

RECENT ADVANCES IN THE STUDY OF PARTICULAR DISEASES.

So avid are medical men to-day of knowledge of tropical diseases that reviews of progress are demanded at brief intervals. The Journal of Tropical Medicine, for instance, has recently reviewed the work of 1905[9] and in the articles by McCrae,[10] Blumer,[11] and Boyce,[12] a great deal of newer work is referred to. I dare not in the time allotted to me do more than call your attention most briefly to some of the more interesting advances.

Bubonic Plague.—This disease, interesting especially to me on account of the opportunities I had for observing it, first in Hongkong, later in Bombay and Poona and still later as a member of the Federal Commission in San Francisco, continues its ravages in some countries, especially in India, unabated. It may surprise you, as it did me, to learn that the mortality from plague, in India alone, during the first six months of 1905 amounted to 878,602, the highest record for a half year thus far made in the epidemic. In the latter half of the year the disease was less prevalent, though the number of deaths even then was enormous.

Workers in Hongkong assert that they have shown that plague is in most instances set up by infection in the alimentary canal, an opinion in which pathologists will I believe be slow to concur. The opinion of Cantlie (1897), so often spoken of nowadays, that the black rats (*Mus rattus*) and brown rats (*Mus decumanus*) play a different part in the spread of the disease, needs farther confirmation before it is accepted.

In countries where plague is rampant, preventive inoculation is gaining ground. Haffkine's method is followed as a rule; it is desirable that the new autolytic prophylactic worked out by R. P. Strong be tried on a large scale, since theoretically it should be very serviceable.

Dengue.—The most important new observation on the disease is that of Sutton and Carpenter in the Isthmus of Panama, which shows it to be one of the diseases in which the white corpuscles are diminished in number and there is a relative preponderance of the small mononuclear variety.

Yellow Fever.—The fundamental experiments of Reed, Lazear, Carroll, and Agramonte, which demonstrated the rôle of a particular form of mosquito, *Stegomyia fasciata,* in the transmission of yellow fever, a conception first formed by Finlay of Havana, has been manifoldly confirmed by other observers, in Cuba, in Mexico and in South America. The brilliant application of the discovery to yellow fever prophyiaxis in Havana by Gorgas is well known to all. After last year's experience with yellow fever in New Orleans, everyone is wondering as to what will happen there this year. The death rate in the epidemic in New Orleans and adjacent places last autumn was exceptionally low; of 3,400 attacked only some 451 died (13.20 per cent). In Pensacola there were 80 deaths in some 560 cases (14.28 per cent). It is rather strange, as a recent commentator points out, to see Havana turning the tables on New Orleans and establishing a rigid quarantine against that city! It is asserted that the few cases which occurred in Havana last year were all imported.

Malta Fever, Mediterranean Fever, or Undulant Fever.—An occasional soldier or sailor returns to the United States suffering from this disease (Curry, Craig), and it is known to occur in Porto Rico (Musser and Sailer), and in the Philippines (Strong and Musgrave). This disease, which in some respects resembles typhoid fever, is separable from it clinically by its more protracted course, the more marked remissions in the fever, the sweating, the frequency of joint pains and neuralgias and the orchitis and epididymitis which frequently complicate it. The disease is due to infection with the *Micrococcus melitensis* (Bruce, Hughes). It is not contagious. The diagnosis is easily made by means of the serum reaction introduced by Wright.

Some very important work has been done during 1905 by the so-called Mediterranean Fever Commission, consisting of Colonel Bruce, Major Horrocks, and Drs. Shaw, Zammit and Johnstone. It is regarded by some as the best piece of work of the year in tropical medicine. This commission studied the duration of life of the causative micrococcus outside the body, and made investigations concerning its occurrence in the blood, urine, feces and sweat of patients suffering from the disease; they also studied the disease experimentally in monkeys. It appears that the milk supply in Malta is derived chiefly from goats, and in June of last year Zammit made the important discovery that the Maltese goats are infected with *M. melitensis*; the coccus was isolated from the milk and from the urine of these animals.

Malaria.—This disease, of paramount interest to physicians in Maryland, is still being assiduously studied and its ravages are being curtailed. The diagnosis has been rendered more rapid and certain by the introduction of the dehemoglobinized-thick-blood-film method

6. Scheube, B.: Die Krankheiten der warmen Länder. Ein Handbuch für Aerzte. 3 Aufl., Jena, 1902.

7. Scheube, B.: The Diseases of Warm Countries. A handbook for medical men. Transl. from the German by Pauline Falcke. Ed. by J. Cantlie. 2d revised ed., Phila., 1903.

8. Handbuch der Tropenkrankheiten. Unter Mitwirkung von A. Baelz (*et al*) Hrsg. von Carl Mense, Bd. I, Leipzig, 1905. J. A. Barth, 366 pp. 9 pl., 8.

9. cf. Some Points of Interest in Tropical Medicine During 1905. Jour. Trop. Med., Lond., 1906, vol. ix, p. 6.

10. McCrae, J.: Recent Progress in Tropical Medicine. Inter. Clin., Phila., 1904, 14s., II, pp. 22-36.

11. Blumer, G.: The influence which the acquisition of tropical territory by the United States has had, and is likely to have on American Medicine. Trans. Am. Med. Assn., 1905, vol. xlv, pp. 169-177; see also Med. News, N. Y., 1905, vol. lxxxvii, pp. 107-114.

12. Boyce, R.: The Year's Progress in Tropical Medicine, Brit. Med. Jour., Lond., 1905, II, 1258.

and of the Jenner and Hastings stains. The studies of Craig on latent or masked malarial infections, from which 25 per cent. of the soldiers returning from the Philippines suffered, should teach us a salutary lesson.

The distribution of the mosquito which transmits malaria is becoming better known. Hirshberg and Dohme's studies here in Baltimore were supplemented last year by Coffin's careful search. The various methods for the prevention of malaria—the prophylactic administration of quinin, the use of mosquito netting, the destruction of the breeding places of the mosquito—are being tried, one method being favored in one place, another in another. That the annihilation of the mosquito is not an impossible, nor even an impracticable task is the conviction gained by many who listened to the interesting address recently delivered here by Dr. Smith of Connecticut. In Italy the destruction of breeding places has thus far seemed too formidable a task, but in the Malay States (at Klang and Port Swettenham) Watson has applied the method successfully. Celli's report of the great anti-malarial campaign in Italy makes most interesting reading. There is no longer any doubt that malaria is a preventable disease; the only question is, when shall we prevent it?

Beriberi.—This disease, the *Kakke* of Japan, continues to interest and to puzzle medical scientists. The etiology is still obscure. Dr. Hamilton Wright[13] believes that it is an acute or subacute infectious disease, due to a specific but as yet undiscovered micro-organism. He thinks that the germs may be taken in with food of various kinds, and his theory is that the micro-organism, whatever it is, multiplies chiefly in the pyloric end of the stomach and duodenum, and that it produces a toxin which is immediately absorbed and affects first the terminals of the vagi in the stomach and heart, and later on other nerves. Wright thinks the disease is spread by the feces, and regards this view as of great importance for prophylaxis. His practical results at the jail in Knale Lumper appear to lend some support to his view.

The recent Japanese announcement of the discovery of a specific bacterium in Kakke does not seem to be well founded, as may be read between the lines of the conservative report of Herzog, who went from Manila to Japan to investigate the matter.

Tick Fever.—The tick fever of Africa, first observed by Livingstone, was definitely proved in 1904 to be due to the bite of a tick, the *Ornithodorus moubata* of Murray. The disease has been carefully studied recently by Todd, of McGill, and the late Dr. Dutton, as well as by Ross and Milne in the Congo Free State. Koch thinks that the disease is identical, clinically, with relapsing fever, and that it is due to a spirochete which is probably the *Spirochæte obermeieri.*[14] It has been shown that the tick can transmit it, and it seems likely that the transmission is not merely mechanical, but that there is a special phase of development in the tick. Koch has studied the disease in East Africa.[15] He states that the tick lives in the floors of native huts and sucks blood at night. The spirochete does not multiply in the tick's stomach; it leaves the alimentary tract of the tick in a few days, and is later found in the ovary, multiplying in the eggs. Koch advises travelers to pitch their tents on ground not previously used for camps.

Uncinariasis.—Since Ashford's discovery of the prevalence of hook-worm disease in Porto Rico in 1900 and the stimulus exerted by Stiles' excellent monograph, the physicians in the Southern States, especially in North Carolina, Georgia and Alabama, have reported a large number of cases of the disease. We meet with it not infrequently in the wards of the Johns Hopkins Hospital. The theory that the parasite enters through the skin has received much support just lately from the experimental work of Looss.[16]

Sleeping Sickness.—One of the most interesting advances of the time is the clearing up of the causation of that remarkable disease known as the sleeping sickness of West Africa, or negro lethargy. In November, 1902, Castellani, while examining the cerebrospinal fluid obtained by lumbar puncture from a case of sleeping sickness, found a trypanosome in the microscopic field. He seems to have attached no especial significance to the observation, but on mentioning his finding to Lieutenant-Colonel Bruce some time later, the latter initiated and carried out an investigation which demonstrates that sleeping sickness is due to a trypanosomal infection of the nervous system. In 1903 it was shown that in at least 70 per cent. of the cases of sleeping sickness the trypanosoma can be found in the cerebrospinal fluid. It had been supposed earlier that a special fly—the so-called Uganda tsetse-fly, *Glossina palpalis*—might transmit the disease, and Bruce found (1) that its distribution corresponds to that of sleeping sickness, and (2) that it can and does carry the parasite.

In 1901, at Bathurst, Gambia, Forde found a trypanosome in a case of anomalous fever, an observation confirmed later in the year by Dutton. This human trypanosoma fever is due to an especial trypanosome, called by Dutton the *Trypanosoma gambiense.* In 1903 Manson and Mott, studying a case of trypanosoma fever in a European lady, were surprised to find the symptoms of sleeping sickness developing in their patient. The idea occurred to them that "trypanosoma fever" is merely the first stage of sleeping sickness, and this idea has been shown by Laveran and other workers to be correct. The Royal Society appointed a sleeping sickness commission, which has recently reported. Its members find that sleeping sickness begins as a specific polyadenitis caused by the *Trypanosoma gambiense.* Besides the enlargement of the glands, there is an increase in the small mononuclear white corpuscles in the blood. The sleeping symptoms develop in a late stage, and the disease is then invariably fatal. Cases in the stage of polyadenitis, before the lymph spaces of the nervous system are invaded, may recover, especially if arsenical preparations be given. The bacteria occasionally found in the blood and tissues at autopsy have no relation to the disease proper, but are secondary invaders. While the Uganda tsetse-fly (*Glossina palpalis*) is capable of transmitting the disease, other biting flies, such as *Stomoxys*, can not do so.

In this connection the work of Novy of Ann Arbor and his associates assumes the greatest importance. These American parasitologists have succeeded in grow-

13. Wright, H.: An Inquiry Into the Etiology and Pathology of Beriberi, London, 1903.

14. Since the above was written Dr. F. G. Novy, Ann Arbor, has reported at the Association of American Physicians in Washington, his studies on the spirochete of tick fever. His investigations appear to demonstrate conclusively that this spirochete is not identical with that of ordinary relapsing fever, but is a distinct species. There may be, therefore, several varieties of relapsing fever, each with a special causative spiral organism. Novy names the micro-organism of African tick fever the *Spirochæte du Boni.*

15. Koch, R.: Vorläufige Mitteilungen ueber die Ergebnisse einer Forschungsreise nach Ostafrika. 1. Recurrens. 2. Entwicklung des Piroplasma bigeminum. 3. Küstenfieber der Rinder. 4. Tsetsefliegen und Trypanosoma. Deutsche med. Wochft., Leipzig, u. Berlin, 1905, xxxi, 1805 1869; see also Transl. Jour. Trop. Med., London, 1908, ix, 43.

16. Looss, A.: Einige Beobachtungen ueber die Infektion mit Ankylostoma duodenale von der Haut aus, Ztschr. f. klin. Med., Berlin, 1905, lviii, pp. 41-83.

ing trypanosomata on artificial media in the laboratory, and their work is helping to differentiate clearly the various forms of trypanosomiasis. Africa has no less than six different trypanosomal diseases, all of them very important, including nagana, dourine, galziekte, zonsfana, Gambian horse disease and human trypanosomiasis.

The recent memoirs of the Liverpool School of Tropical Medicine contain important papers on trypanosomiasis and sleeping sickness, especially on the method of diagnosis by aspiration of enlarged lymph glands.

AMERICA'S OPPORTUNITIES AND OBLIGATIONS.

That America is alive to the importance of research in tropical medicine the records of the last few years clearly show. But that in the immediate future she must do more than she has yet done is also clear. Strong appeals for work in tropical medicine are being made by medical men in various parts of this country, especially by those who live near the Gulf of Mexico.[17] Nothing is truer than the statement of one of them that "opportunity and obligation are indissolubly bound together," and he urges appropriations by the state both for instruction and research. The problems to be solved are large in their scope, the difficulties to be overcome are tremendous, but we may say with safety that they are not too great for American energy.

THE NEW HYGIENE.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON HYGIENE AND SANITARY SCIENCE, AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

DENSLOW LEWIS, M.D.
CHICAGO.

A real advancement of our civilization must imply additional knowledge and increased altruism. A progressive evolution should mean a new and more comprehensive understanding of the truth, a more thorough realization of responsibility and opportunity, a more earnest desire for achievement, a more rational endeavor to secure definite results, and, at the same time, a more consistent appreciation of the value of exact justice. Man changes by virtue of development and environment, but the primitive impulses are subject to but slight modifications in the course of ages, and the animal part of his nature remains essentially what it has always been. This fact is not necessarily deplorable. No victory is possible without an adversary, no success is worthy without struggle.

BIRTH OF THE NEW HYGIENE.

Notwithstanding all philosophic inquiry, the great scheme of life still remains unknown and perhaps unknowable, but the accumulation of knowledge and experience makes possible a readjustment of preconceived ideas, so that we understand, perhaps now better than ever before, the relative value of events which pertain to individual life and to the community at large. We are learning the truth; our estimate is becoming more exact of the real worth of character, of honesty, of wealth, of labor, of peace of mind, of freedom from care, of safety from danger, of relief from pain and of immunity from disease. We are also learning many new things, and in the light of recent developments in science and in experience our understanding of many well-known facts is acquiring a new significance which necessitates changes both of appreciation and of administration. Thus the new hygiene comes into being.

INTERDEPENDENCE OF ALL MEN.

In the science of hygiene the advance, both actual and potential, is most practical and effective. Sanitary science was called into existence when nomadic tribes coalesced and when primitive law determined that individual liberty does not permit the injury of another even inadvertently. This principle is the essence of the science. Sovereigns have sought to suppress it, capitalists have disregarded it. The poor, in their ignorance, have suffered as all must suffer who transgress the immutable law of Nature, and the rich, only too often, have fallen victims to the pestilence which originated in the slums and which a timely consideration might have prevented. Thus is demonstrated the interdependence of all men, and from a knowledge of the relations we bear, even unconsciously and in some instances unwillingly, one to the other, is evolved a true humanitarianism and a real religion.

THE NEED OF THE TRUTH.

The new hygiene is an exponent of the necessities of modern civilization in all details that relate to the health and happiness of the human race. To be effective it must be practical and to secure definite results it must, above all things, teach the truth. Here is the first matter of importance, the first essential of success, the chief object of all earnest endeavor. We must know the truth which shall make us free, and we must teach what we know. Just here, too, is encountered the first obstacle to an advance that has for its aim the amelioration of the human race, and in many instances in the past this obstacle has proved insuperable.

THE EXERCISE OF TOLERATION.

History shows that in the beginning of government might was right, in the beginning of religion the progress from phallic worship was gradual, and invariably the domination of ruler and priest was selfish, and often oppressive and tyrannical. It has taken centuries for the development of the idea of equity. It is only of late years that we begin to understand the meaning of human brotherhood and to appreciate in its full significance the necessity of liberty, the inadequacy of repression and the inestimable value of true education as a real measure of prophylaxis and as a practical means of right living. The tendency of the times is liberalizing. Our religion is not the only religion, nor does it embody all the truth. Our government is not perfect, nor are all other governments faulty. Indeed, it has been well said, and the present position of Mexico would seem to verify the statement, that a beneficent despotism is at times an admirable form of government. A great step in advance is taken when we are able to see beyond the confines of our individual methods of worship and government and are willing to acknowledge good in the methods of others. It needs no sect to prove the beauty of integrity, sobriety and decency of life. A true morality is the basis of every true religion; dogmas, creeds and ceremonials are but paths leading to a common goal. The welfare of the people should be the chief object of every government; the methods in use are but expressions of the average intelligence of the community applied to existing conditions. Our boast is that our form of government is truly representative. Alarming in the

17. Moore, J. T.: Tropical Diseases; Their Importance and the Opportunity for Their Study in Texas Imposes the Obligation to Provide the Facilities for Training Medical Men in Their Prevention, Diagnosis and Treatment. Texas Med. News, Austin, 1902-3, xii, pp. 437-444.

extreme are statements made by prominent statesmen that the accumulation of wealth and power in the hands of a few is a menace to our system of government, because it tends to permit the exercise of a despotism which subserves selfish ends and militates against the well-being of the great mass of our population. The new hygiene, taking cognizance of this important factor in our present-day civilization, as indeed it is bound to do in the case of all conditions that affect the welfare of humanity, gives evidence from its point of view and is prepared to show that the accumulation of great wealth is too often effected at the sacrifice of health, that the possession of millions is an incentive to dissipation, that morality, decency and probity apparently are cast aside when financial independence is assured, that disease and disgrace are not infrequently the sequelæ of affluence.

FUNCTION AND DUTY OF THE NEW HYGIENE.

What is to-day the function and the duty of the new hygiene? It should study the past to appreciate the necessities of the present and the possibilities of the future. To be most truly effective it will consider man in his entirety as he is, and not as preconceived notions would imagine him to be. It must be broad in its philanthropy, liberal in its charity, comprehensive in its effort. It must be an active, sensitizing force in the community. It must be more than a name or an abstract proposition. It must become a part—a most important part—of every life, for it has to do with the health and happiness of humanity, without which no life is satisfactory. The practitioners of medicine are the exponents of this philanthropy, the priests of this religion of health. To direct the destiny of mankind is their sacred privilege and their high office. Their influence more than that of any other element in our society must determine the future of the race. The greed of avariee must be restrained. The outbreaks of lawlessness must be condemned. The conditions of every community must receive thoughtful and serious consideration to the end that the beneficent influence of the new hygiene may prevail for the good of all humanity.

PHYSICIANS AND HYGIENE.

The profession is now organized. All petty differences are forgotten. The reunion is complete. Medical men can not be classed together as a unit to be extolled, maligned or condemned. They are human like other men, and there are among them examples of all types of the genus homo. They are subject to the same temptations and influences as other men, and they furnish their share—which is, I believe, a relatively small share—of the perverts and criminals of our society. Nevertheless, the great mass of the profession is honest and active in philanthropic endeavor. They must live, and usually the exercise of their professional talents must furnish the means of livelihood. But the spirit of modern commercialism has ensnared a comparatively insignificant contingent. The great majority remain members of a profession which is not primarily a business. They remain true to their principles and their ideals. They are servants of the people, striving to aid the ill and the injured, trying to protect the ignorant and innocent if need be even against themselves. Others receive their reward in the accumulation of property, the glory of renown, the acclaim of the public. The true physician has the approval of his conscience, the satisfaction of duty performed, the opportunity to do good. Who shall say that his recompense is inadequate?

SCOPE OF THE PROGRAM.

The program of this meeting of the Section on Hygiene and Sanitary Science shows to what an extent the profession of to-day realizes its opportunity to contribute its share toward the solution of the live topics of the times. Gathered together here from all parts of this great country are representative men and women, whose lives have been devoted to the cause of philanthropy. Some are active and energetic with the impulse of youth to excite to continued effort; others have passed the heat of the day, have borne the burden of the past, have known the indignity of misrepresentation, and have been privileged to suffer in the interests of humanity for the good of the cause. From Berlin, the great medical center of the world, come two distinguished and honored guests whose fame is international and whose teachings have done much to advance American gynecology and dermatology. From France and from New South Wales come highly valued contributions. From universities, from kindred professions, from the ranks of true philanthropy, and from the army and navy have come others, actuated by a common purpose—the desire to benefit mankind. Now shall we forget at this time the many men and women who in the past struggled and sometimes died for what they believed to be the truth. They did what they could, but in many instances even their names are now forgotten. Nevertheless their work has been effective, their influence remains. Their unselfish devotion to duty, their steadfastness in the faith, their demonstrated love for humanity will for centuries to come inspire the earnest worker along the lines of philanthropic endeavor to ever increased effort. Their work is done, but they did not live and die in vain.

WORK OF THE UNITED STATES.

In the great cause of humanity the United States has assumed a new responsibility and most cheerfully has taken up a share of the white man's burden. Our duty to the Filipinos is finding expression in determined educational effort, and in the exploitation of a new hygiene which will result in increased health and happiness for those in our charge. Our commercial interests with the far East become more intimate. It is our duty to see to it that the residents of the Pacific coast be not subjected to increased danger from bubonic plague in consequence of an increase in our business relations with the Orient. This subject is to-day presented for your thoughtful consideration.

PREVENTIVE MEDICINE.

The great white plague—tuberculosis—will also be considered at our meeting. The past few years have witnessed a wonderful effort along the lines of prevention and the results have been extremely satisfactory. If any one factor has exerted the greatest effect I believe it can truthfully be said that publicity regarding etiology, transmission of disease and rational hygiene is chiefly responsible for the enthusiastic desire of the public to know the truth and for the universal co-operation in prophylaxis which has prevailed and which has produced such wonderfully beneficent results.

PUBLICITY REGARDING THE VENEREAL PLAGUE.

There is another plague, which has been called the great black plague. It is the venereal plague. In some respects this is the most serious of all, for it produces among adults the greatest morbidity and as a disturbing element in our society it takes front rank. Originating, as it does usually but not always, from extramarital sexual congress, its consideration in the past has been

tabooed because a false modesty has prevented an exposition of the truth. With the success that has attended publicity regarding tuberculosis the past few years there has arisen in this country among eminent venereal specialists and true philanthropists the conviction that maudlin sentimentality no longer can prevent a consistent study of all etiologic factors and a dissemination among the public of the knowledge we already possess. In an earnest endeavor to produce definite results—that is, to limit venereal infection—facts must be recognized and the truth must be told. If this is done we must, first of all, admit the dominating influence of the sexual instinct which determines the perpetuation of the race. Why should we not admit this fact? This is the twentieth century, and education is said to be the palladium of our liberty. From the ignorant immigrant there is evolved in the second generation a real American. In appearance, in thought, in subjection to the law, in respect for our institutions, in love for our country, the child of the anarchist becomes one of us. If such a transformation as this can take place, how wonderful, then, are the possibilities if a true education will teach the dangers that confront the young and the ignorant, if the physiology of the whole body may be taught, if the study of man be made of chief importance in every curriculum.

THE CRIMES AGAINST WOMANKIND.

Intertwined with venereal disease and a result of perverted, premature or misdirected extramarital congress are the many crimes against womankind. The subject in its entirety is the most important that can engage the attention of the humanitarian. Here, also, we now believe, the policy of silence is responsible for the desolation of many a home and the ruin of many a girl. Ignorance, an etiologic factor in criminal abortion, illegitimacy and infanticide, must no longer be permitted to expose the innocent girl to unknown danger, but the new hygiene must intervene to protect her against the passion of the man and, if need be, even against herself.

I favor, as I have done for years, the teaching of the truth regarding ovulation, menstruation and conception. These subjects are among the most important matters the girl can know. I believe in teaching the boy regarding the sexual instinct, the possibility of continence, the dignity of virility, and his duty as a man, worthy of the name, toward woman. I believe in the advocacy of decency and the inculcation of principles of honor. This can not be done by keeping silent. It is only possible by speaking out plainly, by telling the truth.

INFLUENCE OF ALCOHOL.

In connection with the venereal plague and the crimes against womankind, affecting humanity in many important details, is the use of alcohol. It is necessary to know in no spirit of fanaticism, but scientifically and truthfully, to what extent the indulgence in alcohol is a disturber of our social conditions and an etiologic factor in disease. Moreover, we must know how and to what extent the young should be taught regarding the influence of alcohol on the health and happiness of our citizens. Extravagant statements will be received with mistrust. Prohibitory assertions will not often be heeded. Even the child knows that men who use alcohol may live to enjoy old age and may remain honorable citizens. The truth must be disclosed in a spirit of fairness.

To the solution of these momentous problems of our present civilization the new hygiene consecrates itself in all earnestness. We shall not to-day give the final answer nor say the last word. We will, however, do something. We will say what we think. We will express our ideas, but we will not deny others the right to differ with us. In a spirit of charity and toleration the new hygiene, through the kindly co-operation of distinguished and honest workers, whose experience entitles them to speak with authority, now offers, in the interest of humanity, a consideration of these most important topics.

92 State Street.

TUBERCULOSIS A SOCIAL DISEASE.*

S. A. KNOPF, M.D.

Associate Director of the Clinic for Pulmonary Diseases of the Health Department of New York City; Visiting Physician to the Riverside Sanatorium of the City of New York; Consulting Physician to the Sanatoria at Gabriels, N. Y., Scranton, Pa., and Binghampton, N. Y.

NEW YORK.

Were our great Osler in my place, he would probably in his own inimitable way, treat the subject as if it were a clinical case. He would begin with the etiology, then describe the symptoms, then the prevention and the curative measures, and lastly, the prognosis, the outlook. I will endeavor to carry out this idea as well as I can in my present address, also beginning at the bottom of the social ladder with the children.

Tuberculosis in infancy is indirectly due, on the one hand, to either a hereditary or an acquired predisposition, and directly, on the other hand, to a postnatal infection. Direct hereditary transmission of the tuberculous germ from parent to child is of exceedingly rare occurrence. When the father or mother is tuberculous the child may inherit a predisposition, which I like to describe as a physiologic poverty, giving the child less resisting power to the invasion of tuberculous diseases. The same condition may be produced when the child, instead of being raised at the breast of a healthy mother or wetnurse, is fed from a bottle. Such a child, unless the greatest care is bestowed on the artificial feeding, will almost invariably remain below par in health. The earliest postnatal infection takes place if a tuberculous mother or tuberculous wetnurse is allowed to give the breast to the child, or if she carelessly coughs over the child, kisses it on the mouth, or if, when feeding it, she puts the nipple of the milk bottle or the spoon alternately into her mouth and then into the baby's, in order to test temperature or sweetness. Furthermore, we must not forget the very probable source of infection through milk from tuberculous cows used as food for the infant.

Lastly, there is another source of infant infection, threatening particularly infant foundlings or deserted little ones, who have, at first, been inmates of foundling asylums or infant hospitals, and because of their not having done very well, have been given to the care of families residing in the country. In institution life there is, of course, always some danger of infection from a tuberculous infant to a healthy one; secondly, from tuberculous milk supply; and, thirdly, though more rarely, from tuberculous attendants. To my mind, the danger to the little ones given out to families living in the country is far greater than in an institution. Do you know that the majority of families, who make boarding babies a business, confide them to the care of

* Address delivered by invitation before the Laennec Society for the Study of Tuberculosis of Johns Hopkins Hospital, Baltimore, Nov. 23, 1905. Revised for publication in THE JOURNAL A. M. A., May 1, 1906.

the invalid of the family, who, perhaps, nine times out of ten, is a consumptive? The danger which arises to these little ones from such a consumptive attendant is obvious, particularly when we consider the usually inferior hygiene in such homes and the ignorance of the inmates of the nature and prevention of tuberculosis.

Before going any further, let us see what we may be able to suggest in order to combat these various sources of tuberculous predisposition and actual infection. The prophylaxis regarding the transmission of a predisposition to tuberculosis lies, of course, in preventing tuberculous individuals from marrying and procreating a predisposed race. It is not always easy to prevent the marriage of tuberculous individuals, for some marry without knowing that they are tuberculous, and some, who even know they are so, marry anyhow, no matter what the physician says, and there is no law to prevent them from doing so. In such instances, unfortunate as they are, the physician has a divine mission to perform in preserving the life of the tuberculous mother, which is always endangered by pregnancy, and preventing the transmission of a tuberculous diathesis to an innocent child. His mission is thus teaching prevention. I feel very strongly on this subject, but I know that there are many worthy men and women, inside and outside of the medical profession who differ with me. However this may be, I am willing to take the responsibility before the law and my God for each time I have taught a consumptive husband and wife not to procreate a tuberculous race.

Certain authors have made the statement that tuberculous parents confer on their children an immunity against the contraction of the disease. In twenty years of labor, exclusively devoted to tuberculous patients, I have not found the slightest evidence for this deduction; on the contrary, I have found children of tuberculous parents owing to their inherited physiologic poverty, anything but immune.

What can we do to have more breastfed and vigorous babies and thus a more vigorous race, a healthier type of American men and women, strong enough to resist a tuberculous invasion, or, for that matter, any other infectious disease, to which a weakened organism easily falls prey? For, after all, with all due respect to our beloved President, let me say that as a physician with, I may modestly claim, a somewhat large experience among the poor and poorest of the poor, the middle classes and also among the well-to-do, and as a student of sociology, as well as of preventive medicine, I am not for quantity but for quality.

I know I am in the presence of earnest students, who by careful study of the social, as well as the medical aspect of tuberculosis, are anxious to better the condition of their fellowmen. For this reason I speak plainly and am willing to give you the result of some interesting observations from my own practice which, I think, justify me in taking this position. It is invariably my custom when examining a patient to take down the family history, and one of the questions asked is, "how many children were in your family and were you born the first, second, or third, etc.?" In the majority of cases, when there is a large family, it is the 5th, 6th, 7th, 8th or 9th born who has contracted tuberculosis. This is to be explained, on the one hand, by physiologic reasons, the parents being in advanced life and less vigorous; on the other, by economic reasons, the later born children can not, because of increased expense, receive that particular care and that good and ample nourishment which was the privilege of the first ones to receive when the family was still small. No amount of wealth, no family prestige or social connection can give the child that inheritance which it receives when born of vigorous parents, nursed by its own mother and tenderly cared for until able to care for itself.

Let the mothers who, for the sake of pleasure and convenience, abandon the divine privilege of nursing their own children, change this unnatural practice. I feel certain that if they but knew the difference in the physical and intellectual makeup of their sons and daughters, if tenderly nursed by themselves, or when handed over to strangers to become bottle-fed babies, they surely would do differently. I know it will be said that not every mother can nurse her infant. This is true in some instances; but to the women, the future mothers of mothers, I like to say that it has been statistically demonstrated that if one generation of mothers fails to give their infants, and particularly female infants, food from the source which nature has designed, the next generation of mothers will have great difficulty in the natural feeding of their infants. The reverse has also been demonstrated and it has even been shown that when mothers, not fully able to supply the infant with food, have supplemented the artificial feeding as best they could with their own breast, their daughters have been able to fulfill the divine duty of nursing their infants, if not always entirely, at least to a much larger degree than the preceding generation.

Let us draw a lesson from this scientific fact which is corroborated by Nature's own laws. This lesson, once learned, the coming generation of American men and women may yet surpass all other nations in physical beauty, intellectual attainments, and moral strength.

Against postnatal infection, arising as aforesaid, from a careless mother, father or attendant, there is but one remedy, and that is education. Education of the prospective mother, education in all that appertains to the prevention of tuberculosis and other infections and preventable diseases, in schools, high schools, colleges, etc. Against the contraction of tuberculosis from infected milk our sanitary authorities should protect us. Regular tuberculin tests of all milch cows, inspection of stables, milk transportation and milk depots, should be practiced in all well-regulated communities. But we, ourselves, can protect our babies from infected milk by boiling or sterilizing the milk whenever we are not certain of its absolute purity. In this connection I can not help paying a tribute to Mr. Nathan Straus, of New York, who has done such grand and life-saving work by presenting to several communities large plants for sterilizing milk, to be distributed to the poor at cost.

In institutions for infants, isolation of tuberculous children should be practiced as far as possible. No tuberculous individual should be employed in a hospital to take care of infants, and no child should be given into the care of a family unless the hospital authorities are absolutely certain that the infant will not be attended by a consumptive.

We come now to tuberculosis in childhood, which may likewise be contracted from either tuberculous parents, tuberculous relatives, friends or boarders. A tuberculous individual living in such a home, particularly if it is small and unhygienic, need only be careless with his expectoration, and the little child, crawling on the floor, is sure to come in contact with it, touching everything with its fingers, which are often put into its mouth afterwards, or scratching its delicate skin with the infected nails. If the tuberculous sputum has had a chance to dry and become pulverized, the bacilli-laden

atmosphere, always heavier in the lower strata of the air, is sure to be inhaled by the little one. You have thus a source of infection which may cause a tuberculosis from ingestion, from inhalation, and from inoculation; in other words, the child has a chance of having its intestines, its lungs and its skin tuberculously infected at the same time.

The remedy for this lies again in education—education of the tuberculous and education of those living with them.

There is one more source of infection arising in children of which I must speak and which is often overlooked by our hygienists and social workers. I refer to the life of little ones in day nurseries. These institutions should be most carefully watched and supervised, in fact, I firmly believe that not only tuberculosis, but diphtheria, measles, and other children's diseases would be greatly diminished if our sanitary authorities would insist on a daily medical inspection of the children in these nurseries. The isolation and particular watching of tuberculous children could then be easily accomplished.

Before taking up the third phase, "tuberculosis during the school age," I would like to say one word more in regard to the management of the predisposed child, when it no longer receives the healthy mother's or foster mother's breast. In the eyes of the utilitarian or materialist, or, perhaps, also in the eyes of a certain class of sociologists, the question, how to raise a child predisposed to tuberculosis, might seem a paradox. In defense of our views in this respect, let me repeat, that while in my humble opinion it belongs to the highest mission of the physician to prevent the procreation of a tuberculous race, when in spite of his warnings and teachings, a child is born of tuberculous parents, it is his most sacred duty to do all in his power to save the child's life and, if at all possible, make it strong, healthy and vigorous; and we physicians should use the clinical experience of the best authorities to guide us in this respect.

Predisposed children are almost all born bad eaters. They will have a disinclination to many kinds of food and be often unwilling to eat when they should. Only by beginning at the earliest possible period, with a firm discipline, can these children be made to eat as other healthy children would. The old practice of folding our hands, resigning ourselves to fate, and saying that because the father or mother had tuberculosis the child must also be doomed, with our present knowledge of phthisiology, is thoroughly reprehensible. Sensible parents, even if tuberculous, can often be very helpful in combating a hereditary predisposition in their children, if able to give them proper physical and intellectual care and training, combined with good food, much outdoor life and sensible dress.

In the homes of the poor such an ideal training of the child is not always easy. French phthisiotherapeutists and philanthropists have realized the importance of caring for the offspring of tuberculous parents who would have to live in a *milieu tuberculeaux*, and have a special organization, called "Oeuvre de Prevention de l'Enfance contre la Tuberculose." This work was started by my esteemed master and teacher, the great children's physician, Professor Grancher, of Paris, in November, 1903, by a large personal gift from Mrs. Grancher and himself. It consists, in the main, in removing the children of poor tuberculous parents from the center of infection, either to good, sanitary private homes in the country or to seaside or inland sanatoria. There is no time limit; the children may stay away until, in the opinion of the supervising physician, they are strong enough to resist a tuberculous invasion. The removal of these children is, of course, always done with the consent of the parents. The first complete report of the work of this society was given out at the recent Tuberculosis Congress at Paris, and showed most gratifying results.

What are the predisposing causes of tuberculosis during the school age? Badly ventilated school rooms, overtaxing of the child's brain to the detriment of its physical development, unhygienic dress, particularly of school girls and in the poor, underfeeding, insufficient clothing and bad housing, often combined with child labor in workshop, factory and even at home.

What are the direct causes of tuberculous infection during school life? Close association with tuberculous fellow pupils; very much more rarely the carelessness of a tuberculous teacher.

To describe the various sources of infection during school life I believe I can not do better than to repeat here the little list of rules[1] which I like to see school teachers give to their pupils, and which might serve as an alphabet in the prevention of tuberculosis.

1. Every child and adult can be helpful in fighting consumption. School children can help by complying with the following rules:

2. Do not spit except in a spittoon or a piece of cloth or a handkerchief used for that purpose alone. On your return home have the cloth burned by your mother or the handkerchief put in water until ready for the wash.

3. Never spit on a slate, floor, sidewalk or playground.

4. Do not put your fingers in your mouth.

5. Do not pick your nose or wipe it on your hand or sleeve.

6. Do not wet your finger in your mouth when turning the leaves of books.

7. Do not put pencils in your mouth or wet them with your lips.

8. Do not hold money in your mouth.

9. Do not put pins in your mouth.

10. Do not put anything in your mouth except food and drink.

11. Do not swap apple cores, candy, chewing gum, half-eaten food, whistles, bean blowers or anything that is put in the mouth.

12. Peel or wash your fruit before eating it.

13. Never cough or sneeze in a person's face. Turn your face to one side or hold a handkerchief before your mouth.

14. Keep your face and hands and finger-nails clean; wash your hands with soap and water before each meal.

15. Do not kiss any one on the mouth or allow anybody to do so to you.

16. When you don't feel well, have cut yourself or have been hurt by others, do not be afraid to report to the teacher.

17. Be just as careful and cleanly about your person at home as in school.

18. Clean your teeth with toothbrush and water, if possible, after each meal, but at least on getting up in the morning and on going to bed at night.

19. Learn to love fresh air and learn to breathe deeply and do it often.

Another good method of teaching school children the prevention of tuberculosis has been inaugurated in France, in a most ingenious way. My distinguished teacher, Professor Letulle, suggested to the minister of education of France that the coverings of the books used by school children might serve as a means of instructing the pupils concerning the prevention of tuberculosis. He, himself, wrote two pages of instructions for the pur-

1. My inspiration to compile this set of rules I received from a little leaflet which I came across during my visit at Providence. I have since learned that they were written by Prof. Theobald Smith of Harvard, who wrote them at the suggestion of Dr. Chapin of Providence, R. I., and I am anxious to give these gentlemen credit for their work. I have ventured to make some additions and some changes in order to cover the entire ground of first principles in the prevention of tuberculosis.

pose. The outside cover represents the exterior of a sanatorium, and the text is illustrated by a number of pictures. Permit me to give you here the translation of the subjects which are treated in a most concise and comprehensible way on these two pages:

"The air we breathe and the respiratory organs."
"Tuberculosis decimates humanity."
"Tuberculosis is contagious."
"Tuberculosis and its microbe."
"Robert Koch, the discoverer of the microbe of tuberculosis (consumption)."
"Tuberculous infection from man to animal and from animal to man."
"Tuberculosis can be prevented."
"Sure way to prevent consumption."
"Never use strong drinks."
"Tuberculosis can be cured."
"Tuberculosis is a social disease."

To remove all possible causes which might render a child susceptible to the invasion of tuberculosis during school life, we must appeal to school boards, superintendents, teachers, and school physicians to do all in their power. Permit me to quote here what I said on this subject in an address delivered last year before the American Academy of Medicine. The school board, or board of education, as it is called in some localities, should, in choosing a sight for a school, bear in mind that, whenever possible, a somewhat elevated region, where the streets are wide and the surrounding houses not too high and not too close together, and where the traffic is not too heavy, should be selected in building a public school. About the construction of a modern and model school house much could be said. The essentials of such construction are well known to all sanitarians and up-to-date architects. In relation to the prevention of tuberculosis, I would suggest only a few points. Where the site or locality does not permit of having a large playground, a roof garden, which can be covered in winter, is absolutely necessary. Instead of our American windows, which can only be opened to one-half of their extent, I should wish to see French windows in every school house, or windows sliding in the wall, or those that turn on a pivot, all of which permit twice the amount of foul air to go out and of good air to come in, that our ordinary windows do. Heating and general ventilation of school rooms should, of course, be of the most improved kind. The walls and woodwork of school rooms should be plain, to make the accumulation of dust virtually impossible and the cleansing easy. All corners should be rounded off and the walls painted. The interior equipment—that is to say, the school furniture, benches and desks—should be so arranged that they can be easily moved or folded together, so that a thorough cleaning of the floors is made possible after each daily session. It goes without saying that the drinking cup should be replaced by the hygienic drinking fountain, which makes the use of a cup unnecessary, and thus eliminates one method of transmission of microbic diseases.

Every public school should have a well equipped gymnasium and a swimming tank with constantly running fresh and salt water, warmed to a suitable temperature in winter. Each pupil should be given the opportunity to bathe several times during the week. To learn to swim should be made obligatory and every class should be supervised by a competent swimming master. Leaving aside the great hygienic gain to be derived from such an installation, especially when the pupils are recruited from homes where bath rooms are rare and where regular bathing is considered superfluous, the swimming lessons would be of value to every boy and girl, and in case of such disaster as the recent Slocum tragedy there would be a much smaller loss of life. There is hardly a college in existence in America where the gymnasium and the swimming tank do not form an important part of the equipments, and a college without them would surely suffer in prestige. The public school, where the children of the masses receive their education, should not be behind the private college in its equipments.

I am convinced not only that the public school, which has a well-equipped swimming establishment and which makes regular bathing and instruction in swimming obligatory for every pupil, will have fewer cases of infectious and contagious diseases, particularly scrofula and tuberculosis, but that the intellectual and moral status of its pupils will also be higher.

The duties of the superintendent of a public school in the prevention of tuberculosis are manifold. In arranging the curriculm he should bear in mind never to push the intellectual training to the detriment of the bodily development or physical welfare of the children in his school. There has been, and is yet, altogether too much overtaxing of the brain and the nervous system of our boys and girls in public and also in private schools. Our gynecologists and nerve specialists have given us enough illustrations of the detrimental effects of the overtaxing and overstraining of the mind and the nervous system of young girls at the age of their development into womanhood. Many of our college pupils, male and female, do not get enough rest, they are overworked and underslept. Those of us who have given tuberculosis a somewhat closer study also know that it is often at the period of entering puberty that the predisposed individual becomes most susceptible to the invasion of the bacillus, particularly when additional strain is put on the physical or mental system. This holds good of both sexes. A judiciously divided curriculum, intercepted with gymnastics, swimming and as much outdoor instruction as possible, would seem to me a most important factor in the prevention, not only of tuberculosis, but of all indoor diseases and nervous troubles.

By outdoor instruction I mean not only botanizing tours and geological excursions, but also outdoor singing and outdoor recitation. In my textbook on tuberculosis[2] (as well as in my article on the subject in the Twentieth Century Practice of Medicine[3]), I quoted Barth, of Koslin, who had made a careful study of the effects of singing on the action of the lungs, on diseases of the heart, on the pulmonary circulation, on the blood, the vocal apparatus, the upper air passages, the ear, the general health, the development of the chest, and the activity of the digestive organs. As a result of his studies he came to the conclusion that singing should be considered one of the exercises most conducive to health. I am willing to go even further and say that outdoor singing and outdoor recitation, when the weather is neither too windy nor too cold, is a most excellent means of preventing the development of pulmonary diseases. You have all heard of the numerous cases of open-air speakers, such as political campaigners, evangelists, etc., having developed their respiratory capacities and strengthened their lungs as a result of their peculiar profession. Some even profess to have been cured of consumption as a result of

2. "Pulmonary Tuberculosis, Its Modern Prophylaxis and the Treatment in Special Institutions and at Home." P. Blakiston's Son & Co., Philadelphia.
3. Twentieth Century Practice of Medicine, Vol. xx, p. 230

their outdoor speaking. The German military authorities, who have the reputation of instituting all exercises which tend to prevent disease and invigorate the soldiers, have of late much encouraged singing during the marching of the troops.

To every class in the public school opportunity should be given in fairly good weather to have recitation and singing at least once a day in the playground, adjoining garden, or roof garden. Breathing exercises should, of course, be instituted for at least a few minutes at a time during recess for all classes. This should be done either in the open air or when the windows are wide open, and a number of times each day. The simple breathing exercises which I recommended as a prevention of pulmonary diseases, I have published and illustrated in my books, as well as in various articles, and also in my popular essay on tuberculosis,[4] and I do not feel that it will be necessary to describe them here again. The selection of rational textbooks on physiology and general hygiene must be left to the good judgment of the board of education and the superintendent.

The duties of the superintendent and those of the school teacher are, of course, interdependent. The former makes out and supervises the curriculum, the latter carries it out. The lessions in physiology and hygiene must be adapted to the age and understanding of the pupils. The school teacher should, of course, be familiar with all the practical and feasible methods in vogue in regard to the prevention of tuberculosis as an infectious and communicable disease.

Before closing the paragraph on the prevention of tuberculosis during school age, I must call your attention to the term scrofulosis, which really means tuberculosis in a milder form, and which is particularly frequent among school children in the districts of the poor and is the result of bad housing and particularly of underfeeding. To prevent scrofulosis—the milder form of tuberculosis—I must revert once more to the duties of the school board, for what can the teacher or superintendent do with the underfed children of the poor attending our public schools? Breathing exercises will not supplement their lack of food, but, if anything, they will increase the appetite of the pupil, and an apple and a cracker are not enough for a growing boy or girl and altogether too little to make their cheeks red. I would, therefore, suggest to the board of education a philanthropic enterprise in which the generous and goodhearted people of every city would most gladly join. It may thus become possible to provide these halfstarved little ones with a luncheon of a few meat sandwiches and one or two glasses of good milk, and I am convinced that fewer will develop tuberculosis and scrofulosis, and they will do better work at school and at home. To avoid a pauperizing tendency a few pennies may be charged for these lunches. If I have been well informed, I believe this practice is in vogue in Boston, Milwaukee and a few other cities. I do not know whether statistics have been kept regarding the results, but I know that in some European cities the persistent administration of a nutritious luncheon resulted in the physical and intellectual improvement of the children and a considerable gain in weight. You see thus that in school children, tuberculosis has a very decided social aspect.

One more word on the duties of the school physician, and, of course, every school should have one or several. These duties should consist in the constaut supervision of the sanitary condition of the school buildings; regular visits to the gymnasium and the swimming school, and, lastly, the most important function of all, the monthly weighing of the pupils and the periodic examination of the chests of all pupils, teachers and employés of the school. The weeding out of all such individuals as might constitute a source of infection, or those whose treatment becomes an imperative necessity, and the advice to be given to parents of a tuberculous child, will make the school physician a most important factor in the solution of the tuberculosis problem.

It goes without saying that the school physician, who must devote so much time to this duty in order to do it faithfully, should receive ample remuneration for his service.

I do not wish to have it understood that our public schools and kindergartens are the only institutions which need sanitary supervisions. Boarding schools, parochial schools, seminaries, etc., need often the watchful eye and frequent visits of a trained sanitarian just as much, if not more, in order to prevent the spread of tuberculosis and other infectious diseases.

Before leaving the subject of tuberculosis in schools it is but right that we should devote a few earnest words to the subject of "What to Do with the Tuberculous School Child and the Tuberculous School Teacher." Permit me to quote here from a recent address which I delivered before the teachers of the public schools of New York at the occasion of the American Tuberculosis Exhibition held under the auspices of our national and our New York anti-tuberculosis associations. A number of states have taken very radical measures in this respect. My interest in the subject was first aroused by a letter received last February from my friend, Dr. Herbert Maxon King, the physician-in-chief of the Loomis Sanatorium at Liberty. He sent me a clipping announcing the decision of the board of education of Jersey City that no teacher having consumption would hereafter be allowed to teach in a public school. In commenting on this decision, Dr. King said: "It occurs to me that if such action shall be taken on the part of the various boards of education throughout the country much injustice is going to be done." Since then the states of Iowa[5] and Illinois[6] have joined the list of those that exclude tuberculosis from the public schools, and these boards have issued an order notifying the superintendents of schools throughout the state to exclude all teachers, pupils and employés suffering from the malady. They exclude the teacher, and they exclude the child, and I approve of this decision, but I must ask, Have those states which exclude the tuberculous teacher, who nine times out of ten has contracted this disease in the performance of his or her duty, provided a pension for her, so that she can devote a year, perhaps more, to doing nothing but getting well? Or has she been able to accumulate enough means to live the rest of her life without care in case she is not entirely cured and readmitted in the school? I doubt if this will be the case in many instances.

A French commission was recently appointed to look into this matter and they recommended that all tuberculous school teachers employed in the Republic of France should receive for at least three years a sum sufficiently large to provide for proper sanatorium treatment at home, and this without losing the right to be pensioned later on.

4. "Tuberculosis as a Disease of the Masses and How to Combat It." M. Firestack, 139 East Seventeenth St., New York, Publisher.

5. According to the Med. Record, Nov. 25, 1905.

6. According to the Med. News, Dec. 30, 1905.

And what is done in our American schools for the children who are tuberculous? How many seaside or inland sanatoria for tuberculous children have we where the child can become cured of its infirmity and concomitant with its physical improvement receive its intellectual education? We in the great city of New York have just one seaside sanatorium for tuberculous children which fulfills this mission, but its capacity is limited to 54 beds, and we have in New York about six thousand tuberculous children needing sanatorium treatment.

I approve of weeding out tuberculous children and the tuberculous teacher from our public schools, but I also believe that it is our most sacred duty to provide for these tuberculous teachers and tuberculous children. Let us multiply our sanatoria for children and employ in them as many teachers as we can from the unfortunate ones who have contracted tuberculosis.

Now, what are we to do with the rest, who can not find employment in these institutions? One of our most beloved, large-hearted and generous philanthropists and distinguished fellow-townsman, Mr. Andrew Carnegie, recently created a fund to pension teachers in academic schools who are beyond a certain age and no longer able to earn their livelihood. Mr. Carnegie very justly surmised that our college professors are, as a rule, too poorly paid to accumulate a sufficient fortune to live in comfort during their reclining years. This is a grand and beautiful philanthropy, and I sincerely hope that the example of Mr. Carnegie may be emulated by other philanthropists; but I hope and pray that in the future gifts for pensioning educators our ordinary school teachers will not be forgotten. They must have served at least twenty years before they are entitled to any pension, and then it is but small.

Then they, too, have often very little chance to accumulate enough to enable them to live in comfort during old age; and I am certain that when misfortune strikes one in the prime of life, when the school teacher contracts tuberculosis and must leave the school, nine times out of ten she will have very little or no money saved. Yet it costs money to provide for at least a year in which to cure a tuberculous patient, and it requires even more to make him comfortable when he is not curable, but is forced to live in idleness for two years or more. Let the municipality which excludes the tuberculous teacher and the tuberculous child provide school sanatoria for the children and, whenever possible, employ therein the tuberculous teachers in the earlier stages of the disease. Let our good and generous fellow citizens who love to devote part of their wealth to the relief of the suffering and misery of their fellowmen remember in their benefaction the school teacher who has had the misfortune to contract consumption. Whether such a benefaction be in the shape of a special sanatorium for tuberculous school teachers or a special fund whereby these school teachers can be sent to existing sanatoria, or be treated at home, is immaterial.

What need have I, before an audience of this kind, to speak of the baneful influence of child labor? A few states of the Union have endeavored to do their best in enacting and enforcing laws against this shameful practice. But there is yet much to be done. Let all American legislatures understand that nothing predisposes a child's delicate and growing organism to tuberculosis more than the great physical strain produced by hours, and often long hours, of indoor labor, which time the child should spend in play outdoors. Child labor makes physical and nervous wrecks of normal children, and because of its influence on the nervous system of the growing boy and girl I hold child labor responsible for a good deal of alcoholism among our young people.

President Roosevelt, in his recent message at the opening of the last session of Congress, recommended in strong terms a model child labor law, in order that Congress might set a worthy example to the states in which it has no power to legislate on this subject, by wise and discriminating legislation for the District of Columbia, over which it has the necessary power.

Permit me to read to you a few suggestions from an appeal issued recently by the National Child Labor Committee,[7] which, I think, speak for themselves:

> We request the friends of the 29,000,000 children under 16 years of age in the United States, for whose industrial guardianship and for the protection of whose rights to healthy physical development, education and leisure the national committee is organized, to co-operate in recommending this bill to the favorable attention of their members in Congress. It will mean much for our cause in every state to have at the national capital a reasonably strong and fair law on the subject of child labor. Members and friends of local child-labor committees, of educational, charitable and philanthropic societies, of women's clubs and all other organizations interested in this movement are earnestly requested to write at once to their respective senators and members of Congress, sending them, if possible, the inclosed copy of the bill to be presented and urging the passage of this bill.

There is, of course, also a kind of child labor at home for which school superintendents, teachers or parents are alone responsible. When the child is given too many lessons to study at home so that it must rise very early or can only retire at a late hour, the result on its nervous and general system is the same as child labor performed in a factory or shop. Like the overworked college student above referred to, those children do not sleep enough. They are habitually in the want of sleep. Children up to the age of 16 should have nine hours' sleep in summer and nine to ten in winter. This certainly offers a field for reform in arranging the curricula of our public schools.

One of the saddest forms of child labor is the one imposed on the child of thoughtless parents who, in addition to the school lessons at home, expect their children to devote nearly all their time, which should be spent in play or recreation, to helping in the household.

I have seen so-called "little mothers" in our New York tenement homes who were veritable heroines and who sacrificed their little lives on the altar of devotion to their little brothers and sisters and in obedience to their thoughtless and often cruel parents. I have seen a widower leaving a 10-year-old daughter to take care of three smaller children, one a babe, and expecting her to do the cooking besides. Is it a wonder that such a child can not resist the invasion of the tubercle bacilli so prevalent in the crowded tenement districts of our large cities?

To treat the children of the poor when they are afflicted with tuberculous and scrofulous diseases, the seaside sanatorium, as has been said, is the ideal place, but inland sanatoria will also answer the purpose if the coast is at too great a distance. It goes without saying that a school should be attached to every sanatorium for children so that the intellectual training keeps pace with the physical improvement of the sanatorium inmate. The results obtained in these children's sanatoria are surprisingly good; they vary from 50 to 75 per cent. of cures.

7. This appeal was accompanied by a copy of a most excellent bill proposed to regulate the employment of child labor in the District of Columbia.

The great social and economic advantage resulting to a community which takes care of the tuberculous and scrofulous children of the poor must be obvious. Such a sanatorium not only spares the community the expense of taking care of more consumptive adults, because of the cures accomplished among the children, but it lessens the number of crippled, deformed and helpless individuals. Every case of Pott's disease cured, means a hunchback less in the world; every case of tuberculous hip or knee joint cured means a well person and a bread winner, instead of a cripple who is likely to become a pauper.

The dangers of contracting tuberculosis during the age of adolescence in college or high school are about the same as those during the school age. I have already referred to the detrimental effects of overtaxing and overstraining the mind and nervous system of young girls. The young man choosing a college career should bear in mind that, while a reasonable amount of athletics are conducive to health, physical overtaxing is a strong predisposing factor to tuberculosis, and, strange as it may seem, when the overtrained athletic contracts tuberculosis, the disease more frequently takes an unfavorable turn than in other instances. I have examined a number of men, recently from college, who had distinguished themselves as athletes, and, as a rule, I had the painful experience of finding them in worse condition to battle with the disease than individuals who had never practiced athletics. The remedy for all this lies, of course, with the college authorities who should regulate the sports so that they may become a benefit and not a detriment to the students.

The young man or woman who is obliged to go to work in a shop, factory, office or store in order to make a living has the same risk of contracting tuberculosis as the adult. However, even close contact with a tuberculous individual is not dangerous if the latter is trained to take care of his tuberculous sputum and is careful to hold his hand or handkerchief before his mouth when coughing, even when he does not expectorate, so as to prevent the droplets or the possibly infectious spray from doing any harm. Right here I wish to state distinctly that the conscientious consumptive is as safe an individual to associate with as any healthy person. To treat the conscientious consumptive as an outcast is cruel and most inhumane, and phthisiophobia, that is to say, the exaggerated fear of the presence of the consumptive, is a disease which all, social workers and physicians, must combat. Let us teach the masses and the individual consumptive the effective and yet so simple means of preventing the dissemination of consumption through carelessness. Teach them never to expectorate except in a proper receptacle, never to cough unless it is really necessary, and then always to hold the handkerchief or the hand before the mouth. Let our sanitary authorities, our railway and street car companies see to it that in every public place where people congregate a sufficient number of well-kept spittoons are provided. Let them, furthermore, change the wording of the formula. "Don't spit," which, as we know only too well, is frequently disobeyed, to the formula, "Spit here."

Our factories, workshops, the notorious sweatshops, our offices and department stores, and smaller ones also, our railroad stations and trains should receive the visits of sanitary inspectors so that it may be assured that the men and women employed or congregating in them are reasonably protected from the diseases arising through bad ventilation and other insanitary conditions.

To improve the hygiene in the homes of the poor and prevent as far as possible the propagation of tuberculosis through dust, I beg leave to reproduce here some rules which, on the suggestion of our distinguished co-worker, Prof. T. Mitchel Prudden, were issued by our New York Committee on the Prevention of Tuberculosis.

SWEEPING AND DUSTING.

When you sweep a room raise as little dust as possible, because this dust when breathed irritates the nose and throat and may set up catarrh. Some of the dust breathed in dusty air reaches the lungs, making parts of them black and hard and useless.

If the dust in the air you breathe contains germs of consumption—tubercle bacilli—which have come from consumptives spitting on the floors, you run the risk of getting consumption yourself. If consumptives use proper spit-cups and are careful in coughing or sneezing to hold the hand or handkerchief over the nose and mouth so as not to scatter spittle about in the air, the risk of getting the disease by living in the same rooms is mostly removed.

To prevent making a great dust in sweeping, use moist sawdust on bare floors. When the room is carpeted, moisten a newspaper and tear it into small scraps and scatter these over the carpet when you begin sweeping. As you sweep, brush the paper along by the broom and they will catch most of the dust and hold it fast, just as the sawdust does on bare floors. Do not have either the paper or the sawdust dripping wet, only moist.

In dusting a room do not use a feather duster, because this does not remove the dust from the room, but only brushes it into the air so that you breathe it in, or it settles down and then you have to do the work over again.

Use soft, dry cloths to dust with, and shake them frequently out of the window, or use slightly moistened cloths and rinse them out in water when you have finished. In this way you get the dust out of the room.

In cleaning rooms you should remember that dust settles on the floors as well as on the furniture, and is stirred into the air we breathe by walking over them. You can easily remove all this dust in rooms which have bare floors, in houses, stores, shops, schoolrooms, etc., after the dust has settled, by passing over the floor a mop which has been wrung out so as to be only moist, not dripping wet.

One of the strong predisposing factors to an acquired tuberculosis in adult life is always the fearful scourge, alcoholism. How to combat this is in itself a problem. I confess that, to my mind, the only rational way is to follow the example of Norway and some of the Cantons of Switzerland by making the manufacture and sale of alcohol a government affair. Experience in these countries has shown that through such means alone have they been able to reduce alcoholism and its consequent evils—disease, crime, poverty, misery, and want.

Educational propaganda regarding alcoholism will also be helpful. Concerning tuberculosis it should be impressed on the masses that alcohol, in whatever form it may have been administered, has never been either a prevention or a cure for consumption. Since we have not yet any laws prohibiting the sale of patent preparations and proprietary medicine containing a large percentage of alcohol and other deleterious substances under the guise of medicine, we must educate the people to the true state of affairs.

For the benefit of the statesman, legislator and the clergyman who recommend, the public press which lends its columns to advertise, and the people who consume, "patent medicines," I would like to make a few quotations from important authorities on the subject:

Mr. Adams, in his second article[8] on "The Great American Fraud," entitled "Peruna and the Bracers," has this to say on the manufacture of Peruna:

8. Collier's Weekly, Oct. 28, 1905.

Any one wishing to make Peruna for home consumption may do so by mixing half a pint of cologne spirits, 190 proof, with a pint and a half of water, adding thereto a little cubebs for flavor and a little burned sugar for color. Manufactured in bulk, so a former Peruna agent estimates, its cost, including bottle and wrapper, is between 15 and 18 cents a bottle. Its price is $1.00. Because of this handsome margin of profit, and by way of making hay in the stolen sunshine of Peruna advertising, many imitations have sprung up to harass the proprietors of the alcohol-and-water product. Pe-ru-vi-na, P-ru-na, Purina, Anurep (an obvious inversion), these bottled and labeled to resemble Peruna, are self-confessed imitations. From what the Peruna people tell me, I gather that they are dangerous and damnable frauds and that they cure nothing.

What does Peruna cure? Catarrh. That is the modest claim for it—nothing but catarrh. To be sure, a careful study of its literature will suggest its value as a tonic and a preventive of lassitude. But its reputation rests on catarrh. What is catarrh? Whatever ails you. No matter what you've got, you will be not only enabled, but compelled, after reading Dr. Hartman's Peruna book, "The Ills of Life," to diagnose your illness as catarrh and to realize that Peruna alone will save you. Pneumonia is catarrh of the lungs; so is consumption. Dyspepsia is catarrh of the stomach. Enteritis is catarrh of the intestines. Appendicitis—surgeons, please note before operating—is catarrh of the appendix. Bright's disease is catarrh of the kidneys. Heart disease is catarrh of the heart. Canker sores are catarrh of the mouth. Measles is, perhaps, catarrh of the skin, since "a teaspoonful of Peruna thrice daily or oftener is an effectual cure."

Prof. A. Jacobi of New York City, my venerable friend and the teacher of thousands of American physicians for the past fifty years, has come to the conclusion, from a careful estimate, that the American people spend an average of $200,000,000 a year for "patent medicines."

Prof. Oliver T. Osborne of Yale, in his address[9] on "The Scourge of Nostrums, Etc.," expresses himself regarding the public press and "patent medicines" as follows:

> Were it not for the daily papers and periodicals this enormous sale of "patent medicines" could not take place. This autosuggestion of disease and disease symptoms, and then the positive promise of cure causes frail human nature to give the stuff a trial, and as is expected, the narcotic and the alcohol gives a taste for more.

According to a statement published in connection with Mr. Adams' article, Dr. Ashbel P. Grinnell of New York City, who has made a statistical study of "patent medicines," asserts as a provable fact that "more alcohol is consumed in this country in 'patent medicines' than is dispensed in a legal way by licensed liquor venders, barring the sale of ale and beer."

Next to alcoholism, insanitary tenements and lack of air and light are the strongest predisposing factors to tuberculosis. The building of model tenement houses where the honest laborer may have a cheerful home at a reasonable rate, the creating of tenement house commissions in large and smaller cities to compel greedy contractors to remodel insanitary tenement houses and build only sanitary ones is one way of combating this evil. Not enough praise can be bestowed on men like Mr. Phipps and others who devote their wealth to the building of sanitary homes for laborers. These are certainly more needed than monuments, libraries, general hospitals, and even churches. To me the man who builds such homes which render thousands of American laborers and their families happy serves his Creator better than the builder of cathedrals and churches, for the former serves God by serving his fellowmen, and if we are to believe the beautiful story told us of Abu ben Adhem

> 'Midst those whom love of God has blessed
> The lover of his kind leads all the rest.

I have always maintained that if we can give the honest laborer a cheerful home and a wife who knows how to cook a good, plain but appetizing meal the saloon with its bright lights will have less attraction to him and alcoholism will be indirectly combated. When duty calls me into the houses of the poor, and I see the dingy, untidy rooms of the laborers and the woman unskilled in the plainest household duties, getting the meals from the nearest delicatessen store instead of preparing them herself, I do not blame the laborer when, instead of returning directly home from his occupation, he enters the saloon to take a drink, thinking it will cheer him up. The laborer's wife who, after leaving school, had to enter the workshop or store, and thus never had a chance to learn to cook or learn the first principles of housekeeping, is not to blame for her ignorance, but society is, and we should seek to remedy such conditions by not allowing our girls to leave the public school without having learned to be housekeepers and cooks.

It would, furthermore, pay economically and socially if our philanthropists and communities would establish places of amusement where a man might go with his family to sepnd his leisure time, partake of non-alcoholic drinks and enjoy good music or other healthful amusement. All this will help to strengthen family ties, prevent alcoholism, and indirectly prevent tuberculosis and other diseases.

In most of our cities we need more parks, large and small, more playgrounds, more recreation piers and public roof gardens. These places represent the lungs of a great city; without them a city can not be in a healthy condition. Sanitary houses, public baths and healthful places for amusement are, however, not only necessary for our city population, but are equally important for people living in the country. Home sanitation, love for fresh air, general and personal hygiene, must be taught to the country people as well. They have the good air of the country, but how often do they shut themselves up in badly ventilated rooms, being more afraid of fresh air than even city people, fearing the little draught—the only way of purifying foul air—as if it was disease producing. The lack of healthful amusement in the country is the cause of so many young people migrating to the cities. Here is a new field of philanthropy. The man who, by creating a system of healthful amusements for country people, can stop the ever-increasing migration to the cities, or perhaps even induce laboring families to migrate from on crowded cities to the country, will bestow a lasting benefit on present and future generations.

If we wish to diminish tuberculosis among the masses, we must pay our laborers in city and country reasonable wages so that they can live decently, eat sufficient good and nourishing food, and provide food and shelter for themselves and families for a time when work is lacking. Labor bureaus should be established everywhere by states, cities and smaller communities. There should be constant interchange between all of them so as to regulate the demand and supply as far as practicable. Then the abnormality that one section of the country suffers from the want of laborers while another has an army of "the unemployed" will be a thing of the past. Some man or woman having been cured of pulmonary tuberculosis may find outdoor employment through such an

9. "The Scourge of Nostrums and Irregular Practitioners," The Journal A. M. A., July 2, 1904

exchange which will insure his or her recovery and guard against a relapse which often follows from a return to insanitary environments. Our federal government could materially help these labor exchanges in their grand work by arranging for cheap transportation whenever it seems expedient to do so.

In relation to employment, travel and transportation, there comes to my mind another means of contagion which I consider dangerous, and that is dust. We are in the habit of calling tuberculosis a house disease, and well it deserves this name, but it might also be called a dust disease, and we will not be able to eradicate tuberculosis if we do not find means to lessen the amount of dust we breathe. Even so-called non-infectious dust is apt to irritate the pulmonary surface and thus make the respiratory system more receptive to the invasion of the bacillus. The dust uselessly raised in our factories and workshops could be materially lessened by automatic dust-collectors. The cleaning of such establishments, and also department stores, churches, theaters, concert halls, offices, schools, railway stations and railroad and street cars, should not be done in the old-fashioned way with a broom, but by the modern electric-exhaustion process now in use in some establishments, which is certainly far superior and thoroughly hygienic. The same process of cleaning should be employed for carpets in preference to beating them in the back yards in closely settled communities. Sweeping a street in its dry state should be considered a municipal crime, and the same holds good of the collecting of ashes in uncovered carts.

What to do to prevent the dust raised by speeding electric street cars and automobiles is indeed a difficult problem. Our fellow citizens on the Pacific Coast have used an oily substance to allay the dust. I submit this problem to the street-cleaning commissioners and city engineers of our great Eastern cities in the hope that their ingenuity may find a solution.

The dust in a railway car could be greatly minimized by proper ventilation and the more simple construction and equipment of sleepers and passenger coaches. But in addition to this a regulation should be enforced which will make it punishable by dismissal for any colored porter to brush a passenger about to leave the car in the presence of the others. To my mind it is an unpardonable offense on the part of any company not to prevent this practice of their employés who, as we all know, resort to it in order to solicit a gratuity. I have been told that the wages of colored porters on Pullman and parlor cars are so small that they must rely on an additional source of income from "tips." I do not know whether this is so or not, or whether the companies, the porters or the passengers are to blame, but tipping the colored porter has become habit with the American public and would probably be difficult to stop. However, I think a rule that brushing garments should only be allowed in the vestibule of the cars should be enforced.

Dust-collectors should be an obligatory equipment in the workshops of our prisons. In a recent investigation of some of our penal institutions I found a deplorable state of affairs in regard to this, besides the many other unhygienic conditions tending to propagate tuberculosis which I had occasion to observe.[10]

No matter how serious a crime the individual may have committed, society has no right to add to years of imprisonment additional punishment by giving the individual tuberculosis through unhygienic prisons and workshops.

In speaking of the social aspect of tuberculosis we can not overlook the tuberculosis situation in prisons and reformatories. Isolation and treatment of tuberculous prisoners in special wards or agricultural colonies are some of the means which must be resorted to to diminish consumption among this class of people. Some prisoners return to their families, and this would be undesirable had they become tuberculous or had they not been treated and cured of the disease. The practice of discharging prisoners in the last stage of tuberculosis, often virtually dying, without previous investigation to see that the freed individual will find a home where he will not constitute a source of infection and receive proper medical care, is thoroughly reprehensible.

What is the social duty, the duty of a community in regard to the average individual afflicted with tuberculosis? The rich consumptive will be able to take care of himself; he can be cured at home, in health resorts, or private sanatoria; but for the comparatively poor, or middle classes, there should be institutions where, for a moderate price, equally good chances for cure can be offered. No community has a right to pauperize its citizens; many are willing to pay, and he who can pay but will not should be made to pay. We have in this country a number of high-priced institutions and a number of purely charitable institutions, while for the middle classes and for the more advanced cases of consumption we have virtually nothing. There should be a sufficient number of city and county sanatoria to take in the moderately and absolutely poor consumptives in all stages of the disease. That it is cheaper to take care of a consumptive at the right time and in the right place until he is well, instead of taking care of him at the wrong time (in the advanced stage) and at the wrong place (general hospital) until he is dead has been often enough demonstrated not to need any further proof.[11]

But how are we to discover a patient at the right time? By educating the public in the early signs of tuberculosis, by establishing special tuberculosis dispensaries, by having periodic examinations of the chests of all public employés, pupils of public and private schools, colleges, etc., by urging the well-to-do to employ a family physician not only to take care of them when they are ill, but to watch over them while well and examine every member of the family from time to time so as to discover an early tuberculosis if such is developing. The special tuberculosis dispensary will serve the poor for the purpose of seeking early advice. Although I hope that at not too distant a time communities will realize that it will pay them to pay physicians, each one to be assigned to a number of poor families as a healer and a teacher, that is to say, to cure and to prevent disease.

If, furthermore, we could imitate the German state invalidity insurance companies, I think we would make a good step forward toward the betterment of the lot of our working population and make a wonderful stride toward the solution of the tuberculosis problem. Every laborer and employé in the German empire earning less than 800 marks must be insured against accident, old age and disease, including tuberculosis. The German insurance companies, under state supervision, soon realized that the earlier they took care of the policy holders who happened to become tuberculous the greater was the chance of their cure and the smaller the expense to the company. They urge their policy holders, at the slightest indication of pulmonary trouble, to go to the physi-

10. "The Tuberculosis Situation in Penal Institutions," Medical Record, May 13, 1905.

11. John H. Pryor, M.D.: "What Shall the State Do for the Consumptive?" Medical News, October, 1900.

cian paid by the company, for examination, and tuberculosis is thus discovered very often in the most incipient and consequently the most curable stage. The patient is then sent to a sanatorium, very often built and maintained by the insurance company, near large centers of population and independent of climatic conditions. Nevertheless the absolute and lasting cures often amount to 75 and 85 per cent. In the meantime the family of the consumptive laborer is looked after so that they may not be in want.

What is the social aspect, the social advantage of such an institution, which the Germans very justly call a *Volksheilanstalt*—a people's healing institution, or sanatorium? Time does not permit me to dwell at length on all that is accomplished by the sanatorium in regard to the social aspect of the disease under consideration. I had the honor, a few months ago, to address the Tuberculosis Congress in Paris on the subject of "The Sanatorium for Tuberculous Patients and Its Medical and Social Mission." Let me recapitulate rapidly the essential points of the latter, that is to say, the social mission, which I enumerated in that address.

By the admission of a patient to a sanatorium a frequently dangerous center of infection is made inoffensive and the patient is given the greatest possible chance of cure. If he is in the advanced stage he is made as comfortable as lies in the power of human skill with all the modern therapeutic means at command. The statistics of sanatoria show that the careful and trained consumptive is no danger to his immediate surroundings and the sanatorium no danger to the neighborhood. The contraction of tuberculosis by physicians, nurses and employés in sanatoria is of the rarest occurrence. The tuberculosis mortality in villages surrounding well-conducted sanatoria decreases because of the imitation by the inhabitants of the example in cleanly habits set before them by the inmates of the sanatorium.[12] The sanatorium cures the consumptive whenever he is curable and thus demonstrates the curability of the disease independent of climatic conditions. This is important when we consider that the majority of patients must be treated and cured in the same, or nearly the same, climate, in which they have to live and labor after their restoration to health. This cure is not established by quacks, "patent medicines," faith cure, or other mysterious means, but simply by the judicious use of God's fresh air, sunshine, good food, pure water, and sometimes a little medicine, and all under the careful guidance of a competent physician. The sanatorium makes the patient a hygienic factor when he returns to his former environments and thus demonstrates the preventability of tuberculous diseases. The patient has been taught the love of fresh air by day and by night, taught to shun vitiated atmosphere and the air of the saloon and of crowded meeting places. He has learned the value of simple, pure and good food, and how much more advantageous it is for him and his family to spend his money for food instead of for intoxicating liquors.

In the private as well as in the people's sanatorium there is much opportunity for cultivating compassion, benevolence and true democracy. It was my good fortune, ten years ago, when serving as assistant to my immortal teacher, Professor Dettweiler at Falkenstein, to see the birth of the first sanatorium for the consumptive poor. The wealthy and aristocratic patients at Falkenstein, being so much benefited by their sojourn there, manifested a deep feeling for the sufferings of the consumptive poor, deprived of the care and comfort of institutional treatment. They collected a large fund which became the nucleus of the largest people's institution in Germany, now located at Ruppertshain.

Many of these people's sanatoria give their patients educational advantages through lectures and regular classes of instruction. Some of our American sanatoria, I am happy to say, have imitated this good practice.[13] The young medical man, entering the sanatorium as assistant, is given an opportunity to become a trained diagnostician of incipient tuberculosis. The addition of such a physician to a community means a great step toward the solution of the tuberculosis problem. Do not consider me too sanguine if I say the sanatorium teaches true democracy, compassion and benevolence to the aristocratic, the rich and indifferent. It teaches the intemperate to become temperate, the disorderly to become orderly. It offers opportunity for education to the uneducated, and by teaching its inmates personal and general cleanliness and hygiene and love for fresh air it not only indirectly prevents tuberculosis, but also many other diseases whose origin must be traced to lack of fresh air, to filth, bad food, insanitary habitation, and bad habits.

Let me conclude this altogether too lengthy paper by saying that, to my mind, the solution of the tuberculosis problem means the solution of the social problem. Whatever prevents the development of tuberculosis will prevent social misery, whatever cures it will help to cure the social ills. Inasmuch as we diminish tuberculosis among the masses we will diminish suffering, misery and social discontent, and when the problem of tuberculosis shall have been solved we shall be nearer the millennium than we have ever been before.

16 West Ninety-fifth Street.

12 This is shown by statistics of Goerbersdorf and Falkenstein in Germany and in Rutland, Mass.

13. In the Muskoka Sanatorium, a Canadian institution, Dr Pillott takes his patients on botanizing tours and geological excursions. A botany club has recently been formed at the Adirondack Cottage Sanatorium with a view to entertaining and instructing the tuberculous invalids of that institution.

Original Articles

BENNETT'S FRACTURE.

RAYMOND RUSS, M.D.
Instructor in Surgery in the University of California.
SAN FRANCISCO.

In the president's address before the Section on Surgery of the British Medical Association, 1885, Edward H. Bennett, professor of surgery in Trinity College, Dublin, drew attention to a fracture at the base of the first metacarpal bone, the first note on which he had published in 1881.[1] In a series of museum specimens he had found six of these lesions; in all the injury was the same, an oblique fracture in which the palmar half or more of the surface articulating with the trapezium was detached, the shaft of the bone slipping upward past this detached fragment, thus simulating in the living a backward subluxation. Bennett described the injury as a "Stave of the Thumb," and this name is particularly appropriate.

My attention was first called to this fracture a little more than a year ago, and, from the paucity of literature at my command on the subject, and my own limited experience, I was led to believe that it was very

1. Bennett: Dublin Journal of Medical Science, vol. lxxiii, p. 72; British Med. Jour., Aug. 1, 1885, p. 200; ibid., July, 1886, p. 13.

uncommon. In an article[2] lately published, I reviewed my two cases and stated my conclusions. During the past year we have been on the lookout for Bennett's fracture, with the result that I here report eight cases of this interesting lesion, nearly all of which have been observed in the surgical dispensary of the University of California. With the increase in our cases of Bennett's fracture there has been a marked decrease in our diagnoses of sprains of the thumb and of subluxations at the metacarpal-trapezial joint.

It is perhaps not surprising that this fracture, which I now believe to be the most common as well as the most important fracture of the metacarpals, should go so long unrecognized. Its diagnosis is sometimes very difficult. Those who are not familiar with the lesion will generally have their attention first directed to it by a radiogram. It is to Bennett's remarkable clinical acumen that we owe the recognition of this fracture long before the days of the Roentgen ray. By careful and pains-taking observation, together with an examination of bone specimens, he succeeded in eliciting the truth. Bennett's work is no less remarkable than that of Colles who published the first accurate description of the fracture which now bears his name in 1814. Like Colles, several years were to elapse before the true value of his observations were to be recognized. Beatson[3] published a single case of Bennett's fracture in 1900, and a month later Prichard[4] reported the fracture occurring in his own hand. Beatson's case was republished by Roberts[5] in this country in 1901. Oberst[6] has reported but two cases out of his great clinical material and more recently Aulhorn[7] has collected and published three cases, one occurring in Friedrich's clinic, one in Perthes' and the third in his own service. He states the fracture does not appear to be as frequent as Bennett had supposed. The only series of cases thus far reported is by Miles and Struthers,[8] and unfortunately but an abstract of their communication has been published.

The difficulties attending the recognition of this fracture have given the general impression that it is rare. Indeed, in my first communication on this subject, read before the California Academy of Medicine, a prominent surgeon, whose scholarly attainments are generally recognized, stated that he had never heard of Bennett's fracture. In any large out-patient service sprained thumbs pass as trifling affairs and receive but slight attention from the clinician, yet if the histories of these so-called sprains were to be followed, we would find that many give rise to prolonged periods of disability. The patient is not able to use his hand freely and his wage earning capacity is either nil or materially lessened. The long period of disuse and the rapid healing of the fracture after reduction has been made and a suitable dressing applied, are shown in several of our cases.

As a knowledge of the anatomy of the part is essential to a thorough understanding of this fracture, a brief consideration of this subject will not be out of place. The first metacarpal bone is shorter and wider than its fellows; the shaft is flatter and its distal end does not present so great a rotundity. The shaft narrows slightly as it approaches the carpal extremity or base, and then suddenly widens into a marked palmar projection, which carries a large part of the articulating surface. This surface is concavo-convex for articulation with the carpal bone, the metarcapal resting on the trapezium much as a rider rests in his saddle. But section through the joint has shown that the metacarpal articulation does not rest equally on the trapezium in all positions. In extension of the metacarpal it rests more on the dorsal portion of the trapezium while in flexion it rests more on the palmar portion. The saddle joint is more noticeable in the first than in the other metacarpal bones. The first metacarpal possesses two inherent points of weakness, the narrow portion just below the base, which we may term the neck, and the anterior basal projection which suddenly bulges from the shaft of the bone to increase the articulating surface. When, therefore, a sudden and a considerable force is received on the distal end of the first metacarpal, as in striking a blow with the clinched fist, or when a sudden force is received indirectly, as in a fall on the tip of the outstretched thumb, the first metacarpal is most generally fractured transversely at its neck, or longitudinally, the anterior basal projection being broken off. In some cases both these lesions are found. A continuation of the vulnerating force would drive the shaft of the bone on to the back of the trapezium.

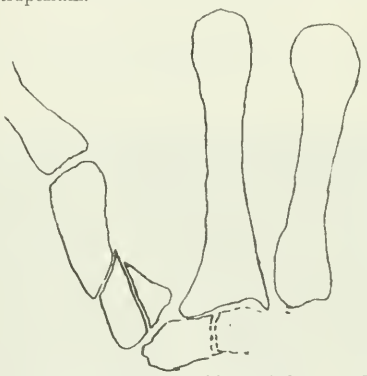


Fig. 1.—Tracing from radiogram of Bennett's fracture. Case 1.

A better idea of the mechanism of the injury can be gained from the following histories of our cases:

CASE 1.—J. B., a railroad engineer, aged 41, while adjusting the headlight on his engine, slipped and fell. He remained unconscious twenty-five minutes. He resumed work soon after the accident, but his left hand was very painful. Eight hours later, when he reached the city, his glove had to be cut off. The whole hand was much swollen. Careful palpation of the metacarpal and phalangeal bones revealed no fracture. The hand was treated as a simple contusion and hot applications made. One month later the patient again reported. The thumb was still very painful, especially when adduction was attempted. The patient had not been able to resume work since the receipt of the injury. There was considerable fluid in the flexor tendon sheath. Outside of the thenar eminence there was little swelling. The maximum tenderness was at the base of the first metacarpal bone. A tracing of the fracture is here given (Fig. 1), the radiogram being too faint to permit of reproduction. This shows a transverse fracture at the metacarpal neck, and a longitudinal fracture running into the joint between the metacarpal bone and the trapezium, the anterior projection at the base of the bone having been broken off. A subluxation is also present, although this was not demonstrated in the patient on account of the swelling. The thumb was put up in strong abduction, being held in this position by an internal rectangular cardboard splint. One month later the joint was somewhat stiff, but the patient had been able to resume work.

2. Russ: "Fractures of the Metacarpal Bones," Annals of Surgery, February, 1906, p. 288.
3. Beatson: British Med. Jour., May 5, 1900, p. 1076.
4. Prichard: British Med. Jour., June 23, 1900, p. 1533.
5. Roberts: Philadelphia Med. Jour., March, 1901, p. 481.
6. Oberst: "Ergänzungheft der Fortschritte auf dem Gebiete der Rontgenstrahlen."
7. Aulhorn: Deuts. Zeits. f. Chir., April, 1905, p. 227.
8. Miles and Struthers: Lancet, Dec. 12, 1903, p. 1655.

CASE 2.—T. D., aged 27, an oiler by occupation, took part in a street fight two days before he presented himself to me. He reported that he struck a heavy blow with his left fist tightly clinched, the force being received on the head of the first metacarpal. He went immediately to the City Receiving Hospital, where a diagnosis of backward dislocation of the first

Fig. 2. Bennett's fracture. Case 2.

metacarpal was made and a pasteboard splint applied. On examination I found great swelling over the thenar eminence. Posteriorly there was a prominence at the base of the first metacarpal. The thumb appeared slightly shortened. Profiting by my first case I succeeded in eliciting crepitus at the

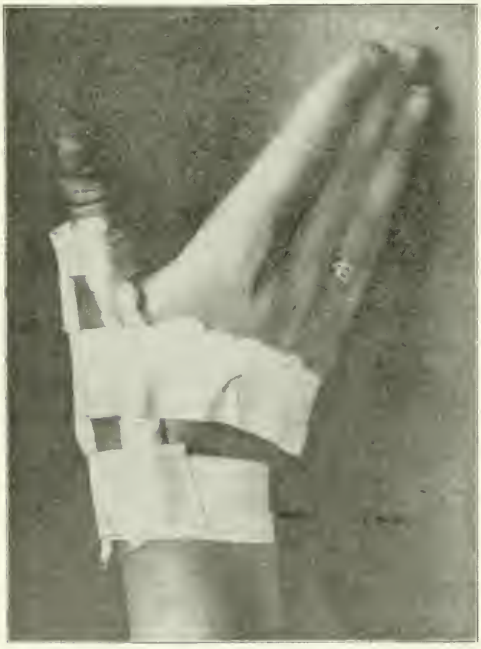


Fig. 3.—Author's coaptation-traction splint.

metacarpal base. The accompanying radiogram of this case (Fig. 2), shows a displacement of the distal fragment upward. The line of cleavage is the same as that described by Bennett. Function was restored at the end of three weeks.

The following coaptation and traction splint was applied (Fig. 3), this being a modification of the splint which I had previously generally employed for fractures of the metacarpal bones. The thumb was put in strong abduction and three wooden skewers—butcher's—neatly padded, were placed about the metacarpal, one posteriorly in the interosseous space, one along the outer border, and the third over the thenar eminence. These extended from well above the metacarpal bone to the first phalangeal joint. They were fastened tightly in place by two strips of adhesive plaster. Traction was then exerted on the thumb and maintained by strips of adhesive plaster passing about the first phalanx and the projecting ends of the three skewers. This dressing was reinforced by a rectangular cardboard splint. Accurate coaptation and sufficient traction to overcome the deformity and muscular action are most necessary in the treatment of this fracture. Slate pencils or small lead pencils can be used in place of the wooden skewers. The soapstone slate pencils are less brittle than the ordinary kind.

CASE 3.—T. D., a waiter, aged 26, struck a man with his right fist tightly clinched, three weeks before presenting himself at the clinic. He stated that immediately after the blow was struck he noticed that the metacarpal bone was displaced backward and that a friend "pulled it into place for him." He had not been able to use the thumb since the receipt of the injury; considerable swelling was present. Crepitus was easily elicited at the metacarpal base, but there was no tendency toward a repetition of the displacement. The coaptation-traction splint was applied and the fracture made an uneventful recovery. Full function was restored at the end of seventeen days.

Fig. 4.—Bennett's fracture. Case 4.

CASE 4.—J. W. C., a laborer, aged 27, while attempting to move a heavy box three weeks before presenting himself at the clinic, struck the tip of the right thumb very forcibly against the edge of the box. He at first regarded the injury as trifling, but found that he was unable to use his right hand in manual labor. He had had no treatment. On examination there appeared to be a subluxation at the trapezial-metacarpal joint, accompanied by considerable shortening. There was little swelling in the vicinity of the bone. Crepitus was determined near the base. The radiogram (Fig. 4) shows the presence of a transverse fracture at the narrow portion of the bone, with an overriding of the distal fragment. With the thumb in traction and strongly abducted, a tightly fitting plaster-of-Paris dressing was applied. Twelve days later the dressing was removed. There was slight exuberant callus, but the alignment was perfect. There was good function and the bone seemed to be firmly united. As a matter of precaution, however, the dressing was reapplied for five days longer, and the patient resumed his work the following day.

CASE 5.—G. B., a laborer, aged 35, was hit with a heavy lead pipe across the palmar surface of the metacarpal bones of the left hand, the force being largely expended on the first metacarpal. There was great pain and swelling of the whole hand when we saw him shortly after the injury had been inflicted. He had motion in the fingers, but was unable to move

the thumb. Crepitus was determined near the base of the first metacarpal. The upper end of the distal fragment appeared prominent, although this is not shown in the radiogram. The radiogram (Fig. 5), shows, however, a transverse fracture just below the palmar projection at the base of the bone. A coaptation-traction splint was applied. This was removed at the end of twelve days. There was a slight callus deformity at the point of fracture, but a good functional result.

CASE 6.—P. F., laborer, aged 33, had injured his left hand six days before I saw him. He stated that he tripped and fell with thumb extended, the force of the fall being received on the tip of the thumb. Since then he had not been able to use his left hand. There was no laceration, but slight discoloration and much swelling were present about the first metacarpal, especially noticeable in the flexor tendon sheath on the thenar eminence. There was some shortening of the thumb and the clinical picture of a subluxation. Pain was localized at a point just below the metacarpal base and crepitus was easily determined here. The thumb was placed in a coaptation-traction

Fig. 5.—Bennett's fracture. Case 5.

splint and the dressing removed at the end of seven days. The alignment was good and no crepitus was determined. The splint was reapplied and removed on the fourteenth day. There was perfect functional result and no deformity.

CASE 7.—T. D., a kitchen helper, aged 56, had injured the thumb of left hand four months before he applied at the clinic. He stated that he had fallen, striking the palmar surface of the ungual phalanx of the thumb very forcibly. On examination there was considerable prominence at base of the first metacarpal, giving the appearance of a backward subluxation. On comparison of the two thumbs slight shortening on the injured side was observed. Crepitation was elicited just below the base of the metacarpal. The patient was able to execute slight movements in all directions, but free movement gave him pain. There was slight swelling over the thenar eminence. A coaptation-traction splint was applied and a radiogram then taken. This showed a transverse fracture similar to that in Case 4. The alignment was good. The patient was discharged three weeks later with full restoration of function.

CASE 8.—H. K., a solicitor, aged 45, had fallen three days before, striking his right thumb forcibly against a wall. There was some swelling and great deformity, the lesion appearing like a complete dislocation backward of the first metacarpal. The trapezium could not, however, be felt in the palm of the hand, as is usually the case in these luxations.

With considerable traction on the abducted thumb reduction was made and crepitus was elicited. The point of fracture was found to be just below the joint. The overriding of the distal fragment had been great and there was a strong tendency for a repetition of the deformity. A coaptation-traction splint was applied, but when examined three days later it was found that the deformity had recurred. The deformity was corrected and a plaster-of-Paris bandage applied very tightly, pressure being exerted at the point of fracture until the plaster had set. The dressing was taken off at the end of twelve days. The patient had free movement of the thumb. He returned to the clinic one month later, complaining of a general tenderness over the first metacarpal. There was slight deformity, but motion was not limited. Massage was advised and the patient has not reported since that time.

It will thus be seen that the left first metacarpal was fractured in five cases, the right in three. In all cases the fracture resulted from a considerable force; from direct violence in two cases, striking a heavy blow with the clinched fist. In four the fracture resulted from indirect violence, striking the thumb forcibly, the tip of the thumb being specified in two cases. The exact manner in which the accident took place could not be elicited in the first case. In the fifth case the fracture resulted from an injury inflicted on the palmar surface by a heavy lead pipe. While in point of etiology this injury does not correspond with the others, nevertheless the displacement was characteristic of Bennett's fracture and it has therefore been included in the series.

All the cases have occurred in men ranging in age from 26 to 56 years. Cases 1 and 5 alone reported for treatment immediately after the injury and it is noticeable in these instances that considerable trauma of the hand accompanied the fracture. The other patients at first considered the injury too trifling to warrant surgical attention, but, after periods of disability ranging from two days to four months, consulted us.

The diagnosis between this fracture and backward subluxation is a matter of the greatest importance, for it will be remembered that surgeons have for years failed to determine the true lesion. Bennett has made the statement that "when we bear in mind the form of the articulation, it is difficult to conceive the idea of a partial dislocation occurring in it and remaining as a permanent deformity. If we apply the analogy of a rider and his saddle to this perfect saddle-shaped joint, the difficulty will, I think, be evident. A rider, thrown on to the pommel, must, as we know, adopt one of two courses; make his dislocation complete, or get back into his seat. There is no permanent partial displacement possible."

Partial displacement does occur, however, and the following case, seen by me in consultation with Dr. John C. Newton, is given in proof of this statement.

CASE 9.—H. F. C., a stevedore, aged 32, engaged in a street fight on Jan. 2, 1906. He reported that he struck his adversary a heavy blow with his clinched fist. When seen by Dr. Newton the next day the vicinity of the first metacarpal of the left hand was much swollen and discolored. There was a hard swelling near the metacarpal-trapezial joint and distinct crepitation could be heard. A moulded plaster-of-Paris splint was applied, but the deformity showed a great tendency to recur.

I saw patient on Jan. 14. At that time the swelling had largely disappeared but the least movement was very painful. The proximal end of the first metacarpal was prominent, giv

ing the picture of a backward subluxation. Reduction was easily made and was accompanied by a decided crepitation, but the deformity recurred immediately when the pressure was relieved. With the metacarpal reduced and the index finger on the metacarpal-trapezial articulation, I carefully palpated the shaft of the bone with the second and ring fingers, at the same time manipulating the distal end of the metacarpal with the other hand. No fracture of the bone could be made out and the crepitus which was elicited when reduction was made, was distinctly wanting. It was evident that we were dealing with a backward subluxation of the first metacarpal, and a radiogram taken the following day showed that the bone was intact. The metacarpal was placed in abduction and a plaster-of-Paris roller bandage applied. Dr. Newton tells me that the patient resumed work on March 2. He examined the hand four days later; the patient had free movement of the thumb, but the base of the metacarpal was still prominent.

This case exhibits the main points which are to be borne in mind in the differential diagnosis. In obscure cases the Roentgen ray must be depended on to make a diagnosis, but the clinician will generally be able to arrive at a correct conclusion after a careful examination. We have found the dressing here described useful, although it failed in case 8. After reduction has been made and maintained the fracture heals very readily, even in old cases. Our shortest period of disability was twelve days, our longest one month.[9]

THE FORMATION OF CONNECTIVE TISSUE IN THE ANTERIOR PART OF THE VITREOUS BODY IN YOUNG GIRLS.

CHARLES J. KIPP, M.D.
NEWARK, N. J.

Hirschberg[1] says: "Enigmatical to me is also the white tissue formation in the lower anterior part of the vitreous body, which I have seen a few times in young girls, ending in some in some damage to, in others in total loss of vision. In these cases tuberculosis could be excluded. He quotes briefly two cases.

CASE 1.—A healthy girl, aged 16, was first seen Nov. 29, 1897. The right eye began to lacrimate two and one half months previously. The lacrimation lasted two days and was accompanied by pain for a day only. There was obscuration of right eye; the left eye was normal. Right eye: fingers at 4′ V. F. intact. There was a large dark spot which surrounded the blind spot, and which sent a broad offshoot toward the point of fixation. There was no irritation. Tn. Brownish dots in the cornea. The pupil was of medium size but irregular in form. There were brownish dots on anterior capsule, bluish spiderweb-like opacity immediately behind lens which is transparent. Flaky opacities were in the vitreous. An extensive white opacity, greenish-white in daylight, was situated outward and downward close behind the lens. The fundus was not visible.

Treatment.—Moderate inunction treatment was followed by slow but steady improvement. Jan. 11, 1898, counts fingers at 6′; February 28, fingers at 8′; March 22, fingers at 10′; June 9, 1898, S. 1/25; August 25, S. 1/10. V. F. good, but with a large longitudinal scotoma, which includes Mariotte's spot. Posterior synechia. The bluish-white mass behind the lens is still present but smaller. Disc visible with a staphyloma-like focus adjoining lower margin, and a thick floating opacity in vitreous immediately in front of disc. uly 9, 1900, no change. Robust health.

CASE 2.—A girl, aged 26. Was first seen Oct. 1, 1890.

History.—In January of same year she noticed suddenly a grayish-white veil before right eye. This lasted but two days, but returned intensified in March. Vision improved again, but for some weeks past it had failed again. She was anemic and weak, but free from organic disease. Left eye normal (M. 3, 5. D.). Right eye, fingers at 5′. V. F. defective upward, defect wedge-shaped, extends up to point of fixation. Bluish flocculent opacities were in vitreous. Outward and below was a bluish connective tissue formation connected with a peripheric detachment of the retina.

Treatment.—Tannin and secale, iron and hydrastis were used in treatment. Nov. 19, 1890, an iritis had developed; the fresh exudation extended close up to the lens. April 15, 1891, the eyeball was deformed and there was a grayish-white reflex from behind pupil. With oblique illumination a grayish-white wall was seen behind lower half of lens. On Nov. 28, 1891, the V. F. was contracted to an island below the point of fixation.

Cases like the ones here reported, in which only one eye is the seat of disease, are not very rare and have doubtless been seen by most ophthalmologists. In Case 3 both eyes were affected in almost the same manner simultaneously and although the patient was practically blind for some time, and the improvement very slow, the outcome was complete restoration of vision in both eyes. The case seems to me to be worthy of recording also, as I have had the opportunity of seeing the patient during the subsequent twenty-five years, and therefore can testify to the permanency of the cure.

CASE 3.—Miss S. R., aged 20, was first seen by me May 2, 1875.

History.—She was in very good health. Her family history was good. Parents were in good health. Had never had a serious disease. Had noticed some impairment of vision for last three years. For six days past she was almost totally blind in left eye. Both eyes were perfectly normal in appearance, and the mobility of either was unimpaired in all directions.

Examination.—Both eyes are E. R. S. 18/50. L. S. 2/200 Ophthalmoscopic examination showed in right eye vitreous body very cloudy with floating membranous opacities. Disc and retina were veiled. Retinal veins were very large. Tn. V. F. intact. Left eye vitreous was so opaque that disc and retina could not be seen. Dense floating opacities in anterior part of vitreous. Tn. V. F. intact.

Further inquiry revealed that she menstruated regularly and no evidence of disease of other organs could be discovered. Urine was free from albumin and sugar. I ordered two leeches to each temple and prescribed potassium iodid in 5-grain doses three times daily.

Clinical Course.—May 15. No change, except that in right eye there are now visible several small bluish-white globular masses in lowest part of vitreous. In the left eye there is now apparently a slight contraction of the V. F. downward.

May 22: Right eye; bluish-white plaques are now also seen in lower part of vitreous of this eye. In both eyes there are now semi-transparent membranes in anterior portion of lower part of vitreous, resembling detached retina, but they are distinctly circumscribed. There is apparently an increase in the opacity of the vitreous in both eyes. R. S. 18/40. L. S. 6/50.

June 6: Right eye as before. Left eye, vitreous is much clearer. The disc is now visible and seems normal. Retinal veins are much enlarged. There is no apparent change in the choroid.

Aug. 8: Both eyes are in about the condition last described. Jan. 25, 1876. In both eyes the vitreous is much clearer, otherwise as before. R. S. 18/25. L. S. 18/25.

July 6: For the last three months, vitreous has been almost clear in both eyes. Now there are again visible in the left eye, several of the bluish white globular masses in the lower part of the vitreous. In the right eye, the semi-transparent membrane in lower part of vitreous is now of a distinctly convex outline, and protrudes toward the axis of the eye, from in front and below. Arterial vessels pass over it and diminish in caliber as they approach most convex portion of prominence, while veins gain in size as they approach the periphery. No connection between these vessels and the retinal vessels can be

9. Further literature may be found as follows: Bähr: Monats. f. Unfallhk., 1897, No. 4; Blenke: Ibid., 1901, No. 4; Lauf: Deuts. militärärztliche Zeits., 1902, No. 4.

1. Hirschberg: "Einführung in die Augenheilkunde," second half, division 1, p. 211.

made out. Opacity of vitreous is again somewhat increased in both eyes. R. S. 18/25. L. S. 18/25.

Nov. 4: Right eye. The membrane in lower part of vitreous is no longer visible and the vessels that were seen on it are now indistinctly seen at a greater distance from the anterior part of vitreous than formerly. In the place of the membrane there are now many small fixed membranous opacities. In lowest part of vitreous apparently immediately behind lens are seen two small bluish-white glistening bodies of globular form and in outer region closely behind or on posterior capsule of lens are several very dark opacities. A diffuse opacity of vitreous still veils the disc in both eyes. R. S. 18/25. L. S. 18/25.

Feb. 21, 1877: Right eye: the interior portion of the vitreous is again full of floating membranous opacities. The semi-globular protrusion previously noticed, is again visible. The veins on it have changed their course somewhat. They now run downward instead of forward. The left eye is now free from floating opacities. R. S. 18/20. L. S. 18/15. Patient is still taking potassium iodid in 10 grain doses, three times daily.

March 16: Right eye: The floating membranous opacities have largely disappeared. The convex protrusion is now distinctly seen as a grayish membrane, over which vessels pass from behind forward.

Left Eye: A grayish membrane, convex in form, has made its appearance also in this eye. It is situated in lower outer portion of vitreous, apparently not far behind lens, and protrudes toward the axis of the eye. Vessels are seen on it, but no connection between them and the retinal vessels can be made out. It looks very much like a detached retina. The membrane is sufficiently translucent to allow floating opacities to be seen behind it. In both eyes the V. F. is intact. R. S. 18/20. L. S. 18/15.

June 22: In both eyes the convex protrusion has apparently become larger, and its outline is more opaque.

Dec. 14: Right eye: There is an increase in floating membranous opacities in anterior portion of the vitreous. The convex protrusion is hidden by them.

Left Eye: The convex protrusion seems larger than at last visit.

Jan. 26, 1878: Right eye: Vitreous opacities have nearly all disappeared. The protrusion previously noted, is no longer seen. S. 18/20.

Left Eye: The convex membrane seems to have become loose anteriorly, as it now floats slightly on movements of eye. Several bluish-white, brilliant globular bodies are again visible in lower part of vitreous, not far behind lens.

December 1: Right eye: There is still diffuse haziness of vitreous, but no floating opacities are present. The apparent detachment of the retina is no longer visible. S. 18/20.

Left Eye: The same as right; the membranous protrusion is not visible. There are no vessels in vitreous. S. 18/20.

June 7, 1879: Right eye: No change since last entry.

Left Eye: An increase in the number of floating opacities. The semi-globular protrusion in lower outer part of vitreous is again visible and in addition there is now seen a similar protrusion with vessels on it, in lower inner portion, not far behind lens. S. 18/20. V. F. intact.

April 14, 1880: Right eye: Media are perfectly clear; fundus is normal. S. 18/15.

Left Eye: Large floating membranous opacities. The semi-globular protrusion in anterior lower portion of retina remains as before. S. 18/20.

Nov. 22, 1881: Right eye: Diffuse haziness of vitreous, otherwise normal. S. 18/20.

Left Eye: Haziness of vitreous. The protrusions in lower part of vitreous are no longer visible.

Feb. 2, 1882: Right eye: Vitreous not quite clear. S. 18/15.

Left Eye: Membranous floating opacities in vitreous. Two small atrophic patches are now visible in outer periphery of choroid. S. 18/30.

During the following five years she lived in the tropics. She married and had one child. On her return to this country I examined her eyes and found both free from opacities in the vitreous and fundi normal. During the last few years, the lens of this left eye has become cataractous, and more lately the lens of the right eye has become somewhat opaque at posterior pole. On Dec. 14, 1905, I found her vision as follows: R. Hm. 1.50; S. 6/6; L. Hm. 1.5; D. S. 6/12. With the exception of the opacities of the lenses the eyes are apparently normal.

As to the pathology of this affection I have nothing new to offer. Although I did not see any actual extravasation of blood in the vitreous body in this case, I have seen it in others with similar membranous formation in the anterior parts of the vitreous, and think that in this case also, hemorrhages from the ciliary body were present before I first saw the case. The resemblance of the membranes with the vessels on them to a detached retina, was so great that one of my most experienced colleagues, who saw the case, urged me to make a scleral puncture, but having watched the development of these membranes for months, I felt sure that they were not the retina and, therefore, did not follow his advice. The gradual disappearance of the connective tissue formation was followed by the complete absorption of all the floating opacities in the vitreous. The participation of the choroid in the morbid process was shown by the appearance of an atrophic spot near its periphery.

SPINAL AMYOTROPHY WITH PUPILLARY INEQUALITY, AND JUVENILE DYSTROPHY.*

L. HARRISON METTLER, A.M., M.D.

Professor of Mental and Nervous Diseases in the Chicago Clinical School; Associate Professor of Neurology in the College of Medicine of the University of Illinois; Neurologist to the Cook County Hospital; Norwegian Lutheran Deaconness' Home and Hospital.

CHICAGO.

The following case, seen in consultation with Dr. Alexander C. Wiener, is reported not as such an extraordinary case, for it is one of amyotrophic lateral sclerosis, but on account of the association with it of inequality of the pupils. This association is exceptional.

CASE I.—Mrs. J. P., aged 49, twice married, has two healthy children by her first husband. During the nine years of married life with her second husband she has borne no children, but has had four or five early abortions.

Family History.—Her father died of consumption when the patient was six years old. Her mother died of paralysis of the heart at the age of 56. She has a half brother and a sister in perfect health. Nothing further of interest is in the family history. She had the usual children's diseases, and a severe attack of inflammation of the bowels twelve years ago. Menstrual life began at 13 years of age, is regular and painless. Ten years ago the patient worked hard, so hard that men refused to do the work, kneading bread all day in a bakery. This she continued for about five years. She would use a barrel and a half of flour a day. As a strong, healthful, farmer's daughter, she had worked hard pitching hay in her early life.

History of Disease.—Her present trouble commenced about three years ago. The middle finger of the right hand began to be stiff, especially when she was sewing. It seemed like "a steel spring at times, and flew back." There was absolutely no pain, soreness or other sensory manifestation with it. Then the wrist became weak and dropped on the right side. Still there was no pain or soreness whatever, no numbness or tingling either. About four months later the same phenomena took place, in about the same way, in the left hand. When she would pull out the middle finger it flew back like a steel spring. Then the wrist became weak and dropped on the left side as it had done on the right. No sensory phenomena of any sort, however, appeared at this time anywhere. This condition remained more or less stationary until last Christmas, when the trouble seemed to pass to the arms and shoulder.

* The patients were shown to the Chicago Neurological Society, March 29, 1906.

At present she can raise her left arm to the head, but not the right arm. There is wasting to a considerable degree in the deltoids, and to a lesser degree in the other shoulder and neck muscles. All of this is more pronounced on the right than on the left side. There is a distinct reaction of degeneration on electrical examination of the right deltoid, and partial reaction in the supraspinati and infraspinati, interosseal, and thenar muscles of the right side; and a very slight reaction in the corresponding parts of the left side. There seems to be no wasting of the latissimus dorsi and rhomboids and very slight, if any, in the pectorals. The left arm is somewhat softer and smaller than the right. The thumb muscles are slightly wasted. The hands seem to her swollen and somewhat larger generally than normal. They are feebly rigid and tend to assume the *main en griffe* attitude. The muscles of the neck, "the cords" she calls them, feel a little stiff and "seem to crack." She does not think she is any thinner about the neck. There have been creeping, fibrillary twitchings in the muscles of the right arm at times, but not in those of the left. The collar bone feels sore and slightly depressed.

There are no symptoms whatever in the legs; but the knee jerks are very decidedly exaggerated. No ankle clonus or Babinski could be elicited.

Until last Christmas there were no notable sensory symptoms in any part of the body or extremities: no local tenderness anywhere now or referred to in the past. Under the left shoulder there is now a little soreness, and under the right collar bone she feels a slight degree of soreness. There is absolutely no spinal tenderness on vigorous percussion; no tenderness along the course of any of the spinal nerves. There have been no neuralgic manifestations. There have been no bowel or bladder troubles of any sort.

The right pupil is markedly dilated, but contracts slightly, quickly and sharply on accommodation and light stimulation. This condition is probably due to ciliospinal irritation and not to a sympathetic lesion.

Differential Diagnosis.—There are some suggestions of syringomyelia in this case; but the latter disease is ruled out by the absence of the syringomyelic syndrome, for the pain and heat sense, as well as the tactile sense, are normal everywhere. Peripheral neuritis is excluded by the absence of all sensory symptoms; and for the same reason pachymeningitis cervicalis hypertrophica is also ruled out. The latter disease, were there present any sensory symptoms at all, might be well considered, in view of the fact that the patient has had two healthy children with her first husband, but a number of suspicious abortions with her second. The closest inquiry in regard to any specific trouble elicited continued denial.

Treatment.—The treatment consists of the daily injection hypodermatically of nitrate of strichnia gm. 0.003. After four weeks of this treatment, without any improvement in the paralysis, there seems to have been a little improvement in the appearance of the atrophied muscles around the right shoulder. The patient and her husband are very positive of this, though imagination may have something to do with it, I suspect.

The case of juvenile myopathy may be diagnosed as such clinically, though there is some question as to its being a pure example of Erb's type. The case is from the Cook County Hospital, where I was asked to see it in consultation, in the service of Dr. H. V. Halbert.

CASE 2.—G. H., aged 19, German, unmarried, watchman and laborer. Patient has indulged in beer, whisky and tobacco, but not to excess. Had measles in childhood and says that when young he was "deathly sick" several times, but from what cause or disease he does not know. He has never had typhoid fever or diarrhea prior to Christmas, 1905, when the present trouble seems to have begun. He had an attack of gonorrhea, July, 1905; syphilis is denied.

History of Disease.—On Dec. 28, 1905, the patient entered the Cook County Hospital, in the service of Dr. W. S. Harpole, and gave the following history: About two weeks previously he commenced to have diarrheal attacks, obliging him to go to stool three or four times a day and the same number of times at night. He formed no opinion of his own as to the cause of this trouble. The stools increased to five or six a day and the same number at night. At one time they decreased in frequency and severity, but increased again, for which reason he entered the hospital. The stools, according to the patient's own account, were thin and watery, yellowish, sometimes odorless and at other times "putrid." Prior to coming to the hospital this condition existed for one week, during which time he ate no solid food whatever. He never saw any blood in the discharges. Vomiting began with the onset of diarrhea, and during the week prior to entering the hospital, occurred every day. Whenever he took a bite of food he became nauseated and immediately began to vomit. During the last two or three days of the week he vomited two or three times during the day and as often during the night. He thirsted keenly for cold water, but the drinking of it would set up an attack of emesis.

Fig. 1.—Juvenile myopathy.

He had no appetite for food and he believed he had lost ten pounds at least in two weeks. A slight cough was present. There was tenderness in the region of the stomach, and occasionally for a few minutes he would experience a dull pain in the stomach itself. He never had had night sweats; never had had any difficulty in urination.

Examination.—The record of the physical examination of the patient, made Dec. 28, 1905, shows no abnormality about the head. There were prominences of the intercostal, supraclavicular and infraclavicular spaces; winged scapulæ; narrow and emaciated thorax; no pulmonary, cardiac or pericardiac signs; no disturbance of the pulse, except a slight retardation and reduced tension; no abdominal tenderness, but a somewhat

scaphoid abdomen. Liver and spleen were impalpable; there were no evidences of fluid or tumor in the abdomen. Nothing of note was discovered in connection with the genitalia, the nervous and glandular systems, the extremities or the skin. Urinalysis revealed; color yellow, cloudy, acid reaction, sp. gr. 1,020, trace of albumin, no casts, no sugar, abundant deposit of urates. Examination of feces was negative.

Examination of the blood showed white corpuscles, 8,200; reds, 4,500,000 or 90 per cent.; hemoglobin, 90 per cent.; color index, 90/90-1. Differential—polymorphonuclears, 67 per cent.; large mononuclears, 20 per cent.; small mononuclears, 11 per cent.; basophiles, 2 per cent.; eosinophiles, 0; emucleated reds, 0; transitional forms, a few. The blood stained well and

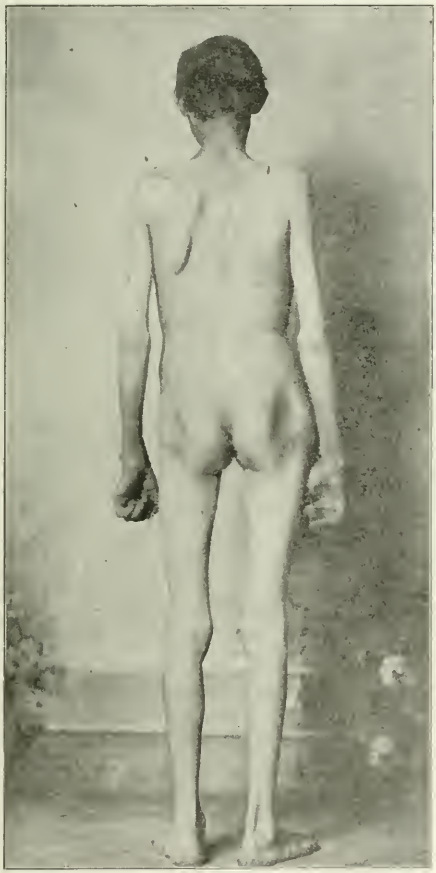


Fig. 2.—Juvenile myopathy.

coagulated rapidly. There was slight crenation and poikilocytosis of red blood corpuscles. Widal reaction, solution, 1-40, was not positive in 35 minutes. The temperature remained at all times practically normal, while the pulse ran a little subnormal. An antityphoid régime was adopted, and the patient left the hospital Jan. 6, 1906, recovered.

On March 13, 1906, the patient returned to the hospital. He says that almost immediately after he had gone out as cured he began to notice some pain and stiffness in his legs. The pain increased on walking. The muscles seemed to swell up and then grow small. Similar phenomena appeared in the thighs. After an interval of about ten days the same thing, or something like it, occurred in the shoulder and advanced down the arm to the elbow. In the upper limbs these manifestations did not seem so marked to him as in the lower limbs. Finally, the neck muscles became gradually involved, so that he had difficulty in holding up his head. He could walk when he entered the hospital, but he complained of pains of a dull aching character in the right leg when he exerted it. According to the patient's own testimony, the left leg has made an almost complete recovery. He feels that he has lost 20 pounds or more in weight the last three months. The marked atrophy of the shoulder and pelvic girdle muscles is obvious. In the upper extremities, the deltoid, and infraspinati and supraspinati, the pectorals, and the muscles of the arm down to the elbow are decidedly wasted. The forearm is very little wasted, if any, and the hand is practically normal. The glutei muscles, the muscles extending the hip joint, and those of the thigh are wasted. The legs below the knee and the feet are practically normal. The appearance of the face is characteristic. The knee jerks are present but much reduced. There have never been any fibrillary contractions at any time.

On electrical examination the wasted muscles show a quantitative reduction in excitability to both Faradic and Galvanic currents. No reaction of degeneration or inversion of normal formulæ have I ever been able to detect. There are no sensory disturbances, nor any recorded except for the slight dull pains in the beginning. There are no disturbances of the sphincters.

A few words of interest may be said in regard to the etiology of the myopathies, and especially of this case. As we all know, heredity plays a dominant rôle, but cases have been reported by Erb himself, Gowers and others, in which no heredity could be traced, hardly even a neuropathic tendency. In our case certainly no heredity could be elicited. Other cases are on record in which infection, such as diphtheria, rheumatism, measles, scarlatina, played a very possible and even probable rôle. Gowers says, "As a rule no exciting cause can be traced. In a few instances the onset has succeeded some other morbid process, such as chlorosis, acute disease, rheumatic affections due to exposure to cold, and the depression of general health resulting from these may have determined the time of onset." In a case reported by Gowers the patient died from diarrhea. In connection with the history of infection that appears in this case it is to be noted that the winged scapulæ and marked depression about the shoulder girdle were made note of when the patient entered the hospital in December on account of diarrhea. The diarrhea may have been a mere incident, and the muscular wasting, unnoted, may have already begun.

In the next place a polymyositis of mild degree has been reported as occurring before these myopathies, and is suggested, in our case, in the soreness, transient swelling of the muscles of the leg, and other characteristics of the disease. The view has been put forth that some of these myopathies, if not all of them, are due to a transient mild degree of polymyositis. Jacoby[1] of New York reports an interesting case with many features like those of our own, and discusses most interestingly and plausibly the possible relationship between his case and cases like his and primary progressive muscular atrophy. He asks:

> In short, is our case, perhaps, a case of progressive muscular atrophy in which the inflammatory stage is more marked clinically than usual, due to the myositis being more of a parenchymatous character? . . . Are not some cases of primary progressive muscular atrophy the resultants of light cases of polymyositis parenchymatosis? We believe that there is considerable evidence in favor of these views and we do not stand entirely alone in possessing this opinion.

Wagner insisted, and Unverricht admitted the possibility of their cases being acute cases of primary progressive muscular atrophy. Wagner's cases showed a

1. Jour. of Nervous and Mental Disease, vol. xlii, No. 11.

duration respectively of three and eight weeks; Unverricht's a duration of six weeks. Gowers, Beevor and most authors believe that the pathologic change in the myopathies in the muscles is interstitial, that is, overgrowth of fat, proliferation of nucleated fibrous tissue between muscle fiber, with secondarily changes in the muscle fibers themselves, causing the narrowing and distortion of the fibers and their wasting.

A transient infectious polymyositis may, therefore, in our case, as has been suggested in many if not all cases of primary myopathy, have been present. The evidence, at all events, points away from a primary cord or nerve degeneration, and toward a primary muscular change.

But again, in these cases of myopathy there may be both a neural and a muscular process going on at the same time. In one case[2] the cord was normal except at the last dorsal segment, where there was found an area of granular disintegration in the intermediate substance on each side, but the cells of the anterior cornua were never atrophied, according to Beevor. Barsicow's cases and Zimmerlin's show that different, so-called types, of primary myopathy occur in the same family; and other cases have been reported wherein clinically neural disease was suspected and yet only myopathic changes were discovered and *vice versa*. Such cases lend color to the contention of Erb, who holds in contradistinction to Gowers and others, that the change in the muscle is primarily in the muscular substance itself, and secondarily in the interstitial tissue, and that the whole process is a functional disturbance in the trophic centers of the cord; thus, according to Erb, making of a myopathy both a muscle and a neural disease. These transitional cases, such as Barsicow's and Zimmerlin's, give support to the contention of many of our latter day physiologists that the lower motor neuron, with its associated muscle, constitutes a physiologic unit, a neuro-muscular apparatus. Grasset has even gone so far, in declaring for the solidarity of the lower neuron, as to affirm that an anterior poliomyelitis can not be differentiated from an inferior motor polyneuritis, because they are both but expressions of an inferior motor neuronitis.

The etiology and pathology of our case are such as not to exclude it entirely from the class of juvenile myopathies, though they do not give it the frank, clear-cut position demanded by the average text-book.

The symptomatology, especially in regard to the distribution of the atrophy involving as it does the shoulder and pelvic girdles, favors the diagnosis of juvenile dystrophy for our case.

cord; thus, according to Erb, making of a myopathy

In differentiating in doubtful cases between a dystrophy insists on the great importance of the grouping of the atrophied muscles. Thus, in spinal cases, he finds that the deltoid, infraspinati and supraspinati, clavicular part of the pectoral, biceps, brachialis anticus and supinator longus are in one group involved (fifth cervical root); the latissimus dorsi, sternal part of the pectoralis and triceps being involved in another group (sixth cervical root). In the myopathies, the biceps, triceps and supinator longus are wasted, while the deltoids and spinati muscles escape. In other words, he finds in the spinal atrophies that there is a physiologic grouping of the muscles according to the center of the cord involved; while in the myopathies there is no evidence of such spinal grouping. This, I think, is a little too rigid. Gowers has stated, in his description of the myopathies, that occasionally hardly any muscle of the body escapes. He reports the case of a man, 27 years of age at the time of his death, with no history of any analogous case in the patient's family. The affection began at the age of 14, when the feet began to turn in so that he walked on the outer side of the foot. He soon noticed a gradual wasting of the legs, which slowly progressed, and at about the age of 24 involved the arms. When the patient was first seen, a few months before his death, the muscular atrophy was universal and the subcutaneous fat had completely disappeared. Even the hands were greatly wasted. There was a hollowing in the position of the thenar eminence, just as one sees in progressive muscular atrophy of the spinal type, and wasting in the interosseal muscles. There had been slight fibrillation in this case. The intercostal muscles were paralyzed. The wasting of the legs was extreme and the patient ultimately died with diarrhea. The muscles were found to be small and pale, the chief microscopic change being intense granular fatty degeneration of the fibers. A very few normal fibers were seen in some muscles. There was no increase of interstitial tissue. Careful microscopic examination revealed no morbid changes whatever in the spinal cord.

I am convinced that the mere distribution of the atrophy is not a sufficient basis whereon to distinguish special types of this disease. If, as it is believed, the primary trouble is some neural effect, the distribution of the atrophy would have to follow along physiologic lines represented in central functions. It is difficult to understand why certain areas for the atrophy should be selected as the prominent manifestation of a disease which is so generalized as an hereditary or infectious etiology would presuppose. On the other hand, if these primary myopathies are nothing but the late results of a transient polymyositis, as has been contended by some, it is also difficult to understand why there should be so much uniformity in the distribution of the atrophy in the so-called types. As a matter of fact, the types, as such, are exceedingly rare. The mixed or obscure cases are much more frequent and give strength to the view that these types, as such, do not really exist, but are the mere accidental clinical illustrations of a much larger pathologic process than they would presuppose or represent. In the myopathies there is partial preservation of the deep reflexes. In our case the reflexes were neither increased nor absolutely lost.

In the differentiation between spinal atrophy and primary dystrophy much has been made of the presence and absence, respectively, of muscular fibrillation. In our case, fibrillation seems to have been totally wanting, and it is usually regarded that absence of fibrillation is a cardinal sign of primary dystrophy. Gowers says that fibrillation is absent and that this is almost the invariable rule; and yet in his own case, referred to above, he mentions that there was slight fibrillation. Another point of value in the differentiation between progressive muscular atrophy of the spinal type and primary dystrophy is the absence in the latter of the reaction of degeneration or qualitative change in the electrical excitability. As in our case, only a quantitative loss of excitability to both faradic and galvanic currents was observed. On this point Gowers says very emphatically that in a primary dystrophy there is no trace of the reaction of degeneration.

In both progressive muscular atrophy of the spinal type and in the primary dystrophies, the sensibility remains practically normal. There may be in both slight transient pains of a dull character, possibly due in the former to irritation of the sensory elements, and in the

2. Clarke and Gowers, Med. Chir. Trans., vol. lvii, p. 247.

latter to the initial transient polymyositis, if, indeed, the dystrophies are at all myositic in origin.

As a result of my own observations, I feel like seconding Gowers when he remarks that "it seems, therefore, undesirable to form a separate variety of juvenile muscular atrophy, as Erb has proposed. Spinal atrophies may also be juvenile." So also may myositic atrophies.

100 State Street.

PRETUBERCULAR CONDITIONS AND THE TREATMENT OF ASSOCIATED ANEMIA BY HYPODERMIC INJECTIONS OF IRON AND ARSENIC.*

B. R. SHURLY, M.D.

Lecturer on Laryngology, Detroit College of Medicine; Laryngologist, Harper and Childrens' Free Hospitals; Attending Physician, Woman's Hospital.

DETROIT.

It is a well-recognized fact that pulmonary tuberculosis is the cause of more deaths than any other one disease, except pneumonia. In the state of Michigan our mortality record for some years has averaged above 2,500, while in Detroit our last report shows that 327 individuals died from this cause. We are all familiar with the fact that nearly one-seventh of all persons die of tuberculosis, and more than 50 per cent. of the remainder give postmortem evidences of tuberculous foci that had remained dormant or succumbed entirely to the antitoxic properties of our cells.

If this latter astounding and well-conceded fact is true, seven out of ten individuals that reach late adult life have been infected with tuberculosis.

The profession and the laity are awakened to the stupendous problem at hand. Many of us appreciate our inefficiency in battling with the ravages of this disease. We are especially apt to become therapeutic nihilists in the treatment of tuberculosis and to keep most prominently in mind the phenomena of hopeless advanced cases where all therapy has proved unsuccessful. It is with a hope of re-establishing an enthusiasm along the brighter and more encouraging fields of so-called pretubercular and early tuberculous conditions that I present this subject for your consideration.

Our daily routine work in the examination of the chest will divide our patients into five distinct degrees of disease.

First.—The acute miliary or the advanced chronic cases of pulmonary tuberculosis, generally incurable in any climate.

Second.—The moderately severe tuberculosis, a considerable number of whom will recover under proper treatment.

Third.—Early or incipient phthisis, 70 per cent. of whom it is estimated can be cured under favorable conditions.

Fourth.—Bronchopneumonitis and other non-tubercular lung diseases.

Fifth.—Cases with hereditary or acquired predisposition presenting prominent nutritional or constitutional changes, which we may classify for convenience as pretubercular conditions.

Every consumptive of the moderately or advanced type is putting up a fight for life, and we are helping him as best we can. The symptoms of hemoptysis or the chills and fever of the mixed infections are usually signals for a change of physicians or a consultation. It is at these times that the relatives and the physicians become thoroughly alarmed, and no financial or physical effort can be too great to satisfy the anxious minds at these crises.

A most conclusive demonstration of the ravages of the disease up to the time of hemoptysis or when the evidences of mixed infection become pronounced is offered us by the *x*-ray. Two facts are at once apparent. First, phthisis pulmonalis progresses to small cavity formation usually before ordinary skill in percussion and auscultation reveals it; second, *x*-ray examination at the period of hemoptysis or at the onset of fever frequently demonstrates extensive tubercular disease all out of proportion to the physical signs. A keen knowledge of the diagnosis and treatment of the so-called pretubercular stage, which antedates outward tubercular manifestations, is exceedingly important from all points of view.

Those who take careful histories of chest cases and carefully analyze a series of them will most certainly be impressed with the great number of persons who report a prevailing impoverishment or morbid state of the whole system for a considerable period before the apparent development of the local lesions. The general practitioner finds a deep problem in the relations of hereditary and acquired predisposition to pulmonary tuberculosis, and his therapeutic indications must be promptly met.

If I were to state that pretubercular phthisis pulmonalis was as distinctly a stage of phthisis as phthisis incipiens, with prominent fixed diagnostic signs and manifestations, I am confident many would assent. How many of us vigorously supply the therapeutic indications in this curable onsetting stage of tuberculosis? Are we justified in terming this condition tuberculosis from postmortem findings in individuals of this type? No, but the patients should have the benefit of our suspicions. It is impossible to overestimate the value to the patient or the state of timely applied hygiene and treatment in the pretubercular stages.

Some very interesting questions arise along this line of thought. First, where does the so-called pretubercular stage of phthisis end and incipient phthisis begin? Second, what methods of diagnosis have we that differentiate the stages and what treatment must be applied? Third, how much tuberculosis of the lungs may exist before ordinary skill in physical diagnosis can detect it? If we can successfully thresh out these problems and throw the brunt of our efforts on patients exhibiting the phenomena of the pretubercular or the incipient stages, the mortality from consumption would certainly be lowered. The maxim of Tyndale is certainly logical: "that localized tuberculosis does not endanger life of itself so long as the general nutrition begets a reasonable resisting power of the pulmonary tissues." And especially the pulmonary gland tissues, I might add. This is demonstrated to us daily in the postmortem findings in accidental deaths.

We may divide our tuberculous cases into two grand classes. First, the infections that have taken place in strong healthy individuals, who have no evidences of predisposition, acquired or hereditary, such as renowned athletes or prize cattle. Second, those cases which present a prodromal period of impaired general condition from all causes. It is this latter class that I wish to consider.

It is my belief that the pretubercular stage of phthisis, as we now classify it, is, in the vast majority of cases, nothing more than a latent unrecognized tuber-

* Read before the Wayne County (Mich.) Medical Society.

culosis, and the development of the bacillus tuberculosis in many is a problem in cell nutrition, the biochemic phenomena of which we do not understand. The examination of recruits for the armies and navies of the world, performed by men eminently fitted for this work, reveals the fact that many cases of latent or incipient tuberculosis are admitted. The French army shows a record of 7.2 per cent. who soon develop phthisis, while the percentage is higher in the Austrian, German and American armies.

In the light of our present knowledge, we are unable to draw sharp lines of distinction between the pretubercular and incipient stages. There is no tuberculosis without the tubercle bacilli. It is the province of this paper, then, to classify all phenomena that predispose or lead up to the actual demonstration of incipient phthisis. For convenience in arrangement I have adopted and modified the classification of Loomis:

1. Corpulence, viz., the relation of the body weight in pounds to height in feet.
2. Chest conditions. A—Conformation of the Chest. B—Chest measurements. C—Vital capacity.
3. Constitutional conditions. A—Lymphatism. B—Digestive disturbances. C—Chloro-anemia.
4. Character of pulse.

Allow me to exclude from consideration the factors of sex, age, race, previous or present disease of the lungs, septicemia or other thoroughly appreciated etiologic factors.

Corpulence is taken from the French, and it is used to express mathematically any departure from a standard of ratio between weight and height. According to the military tables, a man, at height five feet eight inches, should weigh 150 pounds, having an average corpulence of 26.47. The ratio shown by dividing the weight by the height is 26½ as a standard. We appreciate entirely the important significance in progressive loss of weight without a demonstrable cause as a very constant symptom of onsetting phthisis. This fact of a continued loss in body weight is usually recognized as of importance only when it is followed by a hacking dry cough some months later. Accurate scales and a measurement of height in this class of patients are much more necessary than is generally admitted. A record is certainly as valuable in determining the nutrition of tuberculosis as the weight chart is in infant feeding. A majority of my patients have given a history of steadily increasing loss of weight before the lesions were diagnosed. Loomis reports 50 per cent. in a series of forty cases. Many thousand military observations have established a normal standard of corpulence for men as 26, while the observations of Bonchard show that women should have a normal of 23. A corpulence of 21 is considered abnormally thin.

Associated with steadily increasing loss of tissue is the prominent symptom of general malaise. The daily routine is marked by a substitution of will power for natural automatic power. We may note increasing motor debility, the patient may complain of being "sawed off at the legs," or a weakness in the knees. Sensations become abnormally accentuated or dulled; sleep becomes broken or profound; digestion, changeable respiration, superficial and slightly hurried, as 22 or 24. Many cases show acceleration of the heart with relative falling off of arterial pressure. When these symptoms of disturbance are present, and after the exclusion of acute and chronic diseases, we thoroughly examine the chest and nothing definite can be determined; a true latent tubercular condition exists.

When this complex of symptoms arise, we should give additional attention to the predisposing group of conditions previously enumerated. We are well aware that a single tubercle requires two to four weeks in its process of evolution, and the foci must break down and infect often numerous areas before clinical symptoms appear. Let us consider, further, what danger signals of a possible onsetting tuberculosis are reliable aids to diagnosis.

Our insurance companies are particularly interested in all observations of dangerous chest conditions. We are well aware that there may be many deviations from the normal standard of chest conformation without in any special manner increasing the liability to phthisis. The postures of childhood or occupation may lead to faulty conformations without increasing the tendency to the invasion of the tubercle bacilli. Our suspicions are aroused when we have presented for examination the lean, hollow chest, with marked subclavicular depressions, with prominent spaces between the ribs, with projecting scapulæ, and decided diminution of the antero-posterior diameter.

Considerable and more valuable evidence may be obtained by scientific measurement of a chest. French military observers have placed much importance on what is called a determination of "the vigor of constitution." It is taken successfully in this manner: "Two ordinary measuring tapes are sewed together and the point of juncture rests in the center of the spine. In men the estimations are made at the nipple level, while in women the line of the ensiform cartilage is preferred. The double tape aids in measuring the difference in expansion of the right and left sides, as well as the total chest mobility. The right is usually at least a half-inch larger, although both lungs should show almost equal expansion." A circular measurement below 35 inches is abnormal. The average of measurements taken at the end of forced expiration and at the moment of forced inspiration is defined as the thoracic perimeter. The vigor of constitution is the relation between the perimeter and the height. The thoracic perimeter of a person, according to the French, should never be lower than one-half the height.

The question of vital capacity is important, but the deductions are more subject to error. Considered from its own standpoint alone, it is of little value. Much depends on the previous education of the patient and the experience which the physician may have had in the use of the spirometer. When considered in relation to age, weight and particularly height, important data on respiratory capacity may be obtained. Standards have been made from a great number of cases, and we find that the relation between the height and the capacity should be one to three inches in men and one to two and six-tenths in women. A man of five feet eight inches should not fall under 204 cu. inches. The interrelation of corpulence, thoracic perimeter and vital capacity should be considered valuable aids to a determination of genuine predisposition to pulmonary tuberculosis.

We are well aware that pneumonia, pleuritis, infectious diseases, occupations, direct exposure, etc., are the great etiologic factors, but these are eliminated, as I have previously stated, because they are centers of infection from local causes that can be demonstrated. They do not constitute the true pretubercular conditions. The pretubercular stage in some individuals is marked by a constitutional condition called lymphatism. Pathologic adenoids, tonsils, or hypertrophies interfere

with nasal and nasopharyngeal drainage, the cervical lymphatic chains are taking in septic material and the bronchial glands are involved in like pathologic processes. A latent tuberculosis which it is impossible to diagnose may exist at this time or this type of glandular hypertrophy may take on infection and become a glandular tuberculosis of the lungs.

Another class of individuals may show a series of digestive disturbances prior to tubercular infections. There is a genuine relation between so-called indigestion that exists for months or years antecedent to phthisis. The malnutrition attending disorders or digestion renders the system much more vulnerable to invasion by the bacilli. Over-indulgence in indigestible food has increased this symptom.

It is especially the relation of chloroanemias to the development of phthisis that I wished to discuss and present for your consideration. Some investigators have claimed that an actual antagonism exists between tuberculosis and chlorosis. Some consider chlorotics well under way in the destructive processes of phthisis. However this may be, we can certainly be impressed with the constant attendance of anemic blood changes in cases that show imperfect chest development and continuous loss of weight for which no cause is apparent. It is especially a danger signal in men of tubercular age. Chlorosis ordinarily is not accompanied by loss of weight nor abnormal chest conditions. While the examination of the blood in the late stages of consumption is of no practical value, except that the absence of eosinophiles may be looked on as an unfavorable prognostic sign, examinations in the pretubercular conditions all show that the hemoglobin is diminished out of all proportion to the loss in red cells. Henocque, an extensive observer, says that a diminished supply of oxyhemoglobin characterizes tubercular chloroanemia. The hemoglobin never falls as low as in chlorosis. Early phthisis is usually marked by a slight leucocytosis, slight diminution of the red blood corpuscles, and a moderate reduction in hemoglobin.

Laache has found 29 per cent. of tubercular chloroanemias in the early stages with a diminished hemoglobin. Labbe, who has investigated extensively, regards chlorosis as a symptom of some other affection often as a first manifestation of a latent tuberculosis. If we should consider chlorosis or the simple anemias just as a pleuritis to be many times nothing more than the initial evidence of a slumbering tuberculosis, the proper hygienic and medicinal treatment can produce a complete recovery. A number of cases of anemias showing with many of the other symptoms of impaired resistances enumerated have come under my observations during the last year or two. The method of treatment has proved so successful that the plan may be of interest.

I have selected only a few cases as a preliminary report, as it is necessary that six months or a year should elapse before we can determine our results. Even the therapeutic nihilist will admit that iron, arsenic and the hyphophosphites have a wide field of usefulness, and as these are used hypodermically the effects are more pronounced, more rapid and permanent. Wherever iron is indicated, it can be administered in the form of the green ammoniated citrate, while arsenic can be given as the arsenate of soda or the arsenate of iron. The injections are given deeply into the muscles of the buttocks or back. There is almost no pain attending the operation and in indicated cases the general feeling of well-being which follows the proper dosage allows the treatment to speak for itself. A blood examination should be made, after which punctures may be given daily. An increase of 5 to 10 per cent. hemoglobin a week can be expected.

It is unnecessary to consume time with a consideration of the therapeutic action of these substances. Nothing, however, has been written in English on the subject of the hypodermic use of these medicinals. Italian and French literature since 1890 has had much to say on the method, and the fact that it remains to-day as the usual treatment is sufficient recommendation for its usefulness.

The green ammonio-citrate can be introduced into the system without danger in doses ranging from .05 to .1 gram, while the arsenate of soda is given in .001 to .002 gram. The treatment should be started with the smaller dosage. A full dose of iron by this method produces a reaction within five minutes. A feeling of tension in the head is experienced, the face flushes and tingling sensations are noticed. There may be waves of nausea or sudden vomiting if a larger dose than 1½ grain is administered. A full dose gives a sensation of a warm flush or glow over the entire body. The pulse quickens and a general feeling of well-being follows the proper dose. The arsenate shows its usefulness as a general reconstructive and stimulant to nutrition. The hypodermic method obviates all injury to the teeth or stomach and constipation is not produced. It is contraindicated in fever and active hemorrhage. Iron and arsenic are too well known to need any argument in their favor. The hypodermic method produces all the good effects more promptly and without the serious results produced when these remedies are taken by the stomach.

The character of the pulse in determining the pretubercular stage of consumption is quite important. Dr. Wells, of Chicago, and Dr. H. P. Loomis have made excellent reports in regard to their findings along this line. Two prominent characteristics are noted. A change in position has but little influence on the very thin. The examination must be made some hours after eating and when the patient is free from excitement. Ordinarily the pulse is found to vary on an average of fifteen beats in a healthy man. I am unable to make practical use of this observation, as few patients under examination are not subject to the pulse effects of excitement. The relative feebleness of arterial pressure is an important sign. The normal arterial pressure of 15 to 18 is found by French investigators to be always less than thirteen and often only ten. The lessened arterial pressure may be nothing more than a factor in the problem of increased susceptibility. The pulse of lowered pressure is usually tense and hurried, 100 to 120. In the early stages of phthisis the sphygmograph shows a sudden ascent and descent of the curve. The arterial pressure can be readily taken in the office with a Gärtner's or preferably a Cook's pressure apparatus.

In conclusion, it is evident that no one or two signs can be relied on as conclusive proof of an approaching phthisis. Yet, taken together, we are given enough danger signals to warn us. Active measures may be enforced at this stage with the best results. If the strenuous fight against the ravages of tuberculosis was advanced to the latent tubercular stages, the stages of lowered resistance, consumption would not attain its high mortality. Hypodermic medication with iron, arsenic, hyphophosphites and strychnin offers a prompt and powerful reconstructive adjunct to the necessary pure air, good food and sensible hygiene.

HYDATID CYST OF THE LIVER IN CHILDREN.*

WILLIAM FITCH CHENEY, M.D.

Professor of Principles and Practice of Medicine, Cooper Medical College; Physician to Lane Hospital.

SAN FRANCISCO, CAL.

In children, hydatid cyst of the liver appears to be a very rare disease, especially in the United States. Our text books on pediatrics dismiss the subject with but few words. Koplik, so far as I can find, makes no reference to it at all in the last edition of his work. Rotch says "Echinococcus cysts are so rare in early life that they need merely be mentioned as of possible occurrence." Holt says "Echinococcus disease of the liver, while rare among adults in this country, is almost unknown in children. I have been able to find but two recorded cases in America." American medical journals likewise pass the matter by without comment. In the Index Catalogue of the Library of the Surgeon-General's Office, brought up to 1903, there are but four references to the subject of hydatids in children, two in Italian literature, one in Russian, and one in French, but none at all in American journals.

This infrequency of the affection in children is not, however, a peculiarity of the United States. Peiper[1] says: "The number of children infected appears very small when we consider the fact that at this period of life, in consequence of close association with dogs, they are particularly endangered. This observation is confirmed by all statisties. In the Pomeranian investigation, among 139 patients, only 13 were under 15 years of age." It seems odd, therefore, that within ten years, with a comparatively small material falling under my observation, I have seen two cases of hydatid cyst of the liver in children. Because of the rarity of the affection at this time of life, it has seemed that reports of these cases deserve to be published in detail, and I present them with the hope that their publication may lead to the discovery of others on this coast.

CASE 1.—An Italian boy, aged 7, was brought to the children's clinic at Cooper Medical College, March 31, 1897.

History.—His symptoms were vague; occasional pain in the right side, head ache now and then, and during the week previous occasional vomiting spells. His appetite was fair, he slept well at night and his bowels moved regularly. The mother had noticed a swelling in the boy's right side about two years previous, that had never disappeared since its discovery, but rather had grown a little larger as time went by; and it was this that induced her to bring the child for examination.

Examination.—He was a bright, intelligent looking little fellow; his face indicated perfect health, but his body and limbs were somewhat emaciated. There was no icteric hue to be detected in skin or conjunctivæ. The tongue was heavily coated with a yellowish fur. In the region of the liver a swelling was perceptible on inspection, extending downward to the level of the anterior superior spine, and inward to the median line. On palpation this swelling was evidently somewhat tender; it was smooth in outline, not nodular; hard throughout most of its extent, but in one part, about three inches below the border of the ribs, was distinctly fluctuating; there was a sulcus or groove, perceptible to touch and to sight, running across the swelling just below the border of the ribs, apparently separating the mass below from the liver above. Finally, the lower border of the tumor was sharp and distinct, so that the examining fingers could easily be inserted beneath it; and the tumor moved on deep inspiration.

On percussion, there was dullness over the area of swelling, directly continuous with the liver dullness above, but not extending to the lower edge of the tumor as perceptible on palpation; for tympany replaced the dull note across the lowest portion of the tumor, over a zone about two inches in width. The dullness extended to the median line internally and to the axillary line externally. Directly back of the axillary line and posteriorly a tympanitic note was found, the dullness not extending in that region below the normal liver dullness. The urine was examined and found normal; the heart and lungs likewise gave no evidence of disease.

Ordinary means of examination were supplemented by the use of the *x*-ray, at that time still a novelty. The fluorescent screen showed the upper border of the liver, rounded and distinct, rising and falling with each respiration; but it failed to give any idea of the relation of the parts below the level of the ribs, and, therefore, left the character of the tumor as much in the dark as before. It was next decided to resort to diagnostic aspiration with a needle at the point where fluctuation had been found. By this means a fluid was obtained that was turbid and looked like thin pus. Under the microscope it showed broken down pus cells but no hooklets of hydatids.

Diagnosis.—Plainly the differential diagnosis concerned two organs: the liver and the right kidney. With regard to the liver, was this a malignant tumor, an abscess or a hydatid cyst of this organ? With regard to the kidney, was it a sarcoma or a pyonephrosis? Malignant tumor of the liver was excluded by the smooth contour of the swelling, the normal upper border as shown by the *x*-ray, the slow growth of the mass and the moderate emaciation and constitutional disturbance of the child. Liver abscess could not be positively excluded; it is rare in children, but its main signs are those that were present in this case, viz.: enlargement of the liver, usually downward, with tenderness over the swelling; and its chief symptoms are gastrointestinal—coated tongue, loss of appetite and occasional vomiting. The symptom lacking from the clinical picture of liver abscess was fever, which was never found in this boy during the time he was under observation. Nevertheless this condition was looked on as one of the possibilities, especially after the hypodermic needle showed the presence of pus in the swelling. As for hydatid cyst of the liver, there was nothing to speak for it, after the microscope failed to show hooklets in the fluid withdrawn by the needle. If this fluid had been clear, chemical examination would have been made for albumin and sodium chlorid, even though no hooklets were found with the microscope; but its turbidity misled us and this chemical examination was not made. There was no characteristic fremitus present, such as is supposed to be a diagnostic sign of hydatid cyst, and nothing in the clinical history pointed to this affection more than to another.

The argument in favor of the kidney as the point of origin of the tumor, rather than the liver, was the apparent line of demarcation between the lower surface of the liver and the tumor proper; for there was a depression across the swelling, just below the lower border of the ribs, which could be both seen and felt. In favor of a diagnosis of sarcoma of the kidney was the fact that the tumor had pushed the bowel in front of it, and, therefore, came probably from behind the peritoneum. The condition is not uncommon in childhood and the character of the tumor it produces is not unlike that which was presented here. The point against sarcoma was the absence of bloody urine at any time. The diagnosis of pyonephrosis had as its basis the pus found on aspiration, and the chemical examination made of the fluid obtained, to determine whether it was urine. The addition of nitric acid to this fluid after partial evaporation gave crystals, which under the microscope strongly resembled those of nitrate of urea.

Operation.—In any case it was evident that operation was necessary, and that an exploratory incision would reveal the exact nature of the swelling and determine the proper plan of procedure. This was, therefore, advised, the parents consented and the boy was sent to Lane Hospital, where he was operated on by Dr. Emmet Rixford, April 11. When the abdomen was opened it was seen at once that the tumor involved the structure of the liver; but it was thought, from the surface appearance, to be an abscess of the liver, and the organ was, therefore, stitched to the edges of the incision, the wound packed with gauze and the boy put back to bed to await the formation of adhesions before opening the abscess.

* Read before the California Academy of Medicine, March 29, 1906.

1 Peiper: "Echinococcus Disease," Deuts. Klin.,

The secondary operation was performed April 14, 1897. On incising the tumor, instead of a gush of pus, as was expected, there came out a thin turbid fluid and numerous transparent, glistening cysts, the size of small grapes, that at once settled the diagnosis as hydatids. The cavity was washed out and the wall of the mother cyst removed. This cyst when distended must have measured between 4 and 6 inches in diameter. After its removal, there still seemed to be too much liver left for so small a boy. A long hypodermic needle was, therefore, passed from the cyst cavity upward into the liver beneath the ribs, and with this there was withdrawn perfectly clear, transparent fluid. An incision was then made in the track of the needle, and another cyst, equally as large as the first, evacuated of its contents of fluid and daughter cysts. Drainage tubes were inserted, the wound dressed and the boy put back to bed. He made a slow but perfect recovery. The purulent fluid obtained with the hypodermic needle before operation came from the lower cyst, which had begun to suppurate. The upper cyst, lying beneath the ribs, contained the characteristic clear fluid of hydatids. The groove across the swelling, which had proved such a stumbling block in diagnosis, was the depression between the upper and the lower cysts. The two were separate and perfectly distinct.

CASE 2.—A boy, aged 10, was brought to the children's clinic on Jan. 4, 1906. He was born of Italian parents in Buenos Ayres, Argentine Republic. In May, 1903, the family had moved to Oregon, and again one year later to the San Joaquin valley, California, where the boy lived until he was brought to San Francisco in November, 1905, on account of his health.

History of Disease.—His illness dated back two years to an attack diagnosed typhoid fever, which lasted for only three weeks. Following that attack he remained weak and complained much of pain and fullness in the right side, especially on stooping to pick up objects from the floor. It was then discovered that he had an enlargement in the right side of his abdomen, which never subsequently disappeared. In October, 1905, he had an attack of fever, with increased pain in his right side, this attack lasting three days. He was then brought to San Francisco, on the advice of a Fresno physician, and taken to the Children's Hospital. He remained under observation in that hospital for six weeks. His parents were finally told that the boy had an enlargement of the liver, but that the case was not one for operation. Then in the search for further advice his parents brought him to the Cooper College Dispensary.

For two years the boy had persistently complained of a sense of weight and fullness and frequently of sharp pain in his right side; but during this time had gained in flesh and had never seemed ill except for the feverish attack in October, 1905. He had always had a good appetite, there was no vomiting, his bowels were regular, there had never been any jaundice, and never any edema of feet or limbs.

Examination.—On physical examination he was found to be a well-nourished, healthy-looking boy. The heart and lungs showed no disease, the urine analysis was normal. The feces showed no abnormalities. In the region of the liver a rounded mass was visible, extending as low as the navel and as far internally as the median line. This mass was smooth, rounded and elastic. Manifestly it took its origin from the under surface of the liver, because the sharp lower edge of the liver could be felt projecting from the tumor's upper surface, just below the border of the ribs. The mass did not seem to be at all tender. No hydatid fremitus could be elicited. Percussion dullness was found over the mass, continuous above with the normal liver dullness, the total extent in the mammary line being 19 c.m.

Blood Examinations.—Numerous blood examinations were made by Dr. H. R. Oliver. On January 4 the hemoglobin was 80 per cent., the red corpuscles 4,250,000, the white corpuscles 25,000; and the differential count showed: polymorphonuclears 68 per cent., large lymphocytes 8, small lymphocytes 24, eosinophiles 2. January 6 the leucocytes numbered 14,000; January 14, 15,000. January 22 the hemoglobin was 70 per cent., the red corpuscles 3,750,000, the white corpuscles 16,000, and the differential count as follows: Polymorphonuclears 70 per cent., large lymphocytes 3 per cent., small lymphocytes 25 per cent., eosinophiles 2 per cent. From these reports it will be seen that while a leucocytosis of moderate grade was constantly present, there was never any marked increase in the eosinophiles.

Diagnosis.—From the physical examinations repeatedly made it seemed clear that the liver was the organ concerned, that the tumor originated from it, that this tumor contained fluid of some sort, and was not simply the liver of chronic passive congestion, fatty infiltration, or hypertrophic cirrhosis. Malignancy was excluded by the boy's state of blood and nutrition, and specific disease by the lack of history or signs. The conclusion was therefore inevitable that we had to do with either hydatid cyst or abscess. In favor of hydatid cyst was a history of constant intimacy with dogs, with which pets the boy had been closely associated in Buenos Ayres, with the absence of chills, recurring fever, emaciation, or constitutional disturbance during the two years that the enlarged liver had obviously been present. In favor of abscess there was nothing except the leucocytosis, which was not so high as it should have been, with sepsis, and lacked the characteristic predominance of polymorphonuclears. To settle the diagnosis an aspirating needle was introduced through the abdominal wall January 20, directly over the lower portion of the tumor, where elasticity seemed most definite. The needle at the first puncture withdrew the clear, water-like fluid diagnostic of hydatid cyst, and in this fluid hydatid booklets were at once found with the microscope. The diagnosis thus being positively settled, the case was transferred to the surgical clinic for treatment.

Operation.—On January 23 the boy's abdomen was opened by Dr. Stanley Stillman at Lane Hospital. The cyst was found to originate from the under surface of the liver. It was aspirated, and when empty the wall was peeled from its bed and so removed intact. No daughter cysts were found within its cavity. When distended, it measured about 5 inches in diameter. The wound was drained and the boy made a good recovery, except for a fistulous track that healed slowly.

DISCUSSION OF THE DISEASE.

The points bearing on the diagnosis of hydatid cyst of the liver in children, as brought out by the preceding cases, are the following:

1. *History.*—Inquiry should always be directed to the child's intimacy with dogs. The second child lived with dogs in Buenos Ayres, played with them, slept with them, ate with them, and kissed them. As the *Tænia echinococcus* is a parasite of the dog family, such a history is extremely suggestive of the possibility of infection of the child. The history of illness is mainly one of symptoms due to mechanical pressure by the cyst: pain, fullness, weight, dragging and interference with movements such as stooping, together with gradual enlargement, visible to parents and to child. The general health—digestion, nutrition, strength—is interfered with slightly or not at all, even though the symptoms last for months or even years. Fever is not a symptom unless the cyst has suppurated, and then the clinical history may become one of sepsis, as from any other collection of pus.

2. *Physical Examination.*—It is usually easy to determine that the tumor is situated in the liver, though the problem is not always a simple one, as the first case reported proves. The fact that the tumor contains fluid of some sort is also usually apparent from its rounded outline and the elastic feel of it. But the peculiar thrill described as the hydatid fremitus is not always present—it was certainly absent in both the cases reported, and therefore can not always be depended on for diagnosis.

The aspirating needle best answers the question as to what the cyst contains; and the clear, transparent fluid of a hydatid cyst is diagnostic even to the naked eye. It must not be forgotten, however, that the introduction of an aspirating needle into a hydatid cyst is not without

danger. In addition to the possibility of damage to blood vessels or to intestines, such as exists with any puncture of the abdominal cavity, there are in this instance two other dangers: (a), autosemination, or the scattering of hooklets in the abdominal cavity by subsequent oozing from the cyst at the site of the puncture; or, (b), symptoms of poisoning such as fever, nausea, vomiting and collapse, due to the toxicity of the fluid and its absorption after leaking out at the site of puncture. These dangers must be borne in mind and diagnostic puncture should not be looked on as a procedure without risk.

3. Laboratory Examination.—Under the microscope the sediment from hydatid fluid usually shows the peculiar bodies called hooklets, found in no other fluid but this; but their absence does not negative the diagnosis. The blood usually shows a moderate leucocytosis, persistent so long as the cyst remains; but the eosinophiles are not necessarily increased here, though Cabot says: "Eosinophilia is the rule in hydatid disease without suppuration."

Except for the examination of the hydatid fluid obtained by diagnostic puncture, and except for the blood count, there are no methods of laboratory diagnosis available in these cases.

BACTERIURIA.

REPORT OF A UNIQUE CASE.

G. PAUL LA ROQUE, M.D.

Lecturer and Bedside Instructor in Surgery, University College of Medicine; Clinical Assistant St. Luke's and Virginia Hospitals, Etc.

RICHMOND, VA.

I believe the importance of this affection to be generally underestimated and am positive that the condition is vastly more common than is generally supposed.

The term bacteriuria implies the presence of bacteria in the urinary tract above the compressor urethræ muscle. Micro-organisms are always present in the normal male urethra, certainly its anterior portion, and may be found in the urine of most people provided it is voided through this structure. Aside, however, from the trivial urethral discharge occasionally provoked by certain of these organisms, their presence in the anterior urethra causes no symptoms. Apart from the bacteriuria, which always exists as a part of pyuria, there is a simple bacteriuria, without pus, or at least such small quantities of this as to be of minor clinical significance. There is this difference regarding the etiology of the two affections: Pyuria always indicates suppuration in some part of the urogenital apparatus; simple bacteriuria may indicate the earliest or terminal phenomenon of true inflammation with little or no pus formation, or an eliminative process, the bacteria being deposited in the urinary conducting apparatus from the blood and lymph, or having gained entrance to these organs, through continuity or contiguity from anatomically related structures.

The organisms most frequently deposited in the urine from the circulation include the typhoid bacillus in cases of typhoid fever, the tubercle bacillus in miliary tuberculosis, staphylococci and streptococci in general septicemia and pyemia, rarely the pneumococcus, and the undetermined organisms of scarlatina and smallpox, as manifested by the urinary phenomena of these infections.

From continuity and contiguity of structure, the most frequent causes of bacteriuria include urethritis, prostatitis, seminal vesiculitis, colitis, enteritis, perinephric abscess, peritonitis and any focus of inflammation in the female generative organs. Every case of spinal cord disease with paralysis of the sphincter vesicæ is attended by bacteriuria.

MICRO-ORGANISMS CAUSING THE CONDITION.

By far the most frequent organism causative of simple bacteriuria is the *Bacillus coli communis*. These organisms readily gain entrance from the intestine in cases of chronic constipation, acute enteritis, dysentery, colitis, typhoid fever; or from the prostate, seminal vesicles and urethra, where they are abundant in chronic inflammatory processes involving these structures. They frequently enter along the ducts leading to the bladder and are carried by instruments from the urethra. In women with unclean habits, relaxed sphincters, fistulous communications or even slight wounds of the genito-urinary organs, bacteriuria is common. Ascending vulvovaginitis is a common cause. From perinephric abscess, the colon bacillus and other organisms penetrate the kidneys. From the intestine and all retroperitoneal sources they may enter the ureters. Many cases of bacteriuria are consecutive to colitis and frequently a history of dysentery may be elicited.

Generally, the colon bacillus is found in all forms of bacteriuria, often in pure culture. In the typhoid form of the disease they may be associated, but often the typhoid bacillus is present alone. Of 132 cases reported by Elliott, the *Bacillus coli communis* was the infective agent in 75. Other bacteria found were streptococci, staphylococci, bacillus proteus, bacillus subtilis, sarcinæ and undetermined bacteria, alone and in combination.

FREQUENCY OF THE AFFECTION.

The frequency of the affection can scarcely be even approximately estimated. A single intravesical instrumentation practically always carries with it bacteria from the urethra. Such bacteriuria is generally transient in duration. Should the bladder or posterior urethra be traumatized by the operation it will almost certainly result in inflammation.

Proctitis, hemorrhoids and other lesions in the rectum are attended by bacteriuria so frequently as to make it safe to believe that this complication exists in nearly every case. Its frequency in old women and as an eliminative process in cases of typhoid and many other infectious fevers have been mentioned. Typhoid bacilli exist in the urine in from 20 to 30 per cent. of cases of typhoid fever usually in pure culture, appearing generally in from the second to the third week of the disease, commonly associated with albuminuria, without pus, and rarely producing the morbid changes of cystitis, even though they persist for years. Young, however, reports two cases of true chronic cystitis due to the typhoid bacillus.

PATHOLOGY.

With the exception of hyperemia and excessive mucous secretion along the whole urinary tract and generally slight albuminuria, simple bacteriuria in a healthy, well-drained urinary apparatus produces none of the changes of true inflammation. In the presence of partial or complete obstruction or diminished vital resistance in these structures, it is easy for a simple bacteriuria to cause the phenomena of true inflammation with pus formation.

SYMPTOMS.

When first voided, the urine is cloudy, generally acid in reaction and of a penetrating, offensive odor. The turbidity is diffuse, does not settle on standing, and can

not be removed by acidulation, filtration or sedimentation. The bacteria may be sedimented by centrifugation after the addition of alcohol. There may or may not be a trace of albumin. Microscopic examination shows a field swarming with actively motile bacteria.

The local symptoms when present are: Generally slight frequency of micturition, mild *ardor urinæ,* occasionally incontinence, and in children there may be nervous disturbances. Rarely a slight mucoid urethral discharge may be noted. So long as the epithelium of the urinary tract remains healthy there is no absorption of bacterial toxins. If abrasions exist, or if from the imperfect drainage incident to prostatic hypertrophy or urethral stricture, the bladder epithelium from prolonged contact with the concentrated toxins loses its vitality, absorption occurs, and mild fever, with lassitude and digestive and nervous disturbances, may be noted. In many cases there are no subjective signs.

DIAGNOSIS.

It is essential to distinguish simple bacteriuria from that in combination with pus. In the latter there is always positive pyuria, in the former never so. Pyuria implies an area of suppuration in some part of the genito-urinary tract and is generally associated with symptoms referable to its location.

As to the point of entrance of the micro-organisms into the urinary tract, it may be said that whenever they enter through the kidneys as in septicemia, typhoid or scarlet fever, there is always a positive albuminuria. When they enter below the renal pelvis, as from the genitalia and from the lower intestinal tract, from instrumentation, ascending inflammation, pelvic disease, colitis or proctitis, the presence of albuminuria is dependent on the previous condition of the kidneys

As to the nature of infection, alkalinity of the urine always means infection by either the staphylococcus or bacillus proteus vulgaris. All other organisms, save when mixed with these, produce an acid urine. The history of the case will suggest the probable causative organism, though it must be remembered that the colon bacillus is by far the most frequently found germ.

TREATMENT.

Treatment has for its purpose removal of the cause, prevention of true inflammation and elimination of the organism.

Intestinal and urinary antiseptics, such as urotropin salol or boric acid, with large amounts of drinking water, are indicated. Vesical instrumentation and (unless cystitis is actually present) irrigations are to be avoided. The traumatism incident to these procedures is apt so to diminish local resistance as almost certainly to result in true inflammation. Many cases of postoperative cystitis can be avoided by judicious efforts to avoid catheterization. In patients with spinal cord lesions associated with paralysis of the compressor urethræ muscle, bacteriuria is a constant attendant affection; and when, in addition to this, ammoniacal urine is allowed to be retained, cystitis is sure to result. Since in these patients the cause of death is so commonly ascending urinary infection, the dangers of bacteriuria should be recognized. Every one knows the importance of thorough, gentle and rigidly aseptic bladder drainage as a part of the treatment of these cases.

For the cases so frequently dependent, especially in old people, on colitis and constipation, free purgation, with regulation of diet and intestinal antiseptics, are essential. Janet often practices, in addition, colonic lavage for two or three months.

REPORT OF A UNIQUE CASE.

History.—An obese, slightly sclerotic, ignorant, partially deaf maiden, aged 55, suffered during the summer of 1905, a a rather severe attack of dysentery. Within a month after this, she began to notice frequent burning urination and the passage of foul, intensely turbid urine, the act of micturition being followed by a sensation of having incompletely emptied the bladder, but at no time did she pass blood or gravel. These signs became progressively but gradually more marked and caused her great mental anxiety, fearing that she was suffering from some dreadful disease. She consulted her local physician, who at once made a vaginal examination. She was told that there was a peculiar "growth" in her vagina, and the physician removed a piece of this and sent it to a pathologist for microscopic examination. The latter reported the tissue to be fibroid in character. Ever since the tissue was removed she has concentrated her mind on the genital apparatus and has been in constant fear of cancer.

She was referred for treatment to Dr. Stuart McGuire, to whom I am indebted for the privilege of studying and reporting the case.

Examination.—Vaginal examination showed a small, rigid canal with the hymen present and save in the upper portion intact. In the upper portion there was a wedge-shaped deficiency of about one-half inch. When she stands erect, there is slight bulging of the anterior vaginal wall.

Cystoscopic examination showed slight general redness of the mucous membrane of the bladder, but no real sign of disease.

Urine.—The first specimen was so extremely turbid as to give at first sight the appearance of chyluria. This material, however, was not present. The turbidity was diffuse and did not precipitate on long standing. The urine was foul and penetrating in odor, acid in reaction and contained no albumin. Microscopic examination showed amorphous acid urates, and every field was swarming with motile bacteria, but pus was absent.

REMARKS.

A diagnosis of bacteriuria was positive and this was the source of all the trouble. The growth in the vagina was the hymen, from which a wedge-shaped piece had been removed. The slight bulging of the anterior vaginal wall which was not sufficiently marked to be called cystocele was doubtless due to the incision in this structure produced for removing the wedge-shaped piece of hymen. The woman was the victim of pronounced cancerophobia.

The bacteriuria in this case definitely followed dysentery; the organisms entered the urinary apparatus below the kidney, as shown by the absence of albumin.

506 East Grace St.

THE STRENUOUS LIFE AND ITS EFFECTS IN DISEASE.*

S. T. RUCKER, M.D.

MEMPHIS, TENN.

At the outset I desire to state that I am not opposed to the strenuous life when it is safeguarded by proper diversion and sufficient rest; but there is a wrong way to live the strenuous life, and it is of this I desire to speak. Work, *per se,* never kills, but it is the way one works. A bank account kept by continuous deposits in excess of the checks drawn is a good business method. It is when the account is overdrawn that one receives notice to make good the deficit. Mental and physical exercise in legitimate channels is good. It promotes health, happiness and a long life, but when by prolonged endeavor under high pressure an individual overdraws

* Read at the Seventy-third Annual Meeting of the Tennessee State Medical Association, Memphis, Tenn., April 10-13, 1906.

his supply of energy he must replenish it or suffer the consequence. The temperate life, the systematic methods of diversion and relaxation as practiced by Mr. Gladstone, the great English statesman, and Grover Cleveland, twice president of the United States, is well known and will serve to illustrate the proper way to live the strenuous life and to succeed without sacrificing health and strength. Mr. Gladstone not only had regular times for diversion and recreation, but when the affairs of state became too onerous and tiresome he would turn loose all duties and go to his country home to rest. There he would walk, run, chop wood and do other exercises to divert the mind and to invigorate the body. At 85 years of age he retired from the premiership of England in good health and with a clear, active mind. We are all familiar with Mr. Cleveland's fondness for fishing and hunting, and remember while he was president how often he would lay aside official duties and go to the bays of Virginia or North Carolina to indulge in his favorite sport. At 70 years of age he is still in active life, hale and hearty. The quality of a man's thought, energy and ideals depends largely on the condition of his health. The now famous saying credited to Dr. Osler that a man is practically useless after 60 years of age is true of most men, but it should not be, and would not be, if we would remember that "all work and no play makes Jack a dull boy." Every busy man should have a hobby to which he can devote his leisure; he should also have seasons for sport in the country, like hunting and fishing. A married man should spend more time with his family and in reading wholesome literature. Sunday, the best day of all for rest and recreation, is perhaps the most neglected. It is not only a religious duty to cease all labor every seventh day, but it is essential to the health and well-being of man. He will do better work and live longer.

HIGH PRESSURE OF EDUCATION.

The physiologic functions of the human economy are governed by the simple law of demand and supply. The executor of this law is the cell. It contains a life principle called the nucleus. The nucleus gives the cells energy and the power to reproduce themselves rapidly and manifold, when supplied with the proper food, as found in the healthy blood current. Every tissue and part of the body is an aggregation of cells, like the bricks that make up a wall. The process called metabolism is cellular activity. By thought and muscular action tissues are consumed; by cell proliferation they are replenished. In order that the proper equilibrium be maintained in this process and the cells be not consumed faster than they multiply, it is decreed that we must take time to eat, rest and sleep. Prolonged endeavor, overwork and worry, with insufficient food and rest, break the equilibrium, exhaust vitality and invite disease. This condition is too prevalent in our American life. We go under high pressure and our pace is too rapid. Our schools and colleges, where we should be taught how to live, are not free from this spirit of stress and strain. Students are goaded to tasks beyond their powers, and, being anxious to stand at the head of their classes, they hurry their meals, overstudy, take little time for rest and, as a natural consequence, many become nervous wrecks. I have under observation now a patient who is a sad illustration of this forcing method of pedagogy. He had an active mind and bright prospects ahead for a useful career. He studied hard and was cramming for his final examinations before graduating from college, when a collapse came, and his mind was left a chaotic wreck. There is a mental incoordination and an inability to concentrate his thoughts. His talking and writing are centrifugal and erratic. I have undertaken the task of re-educating him into mental co-ordination and concentration, with probabilities of never succeeding.

Analyze the graduating classes of the best female colleges, and the crop of neurasthenic girls will out-number those who are able to enter on the duties of married life. I have under treatment now one of these unfortunate girls. She is anemic and her brain is not properly nourished. Her mind is unstable and her ideas are erratic. She has overdrawn her account and is now trying to make good the deficit by rest and forced feeding.

BUSINESS LIFE TOO STRENUOUS.

In business and professional life the conditions are even worse. The average business man is always worried and overworked. He has no leisure. He sees so little of his family they scarcely know him. He is chained to commercialism of thought and taste. He worships it by day and dreams of it by night. His business methods become questionable and pernicious. He takes all the law allows, and does the other fellow if he can. He makes money, makes it honestly if he can, but makes it. After all, it does not pay. It is like chasing a phantom. He pursues his business to a certain point, then his business pursues him. He is no longer in control. He thinks in a circle and acts like an automaton. He is a slave to his business and can't turn loose—until perhaps he is released by sudden death or is sent to a sanitarium, broken in health, to die without enjoying the pleasures of a long life that is due him.

A striking coincidence is that as our strenuous civilization progresses the number of cases of mental and nervous diseases increases. There is hardly a state institution that is not overcrowded. Texas is just completing additional buildings to accommodate the increasing number of insane patients, and applications now on file show more than 600 patients seeking admission that can not be accommodated when the hospital is completed. Besides these state institutions, there are scores of private sanitariums for treating the milder cases of these unfortunate patients. Nervous breakdown has been called our national disease, and not without good reason. Arteriosclerosis, a disease largely due to nervous strain and hyperarterial tension, formerly a rare disease, is now prominently and extensively treated of in leading text-books on practice.

Another striking illustration of the effect of our strenuous civilization in producing disease is the rapid increase in the number of deaths from heart disease. One hundred and twenty-five persons died recently in one week in New York City from heart disease, while the deaths for the corresponding week in 1904 were 56.

Another phase of this subject I would like to treat of at length, but for lack of time I will only say enough to provoke discussion or start you to thinking. The stress and strain, worry and anxiety attendant on fierce competition in business and professional life is enervating and devitalizing. It embarrasses or suspends organic function and lessens resistance to morbid influences. As a consequence we fall easy victims to almost any disease, such as pneumonia, tuberculosis, typhoid fever, cancer and grave kidney lesions. If a man who lives this kind of life undergoes a surgical operation of any consequence, it is exceedingly hard for him to recover. His vitality is so lessened that any traumatic lesion will probably undergo necrosis or gangrene instead of healing.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER XXV.

GENERAL ANESTHETICS.

The subject of general anesthesia concerns the surgeon much more than it does the physician, but, as in the matter of antisepsis, the physician must have some knowledge of this subject, and we shall, therefore, briefly consider the more important members of the group of general anesthetics, their uses and their probable limitations.

Narcotics have been used from time immemorial, for producing unconsciousness during surgical operations, but nitrous oxid has been in use longer than any other agent now employed for inducing general anesthesia. It is more than 100 years since Sir Humphrey Davy first suggested this use for nitrous oxid, but his suggestion met with no response, and it was not until many years later, in 1844, that Horace Wells, a dentist of Hartford, Conn., employed it for that purpose and thus introduced what he was pleased to term "a new era in tooth-pulling."

It was at one time supposed that nitrous oxid caused unconsciousness merely through asphyxia, and while this is a very important factor, it has been shown that nitrous oxid also causes a depression of the central nervous system resembling that of the methane derivatives such as chloroform and ether, and complete anesthesia has been produced without asphyxia by using a mixture of oxygen and nitrous oxid under pressure. This would probably constitute an ideal method of inducing anesthesia were it not for the mechanical difficulties and the expense that it necessarily involves.

Nitrous oxid is usually administered only for a short time, it being necessary to discontinue it so soon as marked cyanosis of the face occurs, after which the anesthesia lasts for about a minute or two. It is the safest agent which we possess for general anesthesia, the death rate being approximately one in half a million cases, but aside from its use in dentistry and for inducing unconsciousness, preliminary to other anesthetics, its application is extremely limited.

It is impossible to estimate the value to mankind, and to surgery in particular, of the introduction of anesthetization with ether by Morton and Jackson just fifty years ago. Its use by Dr. Crawford W. Long, in Georgia, antedates by more than two years the real work of Morton and Jackson in introducing the method, but the greatest credit is due those men for their splendid achievement in gaining general recognition for this boon to humanity.

Shortly after the introduction of general anesthesia by the use of ether Sir J. Y. Simpson announced his discovery of the use of chloroform as an anesthetic, and this latter agent soon displaced ether almost entirely in many parts of the world. Even at present chloroform is used almost exclusively in England and in several other European countries.

From time to time other agents have been proposed as substitutes for chloroform and ether, and some of them have enjoyed a greater or less popularity for a time, only to sink into obscurity.

In this connection we may mention a few of those which will be remembered even by the younger generation of physicians, and which have not yet fallen into complete disuse.

Ethyl bromid and bromoform have been used to some extent as general anesthetics, and it has been suggested that the typical bromid action might be obtained from them, but the action is that of the entire molecule. Both of these have passed almost completely from use as general anesthetics, largely, perhaps, because of the unstable character of the substances themselves and the accompanying uncertainty of the action of the decomposition products.

Petroleum ether, or benzin, because of its cheapness, is sometimes used in vivisection experiments, but not on man.

The use of mixtures of varying composition appears to offer a peculiarly interesting field for experimentation in connection with general anesthesia.

Of the several mixtures that have been used from time to time, that popularly known as the A. C. E. mixture, containing 1 part of alcohol, 2 parts of chloroform and 3 parts of ether, is perhaps the one that has been used most widely. This also referred to occasionally as the one-two-three mixture, was, at one time at least, quite popular in England. While it has been urged against this mixture that the differences in volatility of the three substances prevents the anesthetist knowing just what he is administering, it is a fact that the vapors of all three tend to pass off together, and, furthermore, the object is to induce anesthesia and to avoid an excess of the anesthetic and the action of the mixture seems to be as easily controlled as that of chloroform, while not so much is required as of ether alone. The alcohol and chloroform raise the boiling point of the mixture above the temperature of the lungs and this probably secures some of the advantages claimed by Schleich for the mixture of ether, chloroform and benzin.

A mixture containing 57 parts of ether and 43 parts of chloroform has been suggested as having some advantages over either of its component parts. It was at one time quite widely recommended under the title of M. S. mixture, but appears to have fallen into disuse, having probably no advantage over the better known A. C. E. mixture mentioned above.

Dr. Carl Ludwig Schleich of Berlin some years ago recommended the admixture of 5 per cent. of petroleum ether, or benzin, with ether and chloroform, as a general anesthetic. This preparation had been used by Schleich in nearly 500 cases in which he obtained excellent results, such as absence of excitement and of the excessive salivary discharge so frequently seen with ether, while the depressing effect of chloroform on the heart was not observed. Despite these and other advantages, which he cited at the time, the mixture never attained much popularity, and even Schleich himself appears to have discontinued its use in favor of an ethyl chlorid mixture.

The mixture of ether, chloroform and ethyl chlorid has been proposed at different times and in varying proportions; the one proposed by Schleich contains 2 parts of ethyl chlorid, 4 parts of chloroform and 12 parts of ether, and is fairly representative of this class.

The advisability of using mixtures of any kind, for general anesthesia is still an open question, particularly in view of the fact that the several chemical substances themselves are far from being absolutely stable, even under the most favorable conditions, chloroform particularly being readily decomposed and forming, as one of the possible decomposition products, the really dangerous substance known as phosgene.

Magnesium Sulphate.

S. J. Meltzer has recently suggested the use of a solution of magnesium sulphate for inducing general anesthesia. For this purpose he advised the intraspinal injection of 1 c.c. (15 minims) of a 25 per cent. sterilized solution of magnesium sulphate for each 25 pounds of body weight. This method possesses no advantage over cocain used in the same way for producing anesthesia of the lower parts of the body, but general anesthesia is induced and persists for some hours, and the method, therefore, may possibly prove serviceable in controlling the convulsions of tetanus.

Marked depression of the respiration occurs, and Maury and Teague, working with guinea-pigs and injecting the solution intraperitoneally have found that the repetition of the primary anesthetic dose, on the following day, sometimes causes death. It must, therefore, be used only with extreme caution. The sudden introduction of a small quantity of this solution into the blood vessels will immediately prove fatal.

Scopolamin-Morphin and Similar Solutions.

Reference has been made to the use of scopolamin-morphin for producing anesthesia, and while a number of deaths are reported as having attended its use, the combination is still being recommended by some as constituting a satisfactory method.

Morphin sulphate alone or in combination with atropin sulphate is very commonly employed preliminary to chloroform or ether narcosis, and appears to have well established uses in this connection.

E. Fraenkel reported some ten years ago that he had habitually used a mixture of morphin, atropin and chloral for hypo-

dermic injections, preliminary to narcosis, for twenty-two years, without an accident. He claimed that this procedure lessened to an extraordinary degree the amount of chloroform or ether used to maintain anesthesia.[1]

1. The solution used by Fraenkel was made as follows:

Morphin muriate	gr. iiss	15
Atropin sulphate	gr. ¼	015
Hydrated chloral	gr. iv	25
Distilled water	ʒss	15

He injected hypodermically from 1 c.c. to 1.25 c.c. (15 to 19 minims) fifteen minutes before the commencement of the ether or chloroform administration.

Fraenkel further asserts that this mixture is free from the objectionable side actions of morphin, being well borne by patients who could not take morphin by the mouth or hypodermically.

Ethyl Chlorid.

A substance which bids fair to rival chloroform and ether as a general anesthetic, under certain conditions at least, is ethyl chlorid.

This substance is extremely volatile, boiling at from 12.5 to 13 C. (54.5 to 55.4 F.), and it is necessary, therefore, to keep it in sealed tubes. The ends of the tubes are drawn out to fine capillary tubes which are then sealed, or the capillary opening is closed by a metal cap which may be replaced when a part of the contents of the tube has been used. When required for use the glass tip is broken off, or the metal cap unscrewed, when the heat of the hand causes the ethyl chlorid to volatilize, forcing out a fine stream which may be directed against the surface which is to be frozen for local anesthesia, or the stream may supply the vapor for inhalation to produce general anesthesia.

Ethyl chlorid induces anesthesia more rapidly than ether does, and when it is withdrawn the patient recovers more quickly, thus saving an average of some twelve minutes on each operation, hence it is likely to prove useful on the battlefield and in great calamities when a number of operations must be performed with a minimum loss of time.

Figures purporting to give relative degrees of danger for various anesthetics are notoriously unreliable, but it seems probable that ethyl chlorid is less dangerous than chloroform and somewhat more dangerous than ether. Among the objectionable features of ethyl chlorid are increased cost, the explosive character of the vapor, extreme volatility, the accompanying waste of material and the difficulty of administration.

Action of Chloroform and Ether.

It would hardly be profitable to discuss here in detail the actions of chloroform and ether, but there are certain important points concerning them which are so frequently overlooked that we will consider them briefly.

While there are records of as many as 40,000 consecutive anesthetizations with chloroform without a fatality, this is only possible in the case of skilled anesthetists working with carefully selected cases. Certainly no such results are possible in ordinary practice, and with that alone are we concerned at present.

We must always remember that the production of general anesthesia is a grave matter in which death is an ever present possibility despite the utmost care, and of which there is actual danger unless caution is observed. The possibility of fatal complications in all cases of general anesthesia would appear to make it necessary that the patient or his friends be informed of this fact, if for no other reason than to protect the physician administering the anesthetic.

Each case must be carefully considered when selecting the anesthetic, and neither chloroform nor ether should be used exclusively. Ether being the safer, however, should have the preference, when it is not contraindicated, and chloroform should not be used unless the anesthetist is experienced and is reasonably skilled in the use of it.

The following are some of the principal advantages and contraindications of both of these agents:

The vapor of ether is inflammable, that of chloroform is not, and the latter is to be preferred when operations are to be performed by gas or lamplight. In this connection, however, we must not forget that chloroform vapor coming in contact with an open flame is readily decomposed into chlorin and hydrochloric acid, and that it will be necessary, therefore, to provide for free ventilation to eliminate these decomposition products. If ether must be used under such circumstances, the light should be placed as high above the level of the mask as practicable, since ether vapor is heavier than air. The thermocautery, of course, can also ignite the vapor of ether.

An acute cold is a contraindication to the use of any anesthetic, but more particularly to the use of ether. Ether is also contraindicated in bronchitis, because of the great irritation caused by the relatively large amount necessary to maintain anesthesia; it is likewise contraindicated in nephritis, since the kidneys take part in the excretion, and, of course, suffer from the irritant action.

In extremely hot weather, that is, when the thermometer is above 93 to 95 F. (34 to 35 C.), ether is volatilized so rapidly that the atmosphere contains amounts which may prove objectionable, and it often becomes very difficult to maintain complete anesthesia.

When it is absolutely imperative to reduce the stage of excitement to the minimum, or when it becomes necessary to secure complete anesthesia rapidly, ether is contraindicated and chloroform is to be preferred when it is not specifically contraindicated for other and more important reasons. In the latter event ethyl chlorid may be used, or preliminary unconsciousness may be induced by nitrous oxid, and this followed up by the use of ether.

Chloroform is very commonly preferred by obstetricians, but deep anesthesia is not usually induced in such cases.

In fatty disease of the heart chloroform is contraindicated because it also induces fatty degeneration of that organ, and for this reason it is not advisable to use it repeatedly on the same person in succeeding operations.

Chloroform is much more toxic to the heart than ether, and there is a much narrower margin of safety between the amount necessary to induce anesthesia and that which causes death, chloroform being thirty-six times as active as ether in inducing anesthesia, but forty-eight times as toxic.

A matter of the greatest practical importance, especially for the unskilled anesthetist, is the very brief interval between the cessation of respiration and the stopping of the heart beat with chloroform, giving very little chance to resuscitate the patient after respiration has stopped. With ether the interval is much longer, and the prompt resort to artificial respiration, while the body is raised higher than the head, very commonly results in saving the patient.

This variation in the action of anesthetics and also the fact that the condition of anesthesia is a dangerous one, according to the degree to which it is carried, will be more fully appreciated if we have a clear conception of the several stages of anesthesia and the rapidity with which a patient may pass from one stage into the other.

These several stages are usually designated as: 1, the stage of excitement; 2, the narcotic and anodyne stage; 3, complete anesthesia; 4, paralysis and death.

The acceleration of the circulation noticed in the first stage is similar to that produced by the ingestion of alcohol or alcoholic beverages, and the production of this stage was one of the uses to which ether was put long before it was used as an anesthetic in surgical operations. From this stage the patient usually passes quite gradually into the second or narcotic stage.

In the narcotic stage sensibility becomes impaired, but there is not infrequently a persistence of reflex action which manifests itself in a form of delirium or wild excitement. This is usually an indication of faulty anesthetization and is a complication that can be avoided in many instances by the more careful preparation of the patient for the anesthetic. In the majority of instances, however, the patient passes rapidly into the third stage, that of complete anesthesia.

This third stage differs from the second in that there is complete absence of reflex action, even of the conjunctiva, which is usually, though erroneously, advocated as the most satisfactory test for complete anesthesia. A satisfactory surgical anesthesia is indicated by complete relaxation of all of the muscles of the body, regular breathing, deep inspirations and a fully relaxed lower jaw. The widely prevailing though barbarous habit of touching the conjunctiva should never be resorted to.

By the careful administration of the anesthetic this stage of surgical anesthesia may be continued for a considerable period of time, but we must never forget that it is ever bordering on, and may at any moment pass into, the fourth or paralytic stage, when respiration ceases, the heart beats become feebler, and, unless vigorous and prompt restorative measures can be resorted to, may cease entirely.

The Administration of Ether.

While it has been asserted that the administration of anesthetics is an art that can not be taught or learned but must be acquired, it is also true that there are certain points or rules that have been sufficiently well established to warrant their being heeded, and the general conduct of anesthetization can best be illustrated, perhaps, by giving the method pursued by an ordinarily careful anesthetist.

The patient is made thoroughly comfortable, in a recumbent position, on a table or wheel stretcher, if in a hospital, with a pillow just sufficient to raise his head but slightly.

The mouth is freed from false teeth and other foreign materials, and the lips and nose are anointed with petrolatum to avoid the accompanying irritation from contact with the anesthetic.

A pad of moistened gauze is then placed over the eyes to avoid irritation by the fumes of the anesthetic.

All these several stages should be carefully explained to the patient so as to assure him that every possible precaution is being taken to provide for his comfort and well-being, and to gain his confidence, for the more important feature of administering the anesthetic itself.

After the patient has been prepared and his confidence gained by explanation of the several stages of the preparation, he is allowed to accustom himself somewhat gradually to the taste and smell of the ether. To accomplish this the cone or gauze containing the anesthetic is held some slight distance from his face, gradually brought closer as the patient becomes more and more accustomed to the inhalation. If the anesthetist has been successful in gaining the confidence of the patient he will find that the latter will pass through the preliminary stages of anesthesia without a struggle, and that complete relaxation will be secured with a minimum of the anesthetic.

When a patient has been completely anesthetized very little of the anesthetic will suffice to maintain the condition and the further efforts of the anesthetist can be devoted to observing the respiration and the surface reflexes of the patient in order to prevent his reverting to the second stage of anesthesia, or passing on into the much-to-be-dreaded stage of paralysis of the respiratory center.

With chloroform the passing from one stage of anesthesia to the next is much more rapid than with ether, less of the anesthetic is used, more air must be allowed, and there is, of course, a correspondingly smaller margin of safety in the stage of complete surgical anesthesia.

Since all of us can not become expert anesthetists and yet must at times perform that office, this advantage of ether is well worth consideration.

The greatest immediate danger from the inhalation of ether or chloroform, but more especially of the latter, is the administration of the vapor in too great concentration. One hundred volumes of air require approximately from three to four volumes of ether vapor, and 100 volumes of air require about one volume of the vapor of chloroform to induce anesthesia, but an increase of from two to three volumes in the concentration of the ether, or only one volume of chloroform to 200 of air will prove fatal in a short time.

While we do not actually measure the relative volumes of air and vapor, as a rule, these figures will serve to show the comparative danger of the two substances, for it is many times more difficult to avoid overstepping narrow boundaries than broad ones.

When a perfectly safe ratio is maintained the delay in inducing anesthesia often proves vexatious, and the anesthetist may be urged to expedite the operation by increasing the concentration, but he should never forget the grave responsibility which he has assumed and should never permit the impatience of others to induce him to exceed the limits of caution, save only in those grave emergencies where delay in operation may mean death to others who are awaiting their turn.

Official Anesthetics.

ÆTHYLIS CHLORIDUM.—U. S.—Ethyl chlorid occurs as a colorless, transparent, very volatile liquid, having a characteristic, rather agreeable odor and a burning taste. It is only slightly soluble in water, but is readily miscible with alcohol.

Ethyl chlorid is a haloid derivative, and is prepared by the action of hydrochloric acid gas on absolute ethyl alcohol. It is usually marketed in hermetically sealed glass tubes, and when liberated at ordinary room temperature volatilizes almost instantly. The resulting gas is very inflammable and the substance itself should never be used in proximity to an open flame or fire.

For local anesthesia the liquid in a fine spray is applied to the surface to be anesthetized.

The average amount necessary to induce general anesthesia is from 5 to 10 c.c. (75 to 100 minims).

ÆTHER.—U. S.—Ether is a transparent, colorless, volatile liquid having a characteristic odor and a pungent, sweetish taste. It should contain 96 per cent. by weight of absolute ether or ethyl oxid and about 4 per cent. of alcohol containing a little water.

The per cent. content of ethyl oxid or absolute ether in a given specimen is a matter of considerable importance when the substance is to be used for anesthesia. The official ether, when exposed to air, appears to absorb moisture, thus materially reducing the anesthetic value of the ether. The practice that has long been followed of sending out ether in hermetically sealed cans is an efficient safeguard against this absorption of moisture.

CHLOROFORMUM.—U. S.—Chloroform is a heavy, clear, colorless liquid having a characteristic ethereal odor and a burning, sweet taste. It should contain not less than 99 per cent. by weight of absolute chloroform and from 0.6 to 1 per cent. by weight of alcohol.

Chloroform when not pure is readily decomposed, forming chlorin compounds that may prove to be extremely dangerous to the patient. Even chloroform that corresponds to the requirements of the Pharmacopeia may be decomposed in the presence of damp air and heat, and the substance should, therefore, be carefully preserved in small, well-stoppered bottles.

The Army Medical Bill.—How much we have learned from our Oriental friends, says *Collier's Weekly*, will be indicated by the disposition of the Army Medical Bill, now before Congress, which might be described as a measure to make the United States Army fit to fight in time of war. If the Japanese triumph taught the military world anything, it was the importance of keeping soldiers healthy. That a sound man will fight better than a sick man, that an army in good physical condition will beat an army depleted by disease, seem truisms. Yet, until the little yellow men achieved their unbroken record of victories no military authority had ever given due weight to the hygienic problem. Our Army is now officered for a strength of 100,000 men, except the medical department, which is officered for a strength of less than 50,000 men. This bill seeks to increase the medical faculty to a strength sufficient to care for the health of the fighting men. In our late war with Spain the medical department lacked numbers, equipment and authority. The result was fourteen soldiers dead from disease (mostly preventable) to one from wounds. In the recent war in the Far East the Japanese lost one soldier from sickness to four from shell, bullet and bayonet. Their medical department was sufficient, and, in its own province, paramount. Only 5 per cent. of our forces escaped the hospital. In an equal length of time, and under more trying conditions, so reckons Dr. L. L. Seaman, in his recent book, but 15 per cent. of the Japanese army reported sick. Fighting strength depends not more on the number of soldiers on the roster than on the proportion able to bear arms when the time of action comes. Painful though it be to our national pride, the inference is inevitable, that with equal forces enlisted, a Japanese army with a hospital record of only 15 per cent. would defeat an American army with a hospital record of 95 per cent. An adequate medical force is as essential to an army as a skillful trainer to a pugilist.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, JUNE 16, 1906.

To give our readers the complete proceedings of the House of Delegates and of the General Meetings at Boston, we omit some departments from this issue and curtail others.

THE SUCCESS OF THE BOSTON SESSION.

The Boston session of the American Medical Association was a remarkable success in every way. In numbers it exceeded any previous gathering of medical men anywhere, unless it be the Moscow International Medical Congress. Over four thousand seven hundred registered, exceeding by eighteen hundred the largest previous registration—that of Atlantic City in 1904. A large number of physicians were present who did not register, besides invited guests and associate members who are not included in the above figures. It is not an exaggeration to say that at least six thousand physicians were in attendance. An unusual number were accompanied by their wives and friends, so that one local newspaper's statement that fifteen thousand visitors were in Boston as a result of the American Medical Association session was probably true.

In spite of the unusually large attendance, the accommodations were most ample, and the fear that Boston could not take care of the Association was not realized. The hotel committee had done its work well. Good rooms in first-class boarding houses and hotels were still on the list when the last comer had been satisfactorily located.

The local Committee of Arrangements deserves the highest commendation for the magnificent manner in which the Association was entertained. Never before in the history of the organization have the plans for its care and entertainment been conceived and executed on such a grand scale and with such attention to the minutest detail. With it all there was not the slightest attempt at ostentatious display. Not a single offensive advertisement was to be seen, but throughout the entire meeting everything from the greatest to the least was carried out with precision and with that dignity and graciousness which are so characteristic of this famous city.

The scientific exhibits, the clinical exhibits, and the practical clinical demonstrations at the hospitals and elsewhere provided sufficient scientific entertainment to have well repaid attendance at the session, even had there been no section work—indeed, this elaborate clinical feast might have detracted from the section work had not the attendance been so phenomenally large. As it was, the overflow at some of the section meetings found ample opportunity to be both entertained and enlightened by these exhibits.

The session of 1906 will be a memorable one in the history of the organization on account of the perfect unity of feeling which developed throughout the entire profession and from all sections of the country. Never before has it been so apparent that the end and aims of the profession are not limited to personal and individual benefits nor to local conditions, but are coextensive in philanthropy and beneficence with the welfare of the entire community, and that when the great interests of the public are concerned all individual differences are at once lost in that altruism which so characterizes the true physician.

PHOTODYNAMIC ACTION.

H. von Tappeiner originated the term photodynamic action to designate the toxic effects exerted by fluorescent substances in the light. He first worked with certain chemical substances, the chinin derivatives, and showed that the toxic action was due to a definite nucleus in the molecule. Grethe and later Raab studied the marked toxic effect that certain fluorescent substances have on the paramecium; and Raab traced this to the action of light on these chemicals since in the dark they were quite ineffective. The sunlight does not affect non-fluorescent poisons in this way. The fluorescent substance must be in solution and in order to obtain the toxic effect the living cells must be immersed in the fluid as fluorescent light itself has no effect; further, light passing through one fluorescent solution has lost its power to cause a second solution to fluoresce. Photodynamic action and absorption of light are not identical, for it has been shown that many actively absorbing substances show no increased toxicity following the absorption.

The fluorescent substances include a large number of chemicals belonging to the anilins. As examples may be mentioned eosin, magdala red, erythrosin, fluorescein and acridin. All fluorescent substances exert some photodynamic action but they vary a great deal in their intensity. Weaker solutions are more active in proportion to their concentration than strong solutions, and the intensity of action also bears a direct relation to the intensity of the light. Both sunlight and artificial light are effective, the former being the more powerful.

The first work carried out by Raab, v. Tappeiner and others on the effect of fluorescent substances in light

was principally on infusoria. More recently, the effect of fluorescent fluids has been studied on many other substances, including such bodies as bacteria, toxins, antitoxins, ferments of various kinds, parasitic conditions of the skin and neoplasms.

Bacteria and fungi, as a rule, are susceptible to the photodynamic action of many fluorescent substances. Some ferments show a decided susceptibility to this action, others much less. Diastase, trypsin, invertin and chymosin are affected especially by eosin and magdala red, while other fluorescent bodies do not affect them. Katalase is not affected by any fluorescent body, so far tested.

Jodlbauer and v. Tappeiner discovered the interesting fact that in the presence of oxygen the photodynamic action on enzymes is very much stronger than in its absence. There is undoubtedly an important relation existing between oxidation and this action, but from the work already done it appears that they are not identical and not always parallel. Oxygen, however, seems to be an important condition for the development of this activity.

An interesting field is opened up by the work on bacterial and other toxins. Eosin and other anilins act injuriously on diphtheria and tetanus toxin, diphtheria and tetanus antitoxin, ricin and snake venoms. Guinea pigs, for instance, can be protected from one minimum lethal dose of diphtheria toxin by the injection of eosin with subsequent exposure to sunlight. The protective action is not great, however. The activity of the agglutinin of ricin and of the interesting bodies in snake venoms (neurotoxins, hemolysins, agglutinins) is more or less diminished by eosin and erythrosin in sunlight. In the dark no effect is noted. It has also been found that complements and precipitins are acted on by these fluorescent substances, but the immune body or amboceptor is not affected.

If one injects a fluorescent body such as eosin, under the skin of an animal and then exposes this part to the sunlight, a marked reaction occurs, which consists essentially in the formation of areas of necrosis and sloughing. v. Tappeiner and others have applied this observation to the treatment of superficial tumors, lupus and other skin lesions which are injected with eosin and exposed to sunlight or artificial light. This, apparently, has met with some success, but the data thus far obtained are hardly sufficient to draw any definite conclusions.

Summing up, we see that photodynamic action is a form of destructive activity which acts on various bodies much as do the usual chemical and physical agents. On the whole, substances which are highly resistant to the latter, also conduct themselves in a similar manner to this action, while the more labile bodies show a corresponding susceptibility. From a practical standpoint, it furnishes us with another means whereby the properties of various complex bodies may be studied and compared, and it may become of real value as a therapeutic agent in the field of phototherapy.

THE EMOTIONS AS FACTORS IN THE ETIOLOGY OF DISEASE.

Although the mechanism may not be clear, it is generally recognized that emotional states constitute a distinct and definite factor in the etiology of a number of morbid affections. This relation is observed more especially, though not exclusively, in connection with disorders involving the nervous system. Even apart from disease, various phenomena appear in the train of emotional influences. Among the more common of these are tremor or muscular twitching, vasomotor spasm (pallor) or paresis (blushing), cardiac inhibition (syncope) or release of normal cardiac inhibition (tachycardia, palpitation), horripilation, secretory disturbances (hyperidrosis, anidrosis, involuntary discharges). No definite and constant relation exists between the character of the emotional disturbance and the resulting manifestations. An interesting presentation of some effects of fright is contained in a communication read recently before the Bristol Medico-Chirurgical Society by Dr. J. R. Charles,[1] but many of the statements made therein are applicable also to other forms of emotion.

Emotional influences constitute one of the most important factors in the etiology of hysteria, with its protean manifestations, and not rarely they act as potent therapeutic factors. A similar causative relation has been observed also in some cases of exophthalmic goiter. Emotional perturbations, particularly fright, are included among the classic causes of chorea, and they have been noted as antecedent in some cases of paralysis agitans. Not rarely they are assigned as causes of the attacks of epilepsy. They may precipitate enuresis in a child previously continent and they may give rise to night terrors in an impressionable subject. Attacks of asthma and of migraine are said sometimes to be superinduced by emotional influences. Attacks of gout may be excited in a similar manner, and sugar may be made to appear in the urine as a result of profound mental strain. Depressing emotions appear to lower the bodily resistance and thus to facilitate, if not to invite, bacterial invasion, and the impression prevails that fear predisposes to infection in times of epidemic.

In what manner emotional influences operate under the conditions discussed must for the present remain a matter for speculation. It may be surmised in a general way, however, that they result in a disturbance of functional balance and merely precipitate conditions for the development of which the necessary factors are already present.

THE SURGICAL VALUE OF THE DIFFERENTIAL LEUCOCYTE COUNT.

Enumeration of the corpuscular elements of the blood, both red and colorless cells, is so well established a procedure as to require no special advocacy at the present time. It must be borne in mind, however, that the information acquired in this way will prove of greatest

1. Bristol Medico-Chirurgical Jour., March, 1906, p. 23.

value according as it is weighed in connection with the other clinical phenomena present. Alteration in the number of blood corpuscles is due to so many different causes that a careful study of all the signs and symptoms will often be necessary, and is always to be advised, in order to determine the particular cause in any given case. A determination of the relative number of the several varieties of leucocytes, besides, will often yield valuable information, sometimes even when the number of colorless corpuscles is not increased. Decisive as is at times the information thus gained in the diagnosis of affections ordinarily requiring only medicinal treatment, it may be of vital significance in the recognition and treatment of disorders requiring surgical intervention, and more especially with regard to the severity and prognosis. As the result of a careful and extended study of the subject Dr. Chas. Langdon Gibson[1] arrives at the opinion that the differential blood count and its relation to the total leucocytosis constitute the most valuable diagnostic and prognostic aid in acute surgical diseases furnished by any of the methods of blood examination. Its chief value consists in indicating the existence of suppuration or gangrene, the increase in the number of polynuclear cells under such circumstances being disproportionately great as compared to the leucocytosis. The normal number of leucocytes is placed at between 5,000 and 10,000 and the normal proportion of polynuclear cells at 75 per cent. An increase beyond these figures may be accepted as an indication of the presence of some morbid process in the body, but especial significance is to be attached to a disproportionate increase in the number of polynuclear cells. When the latter is present it will be found that the lesion is a severe one, or that absorption is active, or that both of these conditions prevail. In order to record graphically the varying degrees of disproportion between the two factors mentioned, and to make comparisons from day to day, Dr. Gibson has devised a chart in which the horizontal base line corresponds to 10,000 leucocytes on the one hand and 75 per cent. of polynuclear cells on the other hand. The greater the disproportion between the two will be the vertical distance between a point on the leucocyte level and another point on the polynuclear level. The greater this distance the more severe is the lesion, the less the bodily resistance to the infection present and the graver, therefore, the prognosis. We appear to have here not only a guide to diagnosis and in prognosis, but also an indication for or against surgical intervention.

1. Annals of Surgery April, 1905, p. 485.

Medical News

CALIFORNIA.

Medical College Will Rebuild.—The College of Physicians and Surgeons, San Francisco, expects to have its new building open and ready for work by the beginning of the fall term.

Hospital at Gilroy to be Built.—In spite of the fact that Mr. Henry Miller is a heavy loser in the recent earthquake and fire, he will allow no change to be made in the plans for the Gilroy Hospital, which he is having erected at a cost of $100,000.

New Hospital.—The Angelus Hospital, Los Angeles, was formally opened for inspection May 14. The building represents an outlay of more than $200,000 and has incorporated in it the latest ideas in hospital construction. It is a four-story structure, and as nearly fireproof as possible.

Postgraduate School in Los Angeles.—The Los Angeles Postgraduate School has been organized and will be affiliated with the medical department of the University of Southern California. The officers of the institution are: Dr. Walter Lindley, president; Dr. Ernest W. Fleming, vice-president; Dr. W. W. Richardson, secretary, and Dr. John C. Ferbert, treasurer.

Commencement.—The Oakland College of Medicine and Surgery held its first graduating exercises June 1. A class of four was graduated, and the addresses of the evening were made by Mayor Mott of Oakland, and the Rev. Charles R. Brown, and the degrees were conferred by Dr. Frank L. Adams, president of the college.——Cooper Medical College held its annual commencement exercises May 9. Mr. Horace Davis and Dr. Charles N. Ellinwood delivered the addresses, and a class of 30 was graduated.

ILLINOIS.

Personal.—Dr. Philip F. Gillette, Elgin, has been appointed a member of the medical staff of the Illinois Hospital for the Incurable Insane, Bartonville.——Dr. W. T. Lynn of Shelby County celebrated his ninety-first birthday anniversary May 28.——Dr. Frank S. Whitman, superintendent of the Illinois Northern Hospital for the Insane, Elgin, has resigned, to take effect July 1.——Dr. Thomas W. Keys, Leroy, left for a three months' visit to Great Britain, June 2.

Chicago.

Deaths of the Week.—The total deaths from all causes for the week ended June 9 were 523, 58 more than those reported for the preceding week. This is equivalent to an annual death rate of 13.31 per 1,000. Pneumonia caused the greatest number of deaths, 77; consumption caused 45; nephritis and violence (including suicide), each 43; heart diseases, 42; cancer, 32; nervous diseases, 31, and acute intestinal diseases, 27.

Commencement.—The twenty-fourth annual commencement exercises of the College of Physicians and Surgeons, the College of Medicine of the University of Illinois, were held June 5, when degrees were conferred on a class of 226 by President Edward J. James, of the University of Illinois. The doctorate address was delivered by Dr. William E. Quine, dean of the college.

NEW YORK.

New York City.

Personal. Dr. Albert M. Judd, Brooklyn, was caught between his own and another automobile on June 1 and severely bruised.

Quarantine Inspected.—The consulting board of health officers of the port of New York, after making a tour of inspection, reported very favorably on the administration of the service during the past year. The duties of the station were discharged with little interference with commerce or the welfare of passengers. The new buildings on Swinburne Island, which have been erected during the past year, were also inspected and approved.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended June 2, 931 cases of measles, with 38 deaths; 351 cases of tuberculosis, with 179 deaths; 347 cases of diphtheria, with 57 deaths; 192 cases of scarlet fever, with 18 deaths; 49 cases of whooping cough, with 6 deaths; 85 cases of varicella, with 1 death; 25 cases of typhoid fever, with 6 deaths, and 22 cases of cerebrospinal meningitis, with 17 deaths, making in all 2,012 cases, with 325 deaths.

Coroner Arraigns Hospital System.—At a meeting of superintendents of hospitals throughout the city on June 7, the subject of transferring patients from one hospital to another was discussed and the reasons set forth for the impracticability of Coroner Harburg's ordinance fixing a penalty of $100 in every case where a superintendent refuses admission to a sick person in an ambulance or orders the transfer of a patient who is dangerously ill. Under such an ordinance all hospitals would have to admit contagious diseases and insane patients, as well as those suffering from insomnia or old age. Dr. Armstrong of Bellevue refuted the accusations that moribund patients had been transferred to keep down the death rate of the hospital.

NORTH CAROLINA.

April Deaths. During April 242 deaths were reported, equivalent to an annual death rate of 14.4 per 1,000. The principal causes of death were: Consumption, 36; pneumonia, 33; heart disease, 28; diarrheal diseases, 19, and violence (including suicide), 14.

Graduating Exercises.—At the graduating exercises of the North Carolina Medical College, Davidson, April 3, degrees were conferred on a class of 24. Dr. Benjamin K. Hays, Oxford, delivered the address.——The fourth annual commencement exercises of the University of North Carolina, Medical Department, were held at Chapel Hill, May 11. The address of the evening was delivered by Dr. Robert Lee Payne, Norfolk, Va., and a class of 11 received diplomas.

State Society Meeting.—The fifty-third annual meeting of the Medical Society of the State of North Carolina was held in Charlotte, May 29, 30 and 31. The meeting was called to order by Dr. Robert L. Gibbon, Charlotte, who introduced the new president, Dr. Edward C. Register, Charlotte. The welcome to the delegates was extended by Hon. C. T. Guthrie, and the response was made by Dr. Benjamin K. Hays, Oxford. The president, in his address, "Higher Standard Preliminary Education for Medical Students," made a strong appeal for better and higher standards for entrance into the ranks of the profession of the state, and pointed out where the state fell below the standard of other states in this particular. He urged strongly the better literary and practical training of students before entry to medical college. The chief topics of discussion during the meeting were the pure-food movement and the nostrum evil, and resolutions were adopted urging on the state representatives in congress the necessity of radical action on both subjects. On the evening of May 30 the society met with the State Board of Health and discussed matters pertaining to the health of the commonwealth. The following officers were elected: President, Stephen D. Booth, Oxford; vice-presidents, Drs. Charles M. Strong, Charlotte, John E. McLaughlin, Statesville, and William F. Hargrove, Kinston; secretary, Dr. David A. Stanton, High Point, and treasurer, H. McKee Tucker, Raleigh. Morehead City was chosen as the place for the next annual meeting.

PENNSYLVANIA.

Philadelphia.

Jefferson Commencement.—Jefferson Medical College celebrated its eighty-first annual commencement June 4. The class was composed of 213 men, and the diplomas were awarded by Hon. William Potter, president of the board of trustees. The total number of graduates is now 12,019.

Personal.—Dr. Richard Sharpless Davis was appointed resident physician to the Medico-Chirurgical Hospital.——Dr. and Mrs. George McClellan sailed for Europe June 16.——Dr. S. I. Eber, resident physician in Mount Sinai Hospital since its opening, was tendered a farewell reception June 3.

Health Report.—The total number of deaths reported for last week reached 496, an increase of 52 over the week previous and an increase of 74 over the number for the corresponding week of last year. The principal causes of death were: Typhoid fever, 24; measles, 3; pertussis, 9; diphtheria, 7; meningitis, 3; consumption, 57; cancer, 21; apoplexy, 21; heart disease, 41; acute respiratory disease, 50; gastritis, 7; enteritis, 26; Bright's disease, 40; suicide, 6; accidents, 23, and marasmus, 9. There were 282 cases of contagious disease reported, with 32 deaths, as compared with 309 cases and 39 deaths reported in the preceding week, and 189 new cases of typhoid fever were reported, as compared with 170 in the previous week.

VIRGINIA.

Commencements.—The University College of Medicine held its annual commencement exercises at Richmond, May 17. Dr. Stuart McGuire, president of the college, delivered the commencement address, after which the diplomas were awarded.——The faculty of the Medical College of Virginia, at its meeting, May 9, declared 45 students of the graduating class of that institution to be doctors of medicine.

Amalgamation of Medical Colleges.—Committees of the Medical College of Virginia and the University College of Medicine, Richmond, are at work with the view to consolidation of the two institutions. The propositions under consideration are that the two colleges should be consolidated under the name of the Medical College of Virginia, with Dr. Stuart McGuire as president of the consolidated colleges; that the corporation of the University College of Medicine cease to exist and its board of trustees be abolished; that the faculty of the present two colleges have equal representation in the faculty of the consolidated institution, and that the buildings of the Medical College of Virginia become the home of the amalgamated institution.

WASHINGTON.

Fever Closes College.—An epidemic of typhoid fever at Gonzaga College, Spokane, has caused the authorities of the institution to close the institution for six weeks.

State Board Appointed.—The governor has announced on May 24 the following appointments on the State Medical Board: Dr. Casper W. Sharples, Seattle, to succeed himself; Dr. H. A. Wright, Wilbur, to succeed himself, and Dr. Kenneth B. Turner, Seattle, to succeed Dr. Ellsworth E. Shaw, Walla Walla.

Damage Suits Won and Lost.—The Supreme Court decided against Dr. H. E. Ayers, Mohler, who appealed from the decision of the lower court in the damage suit brought by Thomas Froman, Spokane, in which a judgment for $5,000 was rendered against the appellant.——The suit of Roy Millis, Spokane, against Drs. Donald G. Russell, Henry B. Luhn and James B. Munly for $20,000 damages for alleged malpractice in the setting of a broken leg three years ago, was decided in favor of the defendants, April 17.

Personal.—Drs. Frank J. Vankirk and William D. Kirkpatrick, Bellingham, are spending the summer in Europe.——Dr. William B. McCreery, Tacoma, has been appointed physician of Pierce County, vice Dr. Thomas B. Curran, Tacoma, resigned.——Dr. Daniel M. Angus has resigned from the Prosser city council.—Dr. J. L. Lane, Redmond, has been made physician at the state penitentiary, Walla Walla, succeeding Dr. John C. Mack.——Drs. Ellsworth E. Shaw and Yancey C. Blalock, Walla Walla, have been appointed assistant surgeons for the Oregon Railway and Navigation Company.——Dr. William L. Ludlow, health officer of Seattle, has resigned, to take effect August 1.

WEST VIRGINIA.

Personal.—Dr. D. E. Stephan, traveling medical examiner for the Baltimore & Ohio, has been appointed medical examiner, with headquarters at Fairmont.——Dr. and Mrs. Frank L. Hupp, Wheeling, left for Europe June 10.——Dr. B. B. Wheeler, Clay, has been elected assistant physician of the McKendree Hospital, Fayetteville.

Ill and Injured.—Dr. Samuel E. Bailey, Parkersburg, who has been seriously ill with pneumonia, is now securely convalescent.——Dr. Joseph E. Robins, Claremont, was seriously injured in a collision between his buggy and a street car in Charleston, April 5. His companion, Dr. Timothy L. Barber, Charleston, had several ribs broken.——Dr. Emery W. Strickler, Shinnston, was thrown from his horse May 7 and sustained painful injuries.——Dr. Charles A. Barlow, Benwood, was kicked in the abdomen by a horse April 4, and seriously injured.

WISCONSIN.

Smallpox.—The village of Roscoe has been alarmed by the appearance of smallpox; 27 cases have been reported, and the village schools have been closed.——Five cases of smallpox are reported in one house in Madison.

Commencement Exercises.—The Milwaukee Medical College held its annual graduation exercises May 31, when a class of 30 received diplomas from the president, Dr. William H. Earles. The valedictory for the medical department was delivered by Dr. A. D. Hoyer.

Personal.—Dr. William M. Farr, Kenosha, has resigned as local surgeon for the Chicago & Northwestern Railway Company, and Dr. Herbert A. Robinson has been named as his successor.——Dr. Frederick S. Luhmann, Manitowoc, has been re-elected county physician of Manitowoc County.

The Value of a Stomach.—In the case of Robert Koerber against Dr. Arthur J. Patek, Milwaukee, in which the defendant demands $5,000 damages, claiming that the physician, after a postmortem examination of the plaintiff's mother, four years ago, carried away the stomach and refused to return it, the jury rendered a verdict awarding $833.45 to the plaintiff. Dr. Patek has appealed from the verdict.

GENERAL.

Gastroenterologists Elect.—At the ninth annual meeting of the American Gastroenterological Association, held in Boston, June 4 and 5, the following officers were elected for the ensuing year: President, Dr. Henry W. Bettmann, Cincinnati; vice-presidents, Drs. Julius Friedenwald, Baltimore, and Frank H. Murdock, Pittsburg, and secretary and treasurer, Dr. Charles D. Aaron, Detroit.

FOREIGN.

Measles in Mexico.—Measles has been epidemic for the last few months in Santa Rosalia, in the state of Chihuahua. The

children of the poorer classes are chiefly affected. Sequelæ are unusually frequent, bronchopneumonia oftener than anything else. In many cases the measles is followed by stomatitis, exhausting diarrhea, etc. The uncleanly habits of the peons, the class chiefly affected, are responsible for many of the complications.

Deaths

Charles Henry Alden, M.D. Pennsylvania Medical College, Philadelphia, 1858, brigadier general United States Army, retired, died at his home in Pasadena, Cal., June 9, aged 70. General Alden was born in Philadelphia, April 28, 1836, received his preliminary academic education at Brown University, Providence, graduating in 1856, and afterward received the degree of A.M. from that institution. He also received the honorary degree of Doctor of Medicine from the University of Pennsylvania in 1901. He entered the medical department of the Army as lieutenant and assistant surgeon in June, 1860; was made captain and assistant surgeon five years later; was breveted lieutenant-colonel March 13, 1865; was promoted to major and surgeon in 1866, to lieutenant-colonel and deputy surgeon general in 1888, and to colonel and assistant surgeon general in 1892. When General Sternberg became surgeon general in 1893, Colonel Alden, who was then chief surgeon of the department of Dakota, was ordered to Washington for duty as principal assistant in the office of the surgeon general, and retained this position until his retirement in April, 1900. He was the first president of the Army Medical School, Washington, and retained this position for several years. Just prior to his retirement Colonel Alden was tendered a dinner at the Raleigh Hotel by the medical officers stationed in and around Washington, to testify to the high esteem and affection in which he was held. Colonel Alden was retired in April, 1900, and four years later was made brigadier general, United States Army, retired. On his retirement he moved to Newtonville, Mass., and thence to Pasadena, where he died. He was a member for many years of the American Medical Association, a member and once president of the Association of Military Surgeons of the United States, a fellow of the New York Academy of Medicine, a member of the American Public Health Association, American Climatological Association, American Academy of Medicine, the Military Order of the Loyal Legion and the Order of Foreign Wars. General Alden was a man of charming personality, and a medical officer of distinguished ability, esteemed and beloved by his associates.

William Reginald Purvis, M.D. Jefferson Medical College, Philadelphia, 1886, of Alexandria, Va.; for many years health officer of that place, and at the time of his death coroner of Alexandria County, and one of the city physicians of Alexandria, died at the Alexandria Hospital, June 1, aged 45. The Alexandria Medical Society at a special meeting, June 2, passed suitable resolutions regarding the death of Dr. Purvis.

Peter L. Horne, M.D. Medical College of the State of South Carolina, Charleston, 1860; assistant surgeon in the Confederate service during the Civil War; once vice-president of the state medical society; and president of the Dorchester County Medical Association from the time of its organization, died at his home in St. George, S. C., April 21, aged 69.

Samuel Rush Sayers, Jr., M.D. University of Virginia, Medical Department, Charlottesville, 1900, of Wytheville, Va., a member of the Medical Society of Virginia, was found dead in his room in the Gault House, Chicago, May 29, aged 30. The coroner's jury found that he died from a gunshot wound inflicted with suicidal intent while despondent.

William Christie, M.D. Jefferson Medical College, Philadelphia, 1861; a member of the city council of St. John, N. B.; at one time president of the city medical society, and a member of the medical council, the executive of the provincial society, and a member of the hospital staff for 20 years, died at his home in St. John, February 8, aged 71.

Edgar Adolph Fischer, M.D. Long Island College Hospital, Brooklyn, N. Y., 1868; formerly of Watertown, S. D.; a member of the American Medical Association, and of the Baldwin County (Ala.) Medical Society, died at his home in Robertsdale, Ala., January 30, from meningitis, after an illness of three months, aged 61.

William C. J. Smith, M.D. College of Physicians and Surgeons in the City of New York, 1866, a veteran of the Civil War, and for many years a practitioner of Pottsville, Pa., but more recently a resident of St. Clair, died at the Pottsville Hospital, May 31, from cerebral hemorrhage, after a short illness, aged 68.

John Eugene Tremaine, M.D. Hahnemann Medical College and Hospital, Chicago, 1891, professor of materia medica in his alma mater, died at his home in Chicago, June 7, from septicemia attributable to infection received while attending an obstetric case, after an illness of two weeks, aged 37.

Thomas Henry Brinker, M.D. Jefferson Medical College, Philadelphia, 1846, one of the oldest practitioners of Westmoreland County, Pa., died at his home in Pleasant Unity, Pa., April 27, after an illness of ten days, from disease of the kidney and bladder, aged 87.

Alvin R. Bills, M.D. University Medical College of Kansas City, Mo., 1882; a member of the American Medical Association; for many years a practitioner of Bentonville, Ark., died at his home in Sulphur Springs, Ark., May 24, from asthma, aged 50.

James C. M. Rankin, M.D. Medical Department of the University of Nashville, Tenn., 1858, for four years in the Confederate service during the Civil War, died at his home in Bella Mina, Ala., February 18, aged 72.

William E. Morrison, M.D. Hospital Medical College, Louisville, 1884, for 20 years a prominent physician of Cumberland Gap, Tenn., died June 9, at his home in that place, from cerebral hemorrhage, aged 45.

Charles Wilson Lewis, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1886, died at the home of his son in Birmingham, Ala., May 2, from heart disease, after an illness of two years, aged 67.

Clark B. Provins, M.D. Rush Medical College, Chicago, 1882, a specialist on diseases of the eye and ear, died at his home in Ottawa, Ill., June 4, from pernicious anemia, after an illness of three years, aged [illegible].

Thomas B. Watkins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868, a Confederate veteran, died at his home in Memphis, Tenn., May 31, aged 65.

W. O. Williams, M.D. Medical College of Indiana, Indianapolis, 1890, died at his home in Indianapolis, March 30, from pneumonia, aged 38.

George E. Willard, M.D. Chicago Medical College, 1874, died at his home in Chicago, June 9, after an illness of seven years, aged 51.

A. M. Watson, M.D. University of Edinboro, Scotland, 1864, died at his home at Alberni, B. C., March 24.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 9, 1906:

Rand, J. W., Fuller, L. A. Skinner, George A., asst.-surgeons, ordered to report in person, June 25, 1906, to Lieut.-Col. George H. Torney, deputy surgeon general, president examining board, Army General Hospital, Presidio, San Francisco, Cal., for examination to determine their fitness for promotion.

Stone, John H., Wilson, James S., Fauntleroy, P. C., Dutcher, Basil H., Darnall, Carl R., asst.-surgeons, ordered to report in person, June 25 and 26, 1906, to Major William H. Arthur, surgeon, president examining board, Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for promotion.

Hutton, Paul C., asst.-surgeon, granted ten days' leave of absence, with permission to apply for 21 days' extension.

Yost, John D., asst.-surgeon, relieved from duty at Honolulu, H. T., and ordered to proceed to Manila and report in person to the commanding general, Philippines Division, for duty.

Richard, Charles, surgeon, in addition to his other duties is announced as attending surgeon at Headquarters, Department of the East, Governor's Island, N. Y.

Hutton, Paul C., asst.-surgeon, leave of absence extended 21 days.

Swenzey, Verge E., asst.-surgeon, relieved from further treatment at the General Hospital, Washington Barracks, D. C., and ordered to Fort Williams, Me., for duty.

Duval, Douglas F., asst.-surgeon, relieved from duty at Fort Williams, Me., and ordered to Fort Snelling, Minn., for duty.

Grissinger, J. W., asst.-surgeon, left Fort Jay, N. Y., on leave of absence, to include July 1, 1906.

Appel, D. M., deputy surgeon general, reported for temporary duty in the office of the chief surgeon, Headquarters Department of California, San Francisco, Cal.

Ware, William H., dental surgeon, left Fort Wingate, N. M., and arrived at Fort Apache, Ariz., for duty.

Kelly, John P., contract surgeon, left Presidio of Monterey, Cal., for duty with troops in Sequoia National Park, Cal.

Thorp, Charles W., contract surgeon, left Fort Ethan Allen, Vt., on sick leave of absence for three months.

Burkhart, John L., contract surgeon, relieved from duty in the Philippines Division, and ordered to the United States on first transport after August 1.

Hess, John H., examining and supervising dental surgeon, granted leave of absence for two months.

Rhoades, Rex H., dental surgeon, ordered from San Francisco, Cal., to Fort Sheridan, Ill., for duty.

Rietz, Hugo C., dental surgeon, relieved from duty in the Department of the Lakes, and ordered to the Philippines Division for duty

AMERICAN MEDICAL ASSOCIATION

PROCEEDINGS OF THE FIFTY-SEVENTH ANNUAL SESSION HELD AT BOSTON, JUNE, 5-8, 1906.

INDEX TO OFFICIAL MINUTES

OFFICIAL MINUTES—HOUSE OF DELEGATES

First Meeting Monday, June 4

The House of Delegates convened in the Assembly Hall of the Boston Medical Library, and was called to order at 10:30 p. m. by the President, Dr. Lewis S. McMurtry, Louisville, Ky.

The report of the Committee on Credentials was read by the Chairman, Dr. W. B. Dorsett, St. Louis, Mo.

The President then delivered his Address.

President's Address.

READ AND REFERRED TO COMMITTEE (see page 1872).

To the Members of the House of Delegates of the American Medical Association:

Gentlemen:—On July 13, 1905, this House of Delegates adjourned in Portland, Oregon, to convene this day in Boston. From the beautiful city within sight of Mount Hood to the historic city of Boston is a transition which well typifies the broad scope and truly national character of the American Medical Association.

I see before me many delegates who participated in our work at Portland, and also a goodly number who are entering on the duties of this House for the first time. To all I extend a cordial greeting.

The second annual session of the American Medical Association was held in Boston in 1849. Sixteen years later, in 1865, at the close of the great civil war, the Association convened in this city for the second time; so that the present meeting marks the third convention of the Association here. We have come on the cordial invitation of the Massachusetts Medical Society, and we doubt not that the meeting will strengthen the bonds of sympathy and fraternity between the profession of the other states and our brethren in New England.

I would suggest that this House of Delegates extend to our hosts, the members of the Massachusetts Medical Society, a cordial invitation to attend the various proceedings of the Association and to take part in the same.

This session is made marked and memorable by the return to the Association of a full representation of the united profession of the great state of New York. After many years of disagreement and separation, all differences have been adjusted with mutual respect and honor, and the national association once more claims for its own the society by which it was founded and fostered. And the crowning triumph of this achievement is that the reunion of our New York brethren has been accomplished with perfect harmony and unanimity. Time and progress have removed every vestige of former disagreement, and the members of the profession of the Empire State have exhibited a noble spirit of moderation and consideration with one another. Some of the leaders in this great achievement are sitting in this House as delegates. All

honor to them. I know that I voice the sentiment of the profession of the constituent societies of this House when I extend to the delegates from New York a welcome, a most cordial welcome, to the fellowship of this Association.

During the year which has elapsed since I became President of the Association, I have had ample opportunity to become familiar with the work of the Association as it is conducted in the several directions you have authorized and ordered. Last year my distinguished predecessor in this chair, Dr. Musser of Philadelphia, mentioned in his address the fact that the President of the Association represents in our organization the great body of the profession as separate and distinct from the organization composed of officials whose tenure of office extends over several years. Such a relation imposes on your President the duty of reporting to you his impressions of the organization, with such suggestions as he may believe will be useful, and conducive to the better accomplishment of the great and noble purposes to which this Association is dedicated, and which are set forth in Article 2 of our Constitution.

Following this suggestion, it is a pleasing duty for me to bear testimony to the fidelity, honor and devotion of those officials who compose the established organization of this Association.

During my term of office I have been in constant official relations with the Secretary-Editor, and I would be remiss in my duty did I not publicly attest his ability, his conscientious devotion to his duty, his entire self-effacement in the discharge of his onerous, exacting and often disagreeable duties. I know whereof I speak when I say that, week in and week out, while we go our way in pursuit of our daily duties, he is laboring unselfishly to carry out the purposes of this House of Delegates, to elevate our profession on a higher plane of scientific achievement and professional advancement. Under the direction of the Board of Trustees, and with the resources provided by the Association, he has made THE JOURNAL the foremost medical weekly periodical in the world; and, as chairman of one of your most important committees, he is doing work of transcendent importance to scientific medicine and the welfare of humanity. These words of commendation are spoken as a duty I owe to the Association and must not be construed as a tribute of friendship or the commonplace eulogium of public occasion.

In the same spirit, I desire to bear testimony to the faithful work of the Board of Trustees. No more honorable men have ever discharged a high public duty and trust than those who have hitherto and who now compose that board. Their responsibilities are great, and with altruistic motives they have discharged their duties faithfully and without thought of self-interest.

From my intercourse with the members of our profession in the various states, as also from my correspondence during the year of my Presidency, it is apparent that the impression is very general that the President and Secretary are the chief and most authoritative officials of this Association. Permit me to call your attention to the fact that the combined powers vested in the President, Vice-Presidents, Secretary, the Judicial Council, and all committees, are trivial in comparison with the power concentrated in the Board of Trustees. Under our organization, the Board of Trustees has sole charge of the extensive property and controls all the financial and business affairs of the Association. This Board also has sole control of the disbursement of all funds in carrying on the publications of the Association—to supply funds for standing committees, to direct scientific investigations—and can mould the policy of the Association at will during the interim of the annual sessions. The present prosperous condition of the financial affairs of the Association, the splendid position and high standard of THE JOURNAL, and the efficiency with which the work of the several standing committees is being prosecuted, all compose a superb tribute to the ability, good judgment and professional devotion of the present Board. Indeed, the profession is honored by their service, and they deserve the grateful appreciation of the members of the medical profession.

In view of the fact that the Association's membership is increasing with great rapidity, and that its property interests and financial resources are also rapidly growing, it is of the highest importance that the efficiency of a board entrusted with such vital interests should be properly safe-guarded by careful selection of its members. Under our Constitution, three trustees are elected annually, each to serve for three years. It is inimical to a deliberate and discriminating choice to elect these responsible officers as is habitually done by the House of Delegates. I allude to the custom of voting on three names at once. When you consider that these officers are vested with more power and responsibility than are placed in all the other officers, certainly they deserve to be carefully chosen, one at a time, as obtains in the selection of the other officers. While the Constitution and By-laws make no specific direction as to the method of balloting, but prescribe the same course for the election of all officers (except that the Treasurer is to be nominated by the Board of Trustees), it is apparent that the intention is that the three trustees are to be elected by the same method of nomination and balloting as are the four Vice-Presidents. I would respectfully recommend that a motion be adopted which will guarantee a free and deliberate choice in the selection of these most important officers, by electing one at a time.

In Article 5, Section 1 of the Constitution it is prescribed that "the trustees shall be members of the House of Delegates, without the right to vote." This is eminently proper, and is intended to afford the trustees opportunity to give the House of Delegates information on all matters arising in the course of the proceedings over which the Board of Trustees has control and especial cognizance. That it would be an abuse of office, fraught with danger, to invest officers of such supreme power with the delegate's ballot was apparent when the Constitution was framed and adopted. Therefore, no member of the Board of Trustees should be eligible to membership in the House of Delegates, since such a delegate would be a trustee with the right to vote, a condition expressly forbidden in the Constitution. He would become a voter in the House before which his own name and the names of his colleagues of the Board of Trustees are to be submitted in competing ballot.

The Constitution, Article 9, Section 3, declares: "No member of the House of Delegates shall be eligible to the office of President or Vice-President." Such a protection of the interests of the Association against undue influence is so just, and the precaution is so necessary, that it needs no comment for proper appreciation. If such doubling of office in one individual is forbidden by the Constitution as to the President and Vice-President, how much more essential is it that the same precaution should be prescribed and enforced as to the trustees, whose power and responsibilities are so much greater? I shall have occasion presently to allude to the attacks now being made on the Association's JOURNAL and the Association's management. These attacks, which you will readily recognize as the result of sinister motives and altogether unjustified in fact, are directed toward work entirely within the control and direction of the Board of Trustees. As the strength and influence of the Association grows, and pressing evils are exposed and corrected, such attacks will naturally increase. Under such circumstances, the Board of Trustees should command the confidence of the profession at large, all members of the board should sustain the same relation to this House of Delegates, which selects them, and they should also be on the same footing with each other. Hence, I would recommend that the Constitution be so amended that no member of the board can occupy the double office of trustee and delegate.

So long as the meetings of the American Medical Association consisted almost wholly of section work, with a large general session every day for the adoption of resolutions, with no systematic or persistent work along definite lines, the commendation of the medical press was generally and freely bestowed on the organization. But since the reorganization, when this House of Delegates was established, and the membership has increased, and the power of a great organization comes to be intelligently directed toward improving the resources of scientific medicine and advancing the welfare of the

profession by organization, certain interests have been interfered with, and the natural course of misrepresentation and abuse has been resorted to by the interests involved. First, and most naturally, THE JOURNAL, owned and controlled by the Association and ably edited and published under the direction of the Board of Trustees, was the object of attack and misrepresentation. For years publishing firms have grown rich by the patronage of the medical profession, and these same firms owned medical journals liberally supported by the profession. That the medical profession should own and publish a journal of its own, and that this journal should attain great popularity and influence, has provoked hostile criticism and misrepresentation. That this hostility, abuse and misrepresentation should be directed against the editor of THE JOURNAL is natural, since he is in the direct line of fire, and, from one standpoint, is the chief offender. That you may appreciate the ridiculous character of these charges, I would refer you to the leading editorial in the last issue but one of a New York weekly, which has for years enjoyed the liberal patronage of the profession, and which is owned by a wealthy publisher of medical books. The editorial is entitled, "The American Medical Directory." After stating that the issuance of a medical directory by the American Medical Association is absolutely without excuse, although mentioning that the Medical Society of the State of New York had advantageously issued a directory of that state, the editor says:

"The Editor-Secretary has also gone into the business of publishing medical books—he might as well drag the Association into the making of shoes. We do not know who authorized this venture—perhaps the managers will take us into their confidence at the Boston meeting in June—but, whether authorized or not, if the Association publishes books it should give them without price to its members."* Comment on this is unnecessary. The allusion to Dr. Simmons and the feigned ignorance of the fact that the publication of a medical directory was authorized by a vote of this House of Delegates at Portland last year, shows the unfair methods and animus of the editor who wrote the lines quoted.

But there is another interest which has been offended and which is equally unfair and far more abusive in its attacks on THE JOURNAL and the Association. This is the interest of the manufacturers of "patent" and proprietary medicines. This House of Delegates established a Council on Pharmacy and Chemistry, which, with the co-operation of the Board of Trustees, has secured the services of expert chemists and pharmacists to analyze the various nostrums and proprietary medicines in popular use. Many remedies, widely advertised under a plausible name, were found to be composed of cheap and familiar drugs, and sold at a ridiculously high price. The Board of Trustees, by direction of this House of Delegates, excluded from the advertising pages of THE JOURNAL all preparations which did not make public with the advertisement the formula showing accurately the composition of the products advertised. Many of these manufacturers of proprietary medicines have grown rich and they saw here a serious menace to their interests. Their avenue of assault is through the editorial columns of the medical journals they have subsidized, and their press committee has been very active of late. Here, as in the instance I have cited from the medical publishers, the editor of THE JOURNAL is made the special object of abuse and criticism. In the meantime, the editor's unpardonable offense is that he is doing his duty faithfully, as he is appointed to do, and at all times under the direction of this House of Delegates.

The far-reaching labors of the chairman of your committee on organization, Dr. J. N. McCormack, which have done so much to build up this great organization, have likewise brought on that distinguished physician a goodly share of unjust criticism and abuse.

These attacks on the Association, its work and its officers, abound with allusions to "clique" and "ring" in the organization, which "clique" or "ring" is alleged to be surreptitiously and treacherously running the affairs of the Association. I know not to whom these epithets are intended to apply, but this I do know, that there is no officer or board, or committee of the Association which is not directly created by this House of Delegates. Hence, if there be a clique or ring entrenched in power anywhere in this great organization, the responsibility for its existence rests on this House of Delegates and the means for its immediate destruction are in your hands. You represent a constituency of more than 60,000 physicians, and it devolves on you to discharge faithfully the trust you have assumed.

Craving your pardon for detaining you so long, and bespeaking your indulgence and co-operation in the work before us, I now declare the House of Delegates open for the transaction of business.

On motion of Dr. Frank Billings, Chicago, the Address was referred to the Reference Committee on Reports of Officers.

Method of Election of Trustees.

AMENDMENT REFERRED TO COMMITTEE.

In harmony with the suggestions contained in the President's Address, Dr. E. Eliot Harris, New York, offered the following resolution, which was likewise referred to the Reference Committee on Reports of Officers:

Resolved, That the Trustees of the American Medical Association be nominated orally and elected by ballot of the House of Delegates in separate order.

Reference Committees Announced.

The President then announced the reference committees:

COMMITTEE ON REAPPORTIONMENT.

President and Secretary (*ex-officio*).
G. W. Guthrie, Pennsylvania. F. D. Bain, Ohio.
W. J. Miller, Tennessee.

COMMITTEE ON CREDENTIALS.

W. B. Dorsett, Missouri, Chairman.
W. R. Townsend, New York. H. Bert Ellis, California.
Thomas McDavitt, Minnesota. J. H. Hamilton, South Carolina.

COMMITTEE ON AMENDMENTS TO CONSTITUTION AND BY-LAWS.

Alexander R. Craig, Pennsylvania, Chairman.
H. Bert Ellis, California. D. C. Brockman, Iowa.
William N. Wishard, Indiana. C. E. Cantrell, Texas.

REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS.

E. Eliot Harris, New York, Chairman.
W. D. Haggard, Tennessee. R. C. Moore, Nebraska.
Frank Paschal, Texas. A. D. Price, Kentucky.

COMMITTEE ON REPORTS OF OFFICERS.

Philip Mills Jones, California, Chairman.
Donald Campbell, Montana. A. Jacobi, New York.
Edwin Walker, Indiana. A. F. Jonas, Nebraska.

COMMITTEE ON MEDICAL LEGISLATION AND POLITICAL ACTION.

The Standing Committees, members (*ex-officio*).
J. F. Percy, Illinois, Chairman.
W. T. Sarles, Wisconsin. W. E. Anderson, Virginia.
J. R. Kean, United States Army. Hiram Burton, Delaware.

COMMITTEE ON MEDICAL EDUCATION.

Stuart McGuire, Virginia, Chairman.
John T. Rogers, Minnesota. J. N. MacCormack, Kentucky.
Henry L. Elsner, New York. L. C. Morris, Alabama.

COMMITTEE ON SECTIONS AND SECTION WORK.

C. L. Bonifield, Ohio, Chairman.
Charles Chassaignac, Louisiana. Jos. McFarland, Pennsylvania.
G. B. Ross, Vermont. H. W. Dewey, Washington.

COMMITTEE ON RULES AND ORDERS.

J. Garland Sherrill, Kentucky, Chairman.
Edwin M. Fuller, Maine. H. M. Workman, Minnesota.
D. T. Coleman, Georgia. L. D. Wilson, West Virginia.

COMMITTEE ON HYGIENE AND PUBLIC HEALTH.

Reginald H. Fitz, Massachusetts, Chairman.
H. F. Harris, Georgia. L. M. Halsey, New Jersey.
George W. Webster, Illinois. John T. Wilson, Texas.

Report of the General Secretary.

READ AND REFERRED TO COMMITTEE.

The Secretary read his report, which was referred to the Reference Committee on Reports of Officers (see page 1873), and that portion of it relating to the Constitution and By-Laws was referred to the Reference Committee on Constitution and By-Laws (see page 1871).

MEMBERSHIP.

To the Members of the House of Delegates:

Gentlemen:—The membership on the date of the Secretary's last report, June 1, 1905, was 19,285. From June 1, 1905, to May 1, 1906, 5,559 were added to the list of members, and 1,208 were dropped from the list, making a net gain for the 11

*I would state that the weekly New York journal quoted here is not the New York Medical Journal, edited by that veteran medical editor and scholar, Dr. Frank P. Foster.

months of 4,351, or a total membership on May 1, 1906, of 23,636. The discontinuances were: 171 from death, 153 not eligible, 226 for non-payment of dues, 619 resigned, and 38 not found; total, 1,208. Of the 5,559 added to the list, 1,802 were new members, joining the Association direct, while 3,757 had been subscribers to THE JOURNAL and were transferred from the subscription list to the membership list. (On May 1, 1906, there were approximately 18,700 subscribers to THE JOURNAL not members of the Association.)

AMALGAMATED CONSTITUENT ASSOCIATIONS.

Since the last session of the Association two changes have occurred among the constituent state associations. All the legal details for the amalgamation of the New York State Medical Association with the Medical Society of the State of New York under the name of the Medical Society of the State of New York were completed last October and the consolidation was officially recognized by Dr. Lewis S. McMurtry, President of the American Medical Association, December 22.

We have been unofficially informed that on May 8, 1906, a joint meeting of the Oklahoma State Medical Association and the Indian Territory Medical Association was held at Oklahoma City, Oklahoma, at which it was voted to unite the two organizations under the name of the Oklahoma State Medical Association. Dr. B. F. Fortner of Vinita, Indian Territory, was elected as President, with Dr. E. O. Barker, of Guthrie, Oklahoma, as Secretary.

SECTION ON TROPICAL MEDICINE.

The following letter was received May 5, 1906:

DEPARTMENT OF THE INTERIOR, BUREAU OF HEALTH,
MANILA, March 30, 1906.

Dr. George H. Simmons, General Secretary, American Medical Association:

Sir:—By direction of the Committee on Public Policy and Legislation of the Philippine Islands Medical Association, I have the honor to recommend through you that the American Medical Association establish at its next annual meeting, a permanent section on Tropical Medicine. This movement will be gratifying not only to the Philippine Islands, but to Porto Rico, Hawaii and Panama as well. Very respectfully,

R. E. L. NEWBERNE,
Ex-officio, Sec., Committee on Public Policy and Legislation
Philippine Islands Medical Association.

AMERICAN PHARMACEUTICAL ASSOCIATION.

A letter received from the General Secretary of the American Pharmaceutical Association, Mr. Charles Caspari, Jr., dated "Baltimore, May 14, 1906," says:

I have the honor of informing you that President Lemberger has appointed the following gentlemen delegates to attend the next annual meeting of the American Medical Association, to be held at Boston in June, for the purpose of extending cordial fraternal greetings from the American Pharmaceutical Association, and especially to attend the sessions of the Section on Pharmacology and Therapeutics:

Henry P. Hynson, chairman; John F. Hancock; Thomas P. Cook; Henry Kraemer; S. A. D. Sheppard; Charles Caspari, Jr.; C. S. N. Hallberg; E. L. Patch; Chas. F. Nixon; E. H. LaPierre; James H. Beal; S. P. Sadtler

ASSOCIATE MEMBERS.

I respectfully suggest that Section 5 of Chapter III of Book I of the By-Laws be made more definite. This year there have been certain misunderstandings in regard to the admission to the Official Program of "associate" members.

In 1901 a provision was made by which section officers could invite to take part in the scientific work those who were working in the allied sciences and who were not eligible to membership in the American Medical Association. The provision made in 1901 was as indefinite as the present by-law. I beg to quote from the minutes of the meeting of the House of Delegates, held June 11, 1902:

Dr. Victor C. Vaughan, a member of the Committee on Sections and Section Work, asked for an interpretation of Section 5 of the Constitution as to associate members, which reads as follows:

"Representative teachers and students of the allied sciences, not physicians, may become associate members by vote of the House of Delegates."

He said a gentleman, a distinguished physiologist, who is not a member of the Association, is to read a paper before one of the sections this afternoon, and he wanted to know whether the committee was barred from electing such men as associate members. He asked an interpretation of the two words, "not physicians," and suggested that such men be designated as "unregistered or uncensed practitioners." If this were done, some of the best men, who were doing good scientific work, could be elected associate members.

Dr. John B. Roberts moved that the words suggested by the committee be incorporated and the committee so instructed. Carried.

As a result the section was modified to read as follows:

Section 7. Associate Members.—Representative teachers and students of the allied sciences, not registered or licensed physicians, may become Associate Members by the vote of the House of Delegates.

Section 3, Article II, of the Constitution, adopted in 1903, provided for "members by invitation" as follows:

Members by Invitation.—Members by invitation shall consist of distinguished physicians of foreign countries who may be invited by the officers of Sections or of the Association. They shall hold their connection with this Association until the close of the annual session to which they are invited, and shall be entitled to participate in all of its affairs, as in the case of members, but they shall not be assessed the annual dues.

The committee appointed by the House of Delegates in 1904 for codifying the Constitution and By-laws, combined these two sections—"Members by Invitation" and "Associate Members"—in one section, transferred it from the Constitution to the By-laws, and it is now Section 5, Chapter III, Book I, as follows:

Associate Members.—Representative teachers and students of the allied sciences, and distinguished physicians of foreign countries, may be invited by the general officers or by the officers of a section, to attend the annual session and to take part in the scientific work. They shall be designated associate members. They shall hold their connection with this Association until the close of the annual session to which they are invited and shall be entitled to participate in the scientific and social functions of the Association.

I at first took it for granted that the same general principles were intended to be incorporated in this section as was indicated by the action of the House of Delegates on previous occasions, namely, that the provision was made to admit those who are not eligible to come in as regular members. The opposite view was taken by some, i. e., that teachers who were not in active practice, even though they had been licensed to practice and were members of their constituent state association, were eligible to come in as "associate" members.

My understanding is that originally it was intended that those once elected to "associate" membership should be continued as such members, but in the section adopted in 1904, quoted above, it is stated that "they shall hold their connection with this Association until the close of the annual session to which they are invited," carrying the idea that they are "associate" members only for that meeting. The trouble comes from the fact that the two sections above quoted were combined, and this provision just quoted, while it originally referred to "members by invitation" is made to apply to "associate" members also.

I would respectfully suggest that the matter be given consideration and the by-law made sufficiently definite as to both of these points to avoid any misunderstanding hereafter.

ALTERNATE DELEGATES FOR SECTIONS.

I respectfully suggest that provision be made for the appointment of an alternate from a Section to the House of Delegates when the duly elected delegate is not able to be present to represent the Section. No provision is made for such a contingency. The present provision is as follows, and is from Section 2, Chapter XII, devoted to "Sections": "Each Section shall also elect annually one representative to the House of Delegates of the American Medical Association to serve one year." There is no provision for the appointment of a delegate when the one elected can not serve.

DELEGATES FROM GOVERNMENT SERVICE.

Section 1, Chapter IV, Book II, of the By-laws specifies that no one shall serve as a member of the House of Delegates who has not been a member of the American Medical Association for at least two years. Surgeon-General P. M. Rixey, of the United States Navy, has called attention to the fact that in appointing a representative from the Navy to the House of Delegates his choice is greatly limited, as only medical officers who happen at the time to be stationed near the place of meeting are available. It sometimes happens that these surgeons have only recently become members of the American Medical Association. This also applies to medical officers of the Army and of the United States Public Health and Marine-Hospital Service. I would, therefore, suggest the advisability of adding to Section 1, Chapter IV, Book II of the By-laws the following: "Provided that this shall not apply to delegates appointed to represent the medical departments

of the United States Army, of the United States Navy or of the United States Public Health and Marine-Hospital Service."

SYSTEM OF REPORTING.

In my report for last year the advisability of establishing a system of reporting for county and state secretaries was suggested, which suggestion met the approval of the House of Delegates. Accordingly, a system of report blanks was devised, after consultation with the various state secretaries. Of these a sufficient number was printed to supply all state secretaries desiring them. These blanks consisted of a card for the use of county secretaries in reporting changes and additions to the membership of county societies to the state secretary, and a large blank form for the use of secretaries of constituent state associations in making monthly reports to the office of the General Secretary. They were readily adopted by 43 state associations, or all except Alabama, District of Columbia, Florida, Maine, Mississippi, New Hampshire, Tennessee, Virginia and Wyoming. Monthly or quarterly reports are made, whereby the card index of members of the constituent state associations is kept corrected up to date. This index now consists of approximately 60,000 names entered alphabetically by state and county societies, and furnishes information regarding the membership of any individual physician in his constituent association.

THE COUNCILOR'S BULLETIN.

The advisability of establishing a Bulletin for the consideration of organization matters was also recommended in the report for last year and was approved by the House of Delegates at the Portland session. Accordingly the publication of such a bulletin was begun last fall, and numbers were issued in November, January, March and May. It has been sent to all county secretaries, officers of constituted state associations, including the Councilors, members of the House of Delegates, members of the Board of Trustees, officers of the Sections, etc., in short, to all persons interested in the work along the line of medical organization. The reception which the Bulletin has received has been most gratifying and the matter contained has been of interest and value to organization workers.

BIOGRAPHICAL CARD INDEX.

The establishment and maintenance of a biographical card index of the physicians of the United States was also recommended and approved last year. The work of collecting and arranging biographical matter for such an index was begun immediately after the Portland session, the plan being to accumulate all information possible regarding members of the profession, preserving it in permanent form and using such portions of it as might be required for the American Medical Directory. Beside sending out large quantities of personal information blanks to the profession throughout the country, data have been obtained from state licensing boards, medical colleges, as well as from secretaries of state societies. There are at present on file between 50,000 and 60,000 biographical blanks, filled out by the physicians themselves, containing full biographical data. These blanks are arranged alphabetically, so that they are readily accessible. The work is being carried on and in a short time the Association will have practically complete biographical data regarding every member of the profession and, as time goes on, this accumulation of material will become of immense value in obtaining any information regarding the personnel of the profession.

Respectfully submitted,

GEORGE H. SIMMONS, *General Secretary.*

Report of Board of Trustees Distributed.

The President then called for the report of the Board of Trustees.

The Chairman of the Board, Dr. T. J. Happel, suggested that a copy of the report be distributed to each member of the House of Delegates, without being read, and that a time be set Monday afternoon or Tuesday morning for its consideration.

Dr. E. D. Ferguson, Troy, N. Y., moved that the report be referred to the Committee on Reports of Officers without being read and that Tuesday at 2 p. m., be set for its consideration. Seconded.

Dr. Frank Billings moved as an amendment that the report be made the first order of business Monday afternoon. Seconded (see page 1861).

The original motion as amended was accepted and carried.

Report of the Council on Medical Education.

READ AND REFERRED TO COMMITTEE (see page 1875).

Dr. Arthur D. Bevan, Chicago, Chairman, presented the report of the Council on Medical Education.

Mr. President and Members of the House of Delegates:—The Council on Medical Education desires to call your attention to the report of the work of the Council as given at our second annual conference, May 12, 1906, copies of which have been handed you. This report is as follows:

The purpose of the Council during the last year has been and shall continue to be until accomplished the securing of the general adoption of the standards now recommended.

In order to obtain the general adoption of these basic principles the co-operation of the state licensing boards and the state medical societies must be secured. It has been gratifying to note the very general approval of these basic principles by these bodies, and it is believed that within two years the standard which we recommended as a result of the last conference will be practically universally adopted.

The work of the Council during the last year has been devoted to obtaining data of the existing state of facts in regard to medical education under the following heads:

First, the medical laws of the states and territories and foreign countries; second, the standing of medical schools, as shown by the results of examinations before the various state boards; third, the work of the state boards; fourth, the character of the medical schools, their courses, equipment, facilities, etc.

There can be no doubt but that the most important function of the Council of Education will be the careful collecting of all the facts on medical education and giving publicity to these facts, so that the state licensing bodies, the state medical societies and the medical colleges may be given an accurate presentation of existing conditions. Such publicity is bound to lead to correction and improvement. As an example, let us review briefly the work of the state licensing boards, and the standing of the medical colleges in this country, as determined by the percentage of their graduates passing such examinations.

We have divided the schools of the country into four classes, according to the percentage of failures before the different state boards. Table 1 gives the percentage of failures from 0 to 10; Table 2, the percentage of failures from 10 to 20; Table 3, the percentage of failures over 20 per cent.

In addition to that, we have an unclassified list in Table 4, in which are placed the schools which have not enough data upon which to warrant their being classified. For instance, schools with less than ten students applying for examinations and schools where students have applied simply for examination in one state. I think it is rather interesting to note that the schools which we might expect would be in the first class are largely in the first class, with such a school as Harvard leading the list with the smallest number of failures. In Class 2 the failures are from 10 to 20 per cent. There are a number of good schools in Class 2. I am rather inclined to believe that by directing the attention of the faculties of these schools to the fact that they are in Table 2, it will surely be of value to the schools themselves and will, I think, lead to improvement. I know from my own personal experience that by having our attention called to the number of candidates rejected during this year has placed the faculty with which I am connected upon its mettle. They all feel that it must be within their power to pay more careful attention to the final examinations to prevent the graduation of those students who later fail before state boards.

In Class 3 we will find some thirty-eight schools, with a percentage of failures of more than 20 per cent. It is evident from a study of the medical schools in this country and their work that there are five specially rotten spots which are responsible for most of the bad medical instruction. They are Illinois, Missouri, Maryland, Kentucky and Tennessee. In Table 3 this fact is very well shown. Beginning, for example, with these five states, you will find in Illinois a group of colleges, with 36.8 per cent., 21.5 per cent., and 30 per cent. of failures. You find in Kentucky, for instance, a group of five colleges, with

44 per cent., 30 per cent., 25 per cent., 37 per cent. and 25 per cent. of failures. You find in Maryland a group of five colleges with 24 per cent., 69.2 per cent., 26.2 per cent., 22.7 per cent., and 29.5 per cent. of failures.

You find in Missouri in a group of five colleges the following percentage of failures: 48.4 per cent., 52.4 per cent., 60 per cent., 25 per cent., 30.8 per cent.

Lastly, you find in Tennessee a group of six colleges the percentages of failures 60 per cent., 41.8 per cent., 30.4 per cent., 36.7 per cent., 51.4 per cent., and 34.1 per cent.

The principal cause for this bad work is found in the existence of medical schools which are conducted for profit. At our last conference we called attention to the fact that the time had arrived when a medical school could not be properly conducted from the fees of students and pay a profit to its faculty as a business investment. If we are to raise the standard of medical education in this country to a point where it ranks with the other great countries of the world, the medical school for profit must cease to exist.

Tables 5 and 6, which are also taken from the large tables published in THE JOURNAL of the American Medical Association, May 6, 1905, show comparatively: (1) the severity of examinations conducted by the various state examining boards and (2) the apparent leniency shown to colleges of the home state as compared with colleges of other states.

In these tables we find evidence that is of interest and may prove to be of service to the state boards themselves. The general proposition is that the percentage of rejections by state boards varies from 76 per cent. to 0 per cent. These tables, however, have but a comparative value. In making comparisons a number of other points must be considered. Some states (New York, for example) scrutinize the credentials of and reject many candidates before they come to the examination, thereby reducing the percentage of rejections by examination. States allowing non-graduates to come up for examination would have and should have a large percentage of failures. Colorado leads the list with 70 per cent. of rejections. However, in this state there were only thirteen men who submitted to a written examination, most of the applicants being granted license after a careful inspection of their credentials. The candidates whose credentials were not accepted were offered the opportunity to take a state board examination, but when they found an examination was necessary many refused to come up for it. In the general result, given at the foot of the columns, we find there were 7,035 students from all colleges examined before state boards with an average percentage of failures of 19.3.

An interesting point, too, is found in the separation of failures into two classes: one, the failures by students from colleges of the home state, and the other from colleges of outside states. I think there is food for reflection in these figures. Of 3,129 students examined by the state boards of the same states in which colleges were located, there was 9.2 per cent. failures; from outside colleges some 27.4 per cent. of failures. This is a comparative statement, but one of some value, and it is one which should be carefully analyzed. Undoubtedly one reason for the greater percentage of failures of students from colleges without the state is that the recent graduate usually appears before his own state board at a time when he is best prepared to pass a written examination. Many practitioners moving from one state to another ap

The following tables are based on the reports of State Examining Boards for the year 1904, published in the *Journal of the American Medical Association*, May, 6, 1905.

In making comparisons, besides the percentage, one must consider also the total number examined and the number of State Boards before which representatives of the college appeared.

TABLE 1.—PERCENTAGE OF FAILURES, 0 to 10.

Margin No.	College.	Total.	Regst. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
	CALIFORNIA.						
5.	Med. Dept. Univ. of California..	37	1	34	2	5.5	2
	COLORADO.						
11.	Denver and Gross Coll. of Med....	49	32	16	1	5.9	12
	CONNECTICUT.						
14.	Yale University Dept. of Med.....	40	..	38	2	5.0	7
	DISTRICT OF COLUMBIA.						
15.	Columbian Univ. Dept. of Med.....	73	3	67	3	4.3	16
16.	Georgetown Univ. School of Med...	43	2	37	4	9.7	14
	GEORGIA.						
20.	Medical Coll. of Georgia.....	31	1	30	0	0.0	3
	ILLINOIS.						
21.	American Med. Miss. Coll.....	19	5	13	1	7.1	12
22.	Bennett Coll. Ecl. Med. and Surg...	18	1	16	1	5.9	8
25.	Coll. of P. and S., Chicago.....	259	15	227	17	7.0	22
26.	Hahnemann Med. Coll. and Hosp...	64	9	53	2	3.6	12
28.	Hering Med. Coll.....	22	4	17	1	5.5	10
30.	Jenner Med. Coll.	20	..	18	2	10.0	2
31.	Northwestern Univ. Med. School..	171	10	159	2	1.3	23
32.	Rush Med. Coll.....	298	38	245	15	5.8	26
	INDIANA.						
36.	Central Coll. of P. and S.....	11	..	10	1	9.0	4
	IOWA.						
42.	Drake Univ. Coll. of Med.....	17	2	14	1	6.7	3
45.	State Univ. of Iowa, Homeo. Dept..	11	1	9	1	10.0	3
	LOUISIANA.						
58.	Tulane University, Med. Dept.....	91	2	82	7	7.8	9
	MARYLAND.						
63.	Med Dept. Johns Hopkins Univ....	59	..	58	1	1.7	20
	MASSACHUSETTS.						
68.	Boston University School of Med..	37	..	36	1	2.7	11
70.	Harvard University Med. School...	160	4	155	1	0.6	17
	MICHIGAN.						
72.	Detroit College of Med.....	36	5	28	3	9.7	16
76.	Univ. of Mich. Dept. of M. and S..	114	5	98	11	10.0	29
	MINNESOTA.						
79.	Coll. of Med. and Surg. U. of Minn.	109	3	104	2	1.9	13
	NEBRASKA.						
97.	John A. Creighton Med. Coll.....	41	4	39	1	2.5	9
	NEW YORK.						
100	Albany Medical College.....	51	..	46	5	9.8	7
101.	Coll. of P. and S.....	246	8	229	9	3.8	26
102.	Cornell Univ. Med. Coll.....	69	..	67	2	2.8	8
103.	Eclectic Med. Coll.....	15	4	11	0	0	3
104.	Long Island Coll. Hosp.....	52	1	50	1	2.0	7
105.	N. Y. Homeo. Med. Coll. and Hosp..	33	1	31	1	3.1	7
108.	Syracuse Univ. Coll. of Med.....	37	1	36	0	0	8
109.	Univ. of Buffalo Med. Dept.....	54	4	46	4	8.0	7
	NORTH CAROLINA.						
112.	North Carolina Med. School.....	20	..	19	1	5.0	2
	OHIO.						
114.	Western Reserve Univ. Med. Coll...	36	2	32	2	5.9	10
115.	Cleveland College of P. and S.....	18	1	16	1	5.9	5
118.	Medical Coll. of Ohio.....	59	9	49	1	2.0	11
	OREGON.						
125.	Univ. of Oregon Med. Dept.....	20	1	19	0	0	3
126.	Med. Dept. Willamette Univ.....	10	..	9	1	10.0	2
	PENNSYLVANIA.						
128.	Univ. of Pa. Dept. of Med.....	137	6	123	8	6.1	26
129.	Hahnemann Med. Coll. and Hosp..	86	2	81	3	3.6	16
131.	Woman's Med. Coll. of Pa.....	54	..	49	5	9.2	12
	SOUTH CAROLINA.						
134.	Med. Coll. of the State of S. C....	26	..	24	2	7.7	7
	TENNESSEE.						
138.	Vanderbilt Univ. Med. Dept.....	52	1	48	3	5.9	18
	TEXAS.						
147.	Univ. of Texas, Dept. of Med....	22	..	22	0	0	3
	VIRGINIA.						
155.	Med. Coll. of Virginia.....	58	1	53	4	7.0	6
157.	Univ. of Va., Dept. of Med.....	32	..	30	2	6.2	11

TABLE 2.—PERCENTAGE OF FAILURES, 10 to 20.

Margin No.	College.	Total.	Regst. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
	ALABAMA.						
2.	Medical College of Alabama.....	41	..	36	5	12.2	4
	CALIFORNIA.						
4.	Cooper Med. Coll.....	50	1	44	5	10.2	6
10.	Coll. of Med. Univ. of S. Cal.....	32	..	26	6	18.7	4
	GEORGIA.						
18.	Atlanta Coll. of P. and S.....	43	2	36	5	12.2	11
19.	Georgia Coll. of Eclectic M. and S.	20	..	17	3	15.0	4

TABLE 2.—Continued.

	ILLINOIS.						
23.	Chicago Homeo. Med. Coll.	60	7	47	6	11.3	14
27.	Harvey Med. Coll.	25	1	20	4	16.7	8
34.	American Coll. of M. and S.	25	..	22	3	12.0	4
	INDIANA.						
37.	Med. Coll. of Indiana	29	6	20	3	13.0	7
	IOWA.						
44.	Sioux City Coll. of Med.	20	1	16	3	15.8	5
46.	State Univ. of Iowa, Med. Dept.	68	3	57	8	12.4	8
	MAINE.						
59.	Med. School of Maine, Bowdoin C.	32	..	27	5	15.6	6
	MARYLAND.						
64.	Southern Homeo. Med. Coll.	16	..	14	2	12.5	4
	MASSACHUSETTS.						
71.	Tufts Coll. Med. School	71	2	59	10	14.5	11
	MISSOURI.						
90.	Marion-Sims-Beaumont Coll. of M.	99	46	45	8	17.0	17
91.	St. Louis Coll. of P. and S.	74	29	36	9	20.0	17
94.	Med. Dept. Washington Univ.	90	44	38	8	17.4	17
	NEBRASKA.						
96.	Univ. of Neb. Coll. of Med.	51	10	36	5	12.2	9
	NEW HAMPSHIRE.						
99.	Dartmouth Med. Coll.	15	1	12	2	14.3	9
	NEW YORK.						
107.	Univ. and Bellevue Hosp. Med. C.	110	11	87	12	12.1	30
	OHIO.						
120.	Miami Med. Coll.	45	12	27	6	18.2	11
121.	Ohio Med. Univ.	68	7	49	12	19.7	20
	PENNSYLVANIA.						
130.	Jefferson Med. Coll.	224	9	189	26	12.1	34
133.	Western Pa. Med. Coll.	76	4	59	13	18.0	7
	TENNESSEE.						
137.	Med. Dept. Univ. of Nashville.	48	3	38	7	15.5	12
	VERMONT.						
154.	University of Vermont Med. Dept.	88	1	72	15	17.2	12
	VIRGINIA.						
156.	University Coll. of Med.	40	..	35	5	12.5	4

TABLE 3.—PERCENTAGE OF FAILURES, OVER 20 PER CENT.

Margin No.	College.	Total.	Regst. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
	CALIFORNIA.						
8.	Coll. of P. and S., San Francisco.	32	2	18	12	40.0	4
	DISTRICT OF COLUMBIA.						
17.	Howard Univ., Med. Dept.	37	..	22	15	40.5	14
	ILLINOIS.						
24.	Coll. of Med. and Surg.	19	..	12	7	36.8	3
29.	Illinois Med. Coll.	67	2	51	14	21.5	19
33.	National Med. Univ.	30	..	21	9	30.0	5
	IOWA.						
43.	Keokuk Med. Coll. of P. and S.	73	11	49	13	21.0	11
	KANSAS.						
48.	Kansas Med. Coll.	11	1	7	3	30.0	7
	KENTUCKY.						
50.	Hosp. Coll. of Med.	101	65	20	16	44.4	14
51.	Kentucky School of Med.	91	41	35	15	30.0	21
52.	Louisville Med. Coll.	78	51	35	12	25.5	16
55.	Med. Dept. Univ. of Louisville.	96	51	28	17	37.8	18
56.	Kentucky Univ., Med. Dept.	54	22	24	8	25.0	13
	LOUISIANA.						
57.	Flint Med. Coll., New O. Univ.	18	..	8	10	55.5	4
	MARYLAND.						
60.	Baltimore Med. Coll.	125	4	92	29	24.0	26
61.	Balt. Univ. School of Med.	75	10	20	45	69.2	14
62.	Coll. of P. and S. of Baltimore.	128	2	93	33	26.2	25
65.	Univ. of Maryland School of Med.	144	3	109	32	22.7	20
67.	Maryland Medical College	92	1	55	36	39.5	16
	MASSACHUSETTS.						
69.	College of P. and S.	32	..	22	10	31.2	10
	MICHIGAN.						
74.	Michigan Coll. of Med. and Surg.	14	3	7	4	36.3	7
	MINNESOTA.						
80.	Med. Dept. of Hamline Univ.	41	2	23	16	41.0	5
	MISSOURI.						
83.	Univ. Med. Coll. of Kansas City.	81	50	16	15	48.4	15
85.	Kansas City Med. Coll.	41	20	10	11	52.4	12
87.	Central Med. Coll.	20	10	4	6	60.0	7
88.	Ensworth Med. Coll.	31	19	9	3	25.0	8
89.	Barnes Med. Coll.	144	79	45	20	30.8	24
	NEBRASKA.						
98.	Lincoln Med. Coll., Cotner Univ.	31	4	21	6	22.2	5
	NORTH CAROLINA.						
110.	Leonard Med. School, Shaw Univ.	34	..	12	22	64.7	6
	OHIO.						
116.	Cleveland Homeo. Med. Coll.	34	6	18	10	35.7	7
117.	Eclectic Med. Institute	36	3	20	13	39.3	14
122.	Starling Med Coll.	51	5	36	10	21.7	9
	PENNSYLVANIA.						
132.	Medico-Chirurgical Coll. of Phila.	106	4	81	21	20.8	16
	TENNESSEE.						
135.	Tennessee Med. Coll.	12	2	4	6	60.0	5
139.	Univ. of Tenn. Med. Dept.	50	7	25	18	41.8	13
140.	Meharry Med. Coll.	53	7	32	14	30.4	14
141.	Memphis Hospital Med. Coll.	102	1	102	59	36.7	13
142.	Univ. of the South	72	2	34	36	51.4	17
144.	Chattanooga Med. Coll.	46	2	29	15	34.1	10

pear before the state board years after their graduation at a period when they are not as well qualified to take such an examination. Then some states (New York, for example) having a high class of medical colleges would naturally have a smaller percentage of rejections from their own colleges than from colleges outside the state.

The more the subject of medical education in this country is studied, the clearer it becomes that the two agencies which must be relied on to elevate the standard of medical education are:

1. The state licensing boards, which have the legal power to enforce the laws regulating the practice of medicine.

2. The medical profession of each state, which must see to it that the state possesses efficient medical legislation, and, what is even more important, that the right sort of men are placed on the state board.

Acting in harmony, these two agencies can demand and secure satisfactory standards practically at once. The power to control medical practice is and always will be exercised by the state governments.

A national body, such as the American Medical Association, can only be of service in this movement by acting as a central bureau of information, which will collect all the evidence of existing conditions and furnish this evidence to the state boards and to the medical profession of the various states and to the medical schools. Publicity is often the best cure of an evil. Such a central body can be of service by formulating on the basis of this evidence a minimum standard as to preliminary requirements, medical curriculum, etc., the general adoption of which would result in higher requirements and greater uniformity.

In order to ascertain just what conditions prevailed in the various states and territories, a circular letter was sent to the president and secretary of each state examining board, asking definite questions regarding (1) the standard of preliminary education; (2) whether such preliminary education is passed on by a state official or not; (3) who this official should be; (4) the standard medical curriculum held by the state, and (5) whether or not lists of colleges are kept showing which were recognized and which not. Answers to this letter were received from all but six states and from these six the conditions have been since learned through other reliable sources, so that our data is practically complete. From these replies the following facts have been deducted: (See also table 7)

VARIATION IN LAWS.

In the wording of the laws regarding the standards of preliminary education required in the various states, there is a great variety of statements, some of them being quite indefinite, so that it is difficult to deduct positive conclusions. There are nine states, Colorado, Illinois, Indiana, Iowa, Michigan, New Jersey, New York, Ohio and Vermont, which require a four-year high-school diploma or equivalent as a minimum standard. There are five states which apparently hold the same requirements since they have adopted the standard of the Association of American Medical Colleges; these are California, Maryland, Nevada, North Dakota and Virginia. The laws of Connecticut, Kentucky, Missouri, New Hampshire and Wisconsin recognize a "diploma from an accredited (or registered, commissioned or approved) high school"; Nebraska requires a diploma from "a high school or college entrance standing"; and Minnesota, New Mexico and South Dakota require "a high-school diploma" or "a high school educa

tion." Undoubtedly, some of these mean a four-year high-school course, but just how many it is impossible to determine without further correspondence. Pennsylvania's law requires only a three-year high-school education, although the board of examiners states that a four-year high-school education is practically insisted on. Three states, Arizona, Maine and Washington, require "preliminary education satisfactory to the board"; Delaware and Indian Territory require "a common school education" and South Carolina requires "a first-grade teacher's certificate." We can find no mention of preliminary requirements in the laws and regulations of 29 states.

PRELIMINARY REQUIREMENTS.

Eleven states have taken some steps toward having the entrance credentials passed on by a state board or state official. In eight of these states, Indiana, Iowa, Kentucky, Michigan, New Jersey, New York, Ohio and Pennsylvania, all preliminary credentials are passed on not by the college, but by the board of examiners or state official, while in three states, Colorado, Illinois and Wisconsin, it is clear entrance examinations are conducted by the state official, but it is not clear whether other entrance credentials are inspected by this state official or by the medical college. The states in which credentials are all carefully scrutinized by the board or state official and a "certificate of qualification" is issued at the time of matriculation, are to this extent on a similar footing with British requirements where registration of every medical student before or at the time of matriculation is required. There are twelve states which still allow undergraduates to take the licensing examination. These are Alabama, Arkansas, Colorado, Indian Territory, Massachusetts, Mississippi, Missouri, Nevada, Oregon, Tennessee, Texas and West Virginia. Of these, Colorado, Indian Territory and Missouri require that the applicant must have studied four full years, while in the others there is no statement as to whether there is any requirement, so long as the applicant can pass the examination.

ADVANCED STANDING FOR A.B., B.S.

Four states, Iowa, Kentucky, Minnesota and New York, do not sanction the giving of advanced standing to graduates of colleges of liberal arts. Minnesota and Iowa refuse to recognize any diploma from a medical school which gives such advanced standing. New York and Kentucky allow the medical school to do as it pleases, but rejects the applicant in case he has not had the full four years' course in a medical college. In 34 states provision is made requiring four full courses in separate years, three states, Delaware, Georgia and North Carolina have three years as the minimum, while 15 make no statement. Twenty-three states, or 27 if we include California, Maryland, Nevada and Virginia, have endeavored to regulate the length of the college year either by the requirements of a definite number of weeks or months. Seven of these place the minimum at 6 months, Georgia, Indian Territory, Kansas, Montana, Nebraska, New Hampshire and New York; four, Connecticut, Minnesota, South Carolina and South Dakota require 26 weeks (6½ months); eight, Iowa, Missouri, Ohio, New Jersey and Wisconsin, require 7 months; seven, California, Illinois, Indiana, Kentucky, Maryland, Nevada and Virginia, require 7½ months; North Dakota requires 8, Michigan 8½ an Colorado 9 months.

MEDICAL CURRICULUM.

Only one state, Michigan, has adopted the medical curriculum setting forth a definite number of hours in definite subjects, unless we include

TABLE 4.—UNCLASSIFIED COLLEGES.

In this table are all colleges having less than 10 graduates examined, having all examined in the home state, or otherwise showing insufficient data to allow comparison.

Margin No.	College.	Total.	Regst. on Diploma.	Examined. Passed.	Examined. Failed.	Percentage Failed.	No. of States.
	ALABAMA.						
1.	Birmingham Med. Coll.	4	..	4	0	0	2
	ARKANSAS.						
3.	Med. Dept. Arkansas Univ.	3	..	2	1	33.3	2
	CALIFORNIA.						
6.	California Med. Coll.	12	4	3	5	62.5	3
7.	Hahnemann Med. Coll., Pacific.	9	1	7	1	12.5	2
	COLORADO.						
12.	Denver Homeo. Coll.	6	6	..	..	..	1
13.	Colorado School of Med.	22	15	7	0	0.0	9
	ILLINOIS.						
35.	Dearborn Med. Coll.	18	..	18	0	0	1
	INDIANA.						
38.	Physio-Med. Coll. of Ind.	5	..	4	1	20.0	3
39.	Eclectic Med. Coll. of Indiana	2	..	2	0	0	1
40.	Ft. Wayne Coll. of Med.	4	1	1	2	66.7	3
41.	Indiana Univ. School of Med.	1	0	1	0	0	1
	MISSOURI.						
47.	Coll. of P. and S., Kansas City.	1	..	1	0	0	1
	KENTUCKY.						
53.	Louisville Nat. Med. Coll.	1	..	1	0	0	1
54.	Southwestern Homeo. Med. Coll.	8	8	..	..	..	2
	MARYLAND.						
66.	Women's Med. Coll. of Baltimore	3	2	1	0	0	2
	MICHIGAN.						
73.	Detroit Homeo. Med. Coll.	3	..	2	1	33.3	3
75.	Grand Rapids Med. Coll.	1	..	1	0	0	1
77.	Univ. of Michigan, Homeo. M. C.	6	2	3	1	25.0	4
	MINNESOTA.						
78.	Coll. of Homeo. Med. and Surg.	4	..	3	1	25.0	3
	MISSOURI.						
82.	Medico-Chirurgical College	22	16	4	2	33.3	6
84.	Kansas City Hahnemann Med. Coll.	14	8	3	3	50.0	6
86.	Eclectic Med. Univ.	17	14	2	1	33.3	4
92.	American Medical College	14	9	1	4	80.0	6
93.	Homeo. Med. Coll. of Missouri	16	11	1	4	80.0	6
95.	Univ. of State of Missouri	15	13	2	0	0	4
	NEW YORK.						
106.	N. Y. Med. Coll. and Hosp for Wom.	10	1	9	0	0	2
	NORTH CAROLINA.						
113.	Med. Dept. Univ. of N. C.	4	..	4	0	0	1
	OHIO.						
119.	Pulte Med. Coll.	11	3	5	3	37.5	8
123.	Toledo Medical College	8	2	3	3	50.0	3
	PENNSYLVANIA.						
127.	Temple Coll. of Phila., Dept. of M.	1	..	1	0	0	1
	TENNESSEE.						
136.	Knoxville Med. Coll.	3	..	0	3	100.0	3
145.	Univ. of West Tenn. Med. Dept.	3	..	2	1	33.3	3
	TEXAS.						
146.	Med. Dept. Fort Worth Univ.	4	..	4	0	0	1
148.	Baylor Univ. Coll. of Med.	2	..	1	1	50.0	1
150.	Dallas Med. Coll.	7	..	3	4	57.1	4
	WISCONSIN.						
159.	Milwaukee Med. Coll.	7	..	5	2	28.5	3
160.	Wisconsin Coll. of P. and S.	5	..	3	2	40.0	3

TABLE 5.

Showing totals and percentages rejected on examination by State Examining Boards of applicants from (1) all colleges; (2) colleges in the home state and (3) colleges of other states.

State Examining Board of	Colleges All States. Total.	Regst. without Examination.	Examined; Passed.	Examined; Failed.	Percentage Failed.	Colleges of Home State. Total Examined.	Percentage of All Examined.	Examined; Passed.	Examined; Failed.	Percentage Failed.	Colleges of Other States. Total Examined.	Percentage of All Examined.	Examined; Passed.	Examined; Failed.	Percentage Failed.
*Alabama	138	..	118	20	11.5	88	27.5	37	1	2.6	100	72.5	81	19	20.0
Arizona	35	..	28	7	20.0	a	..	..	..	..	35	100.0	28	7	20.0
*Arkansas	152	..	115	37	24.3	1	3	1	1	50.0	150	98.7	114	36	24.0
California	256	..	216	40	27.0	115	49.0	121	24	16.5	151	51.0	95	56	37.0
*Colorado	388	375	3	10	76.1	a	..	..	..	..	13	100.0	2	10	76.1
Connecticut	93	..	67	26	28.0	23	24.7	21	2	8.7	70	75.3	46	24	34.3
Delaware	11	..	10	1	9.0	a	..	..	..	..	11	100.0	10	1	9.0
Dis. of Col.	92	..	78	14	15.2	57	77.2	49	8	10.1	21	22.8	15	6	28.6
Georgia	114	..	110	4	3.5	66	57.9	66	0	0.0	18	42.1	14	4	8.1
†Florida	..	..	..	..	..	a	..	..	..	..	..	..	..	..	..
Idaho	38	..	23	15	41.0	a	..	..	..	..	38	100.0	23	15	41.0
Illinois	762	..	728	34	1.5	588	77.2	564	24	4.1	174	22.8	164	10	5.7
Indiana	174	..	150	24	13.8	99	56.7	77	22	6.9	145	83.3	123	22	15.1
Iowa	299	..	238	59	17.9	132	45.5	120	12	9.0	158	51.5	118	40	25.3
Kansas	77	..	64	13	16.8	1	1.3	1	0	0.0	76	98.7	63	13	82.8
Kentucky	267	255	4	6	60.0	110	0.0	0	1	100.0	9	90.0	4	5	55.6
Louisiana	149	..	120	29	14.3	64	45.7	59	5	7.9	76	54.8	61	15	19.7
Maine	44	..	36	8	10.8	26	35.1	21	5	19.3	18	64.9	15	3	6.2

TABLE 5—Continued.

Maryland	187		121	66	35 3	160	85.5	105	55	34.3	27	14 5	16	11	40.7
*Mass	397		320	77	19.4	184	45.5	170	11	6.7	216	54.5	150	66	30.5
Michigan	53		52	1	1.9	0	75.4	39	1	2.5	13	24.6	13	0	0.0
Minnesota	161		134	27	16.7	92	57.1	80	12	13.0	69	42.9	54	15	21.8
*Mississippi	249		119	130	52.2	*b*					249	100.0	119	130	52.2
†Missouri	209	209													
Montana	31		21	10	32 2	*a*					31	100.0	21	10	32.2
Nebraska	100		93	7	7.0	79	79.0	73	6	7 5	21	21.0	20	1	4.8
Nevada	2		2	0	0.0	*a*					2	100 0	2	0	0.0
New Hamp	42		33	9	21.4	3	7.2	3	0	0 0	39	92.8	30	9	23.0
New Jersey	96		76	20	20 8	*a*					96	100 0	76	20	20.8
New Mexico	11		9	2	18.1	*a*					11	100 0	9	2	18.1
New York	729		667	62	8.5	486	66.7	472	14	2.9	243	33.3	195	48	19.7
N. Carolina	93		71	19	20 4	27	29.1	24	3	11.2	66	70 9	50	16	24.5
N. Dakota	67		54	13	17 9	*a*					67	100.0	54	13	19.5
Ohio	349		236	113	5.2	187	75.1	177	10	5.4	62	24.9	59	3	4.8
*Oklahoma	66		30	36	54 5	*b*					66	100 0	30	36	54.5
Oregon	76		70	6	7 9	24	31.6	24	0	0.0	52	68.4	46	6	11 5
Penn	581		460	124	20.8	409	70 4	356	53	12.9	172	29.6	104	68	39.5
R. Island	57		52	5	8.9	*a*					57	100 0	52	5	8.8
S. Carolina	55		49	6	10 9	*a*					55	100.0	49	6	10.9
S. Dakota	48		36	12	25.0	*a*					48	100.0	36	12	25.0
*Tennessee	273		166	107	39.2	117	42.5	91	26	22.2	156	57 5	75	81	51.9
*Texas	188	5	96	87	12.0	26	14.2	23	3	11 5	157	85.8	73	84	53.5
Utah	38		31	7	18 4	*a*					38	100.0	31	7	18.4
Vermont	55		54	1	1.8	37	67.3	37	0	0.0	18	32.7	17	1	5.6
Virginia	175		121	54	30 8	71	40.6	64	7	9.9	104	59.4	57	47	45.1
Washington	181		135	46	25.4	*a*					181	100.0	135	46	25.4
*W. Virginia	203		163	40	19 7	*b*					203	100.0	163	40	19.7
Wisconsin	67		60	7	10.4	4	5.9	2	2	50.0	63	94.1	58	5	7.9
Wyoming	65	65				*a*									
	8034	993	5672	1365	19.3	3129	44 7	2841	288	9.2	3867	55.3	2808	1059	27.4

Totals of the first group contain graduates of foreign colleges and undergraduates, which are not contained in groups two and three.

* Non-graduates allowed to take examinations. † Impossible to get data, as items were not recorded. *a*, States have no medical colleges. *b*, States graduating no students.

TABLE 6.

Arranged in order of the percentage rejected by each State Examining Board, showing number examined and percentage rejected from (1) all colleges, (2) home colleges and (3) colleges of other states.

State Examining Boards of	Colleges, All States.		Colleges, Home State.		Colleges, Other States.	
	Total Examined.	Percentage Failed.	Total Examined.	Percentage Failed.	Total Examined.	Percentage Failed.
*Colorado	13	76.1			13	76.1
Kentucky	10	60 0	1	100.0	9	55.6
*Oklahoma	66	54.5			66	54.5
*Mississippi	249	52.2			249	52.2
*Texas	183	42 0	26	11 5	157	53.5
Idaho	39	11.0			39	11.0
*Tennessee	273	39.2	117	22.2	156	51 9
Maryland	187	35.3	160	34.3	27	40.7
Montana	31	32.2			21	32 2
Virginia	175	30.8	71	9.9	104	45.1
Connecticut	93	28.0	23	8.7	70	34.3
California	296	27.0	145	16.5	151	37 0
Washington	181	25.4			181	25.4
South Dakota	48	25.0			48	25.0
*Arkansas	152	24 3	2	50.0	150	24.0
New Hampshire	42	21.4	3	0.0	39	23.0
New Jersey	96	20 8			96	20 8
Pennsylvania	581	20.8	409	12.9	171	39.5
North Carolina	93	20.4	27	11.2	66	24.5
Arizona	35	20.0			35	20.0
*West Virginia	203	19.7			203	19.7
*Massachusetts	397	19.4	181	6.7	216	30.5
Utah	38	18.4			38	18 4
New Mexico	11	18.1			11	18 1
North Dakota	67	17.9			67	17.9
Iowa	290	17.9	132	9.0	158	25.3
Kansas	77	16.8	1	0.0	76	82 8
Minnesota	161	16.8	92	13.0	69	21.8
District of Columbia	92	15.2	71	10.1	21	28.6
*Alabama	138	14 5	38	2.6	100	29 0
Louisiana	140	14 3	64	7.9	76	19 7
Indiana	174	13.8	29	6 9	145	15.1
South Carolina	55	10.9			55	10.9
Maine	74	10 8	26	19.3	48	6.2
Wisconsin	67	10 4	4	50.0	63	7 9
Delaware	11	9.0			11	9.0
Rhode Island	57	8.8			57	8 8
New York	729	8.5	486	2.9	243	19.7
Oregon	76	7 9	24	0.0	52	11.5
Nebraska	100	7.0	79	7 5	21	4 8
Ohio	249	5.2	187	5.4	62	1 8
Illinois	762	4.5	588	4.1	174	5.7
Georgia	111	3.5	66	0.0	48	8 1
Michigan	53	1 9	40	2.5	13	0.0
Vermont	55	1.8	37	0.0	18	5.6
Nevada	2	0.0			2	0.0
	7035	19.3	3129	9.2	3867	27.4

* Non-graduates allowed to take examinations.

California, Maryland, Nevada, North Dakota and Virginia, which appear to have adopted the standard of the Association of American Medical Colleges. This, if enforced, would give these states the same standard curriculum as Michigan. Five other states have endeavored in a way, to fix a curriculum requirement, 2, Connecticut and Indiana, by stating the minimum hours per week, for a definite number of weeks each year, and 3, Colorado, Illinois and Vermont, by requiring a minimum number of hours each year. Therefore, only 6 states have arranged in any way for a medical curriculum on a basis of hours required unless we may add the 5 states named above which have adopted the standard of the Association of American Medical Colleges. Therefore, before the standard of the American Medical Association shall become the standard throughout this country, at least 29 states must provide for higher entrance requirements; 40 must provide for registration of medical students before a board of entrance examiners, or a state official, at the time of matriculation; 36 should require higher requirements as to the length of year and 4 should require an examination.

PRELIMINARY EXAMINERS.

As to the official who should pass on the entrance credentials, the majority seem to favor a board rather than an individual; first, because to do the work thoroughly requires more than one, and again, the decisions are less apt to be criticised or to be open to suspicion. Indiana, New York and Michigan have boards. In Illinois, New Jersey, Pennsylvania and Wisconsin entrance requirements are inspected by the State Superintendent of Public Instruction (or in Illinois, superintendent of public schools); in Kentucky by an examiner certified by the state board, while in Ohio there are four different examiners at the four seats of medical education. In Colorado, the law states that the entrance examination shall "not be conducted by the medical college." Classified lists are kept by several states, notably New York and Michigan.

To sum up, the work of the Council for the past year has been:

1. The publication of the standards adopted by the American Medical Association, by printed circulars, by letter and by requesting presidents of state associations to make the subject of medical education a portion of their annual address.

2. Ascertaining the conditions actually existing as regards licensure to practice medicine in the various states.

3. Working for the appointment of committees on medical education in connection with the state medical societies.

4. Laying plans for work through the state examining boards and through the committees on medical education to secure the adoption of the minimum standard in the various states.

5. Collecting, tabulating and publishing the results of state board examinations, showing how many passed and how many failed of the graduates of various medical colleges.

6. Compiling and publishing abstracts of the laws and board rulings governing medical licensure in the various states and territories, as well as extracts from requirements in foreign countries.

7. Compiling of facts regarding medical colleges to be issued in book form, giving the seat, history, hospitals, dispensaries, buildings, equipment, teaching force, preliminary requirements, admission to advanced standing, medical curriculum, requirements for graduation, fees, number of graduates for the current year, length of college year and the name of the dean of each medical college in the United States.

8. Preparation of a list of all medical colleges which have ceased to exist under their original names, whether through merging with other colleges, or otherwise becoming extinct.

7. We believe that for the present every effort of the Association should be made to secure the adoption of the standards recommended by the House of Delegates at the Portland session, and which we believe can be accomplished as planned by Jan. 1, 1908.

The next advance in medical education in this country must be the addition of a year between the high school course and the present four-year course in the medical school, this year to be devoted to chemistry, physics and biology. When this is secured our standards will be equal to those of Great Britain and other European nations.

That this desirable advance is not far off is shown by the fact that a resolution embodying this provision has just been unanimously adopted by the National Confederation of Examining Boards at their meeting in Boston. It is probable that during the year a number of state licensing boards will agree to this recommendation. If in addition to this, the thirty or forty medical schools which are doing the best work publicly announce that all students admitted after 1910 must possess these scientific requirements, this advance will be assured.

On motion, the report was referred to the Reference Committee on Medical Education (see page 1875).

Report of Committee on Medical Legislation.

READ AND REFERRED TO COMMITTEE (see page 1875).

Dr. Charles A. L. Reed, Cincinnati, Ohio, presented the report of the Committee on Medical Legislation.

The past year has been characterized by a great diversity of demands on the legislative organization of the American Medical Association. This diversity grows out of the fact that a larger number of bills covering a greater number of subjects and subjects of greater importance, have been presented to Congress, than during any year since the Association has undertaken to look after legislative questions in a systematic manner. This fact was set forth in detail in the report of the conference held between the Committee on Medical Legislation and the National Legislative Council, which took place at Washington, January 9-11, which report was published in THE JOURNAL, Jan. 20, 1906. It is unnecessary in this connection to discuss these various measures in detail, but merely to call attention to the fact that they embrace the following subjects—namely:

(a) A Department of Public Health, with Representation in the Cabinet.
(b) The Army Medical Reorganization Bill.
(c) The Pure Food and Drug Bill.
(d) Amendment of the Lunacy Laws of the District of Columbia.
(e) Governmental Regulation of Indigent Consumptives.
(f) Anti-nostrum Crusade.
(g) Government Recognition of the Services of Dr. James Carroll.
(h) Regulation of Medical Practice in the Government Reservation of Hot Springs.
(i) Bill for the Relief of the Widow of the Late Surgeon-General Wm. A. Hammond.
(j) Bill to Restore the Canteen in the Army.
(k) Bill Regulating the Treatment of Inebriates in the District of Columbia.
(l) The Postoffice Attitude Toward Nostrums.

These various measures were submitted to committees of the conference and were acted on in the light of the reports of such committees. Several measures of minor importance were brought to the attention of the conference, but from the fact that the energies of the legislative organization were already too much divided, it was thought inexpedient to take them up at this juncture. In this same connection it was urged that even those measures that received affirmative action at the hands of the legislative council were too numerous to enable either the legislative council or the National Auxiliary Legislative committee to give sufficient attention to any one of them to awake the influence that the profession most effectively felt at Washington. It is recommended, therefore, that in future the action of the legislative council be restricted only to measures of paramount importance. By this it is not meant to exclude from consideration bills of special or minor importance—for to do so would be to open again the floodgates of Congress to a lot of measures that lack any merit, but that from their very nature would be charged to the medical profession. Such minor and special measures ought to be considered in conference, and, when meritorious, formally endorsed and thereafter left to the labors of their respective champions. Only meas-

TABLE 7.

Showing apparent Inequalities and deficiencies in laws governing medical licensure, April 1, 1906.

State.	Law Includes Preliminary Requirements.	Preliminary Credentials Inspected by State Office or Board.	Accepts Non-graduates.	Requires Examination of All Applicants.	Advanced Standing for A.B., Etc.	Required Years of Medical Study.	Requires Definite Courses in Curriculum.	Minimum Hours per Week.	Minimum Weeks per Year.	Required Months Each Year.	Minimum Hours Each Year.	Minimum Total Hours of Course.
Alabama				Yes.			Yes.					
*Alaska												
Arizona			No	Yes.			Yes.					
Arkansas				Yes.			Yes.					
†California	Yes.	Yes.	No	Yes.		4	Yes.	30	30	7½	900	2600
Colorado	Yes.	Yes.				4	Yes.			9	900	1600
Connecticut	Yes.		No	Yes.		4	Yes.	36	26	6½	936	3744
Delaware			No	Yes.		3	Yes.					
Dist. of Col.			No	Yes.		4	Yes.					
Florida			No	Yes.			Yes.					
Georgia			No	Yes.		3	Yes.			6		
Idaho			No	Yes.			Yes.					
Illinois	Yes.	Yes.	No	Yes.		4	Yes.		30	7½	800	3200
Indiana	Yes.	Yes.	No	Yes.		4	Yes.	36	30	7½	1080	4320
Indian Ter.						4	Yes.			6		
Iowa	Yes.	Yes.	No	Yes.	No	4	Yes.		26	7		
Kansas	Yes.		No	Yes.		4	Yes.			6		
Kentucky	Yes.	Yes.	No	Yes.	No	4	Yes.		30	7½		
Louisiana			No	Yes.		4	Yes.					
Maine			No	Yes.		4	Yes.					
†Maryland			No	Yes.		4	Yes.	30	30	7½	900	3600
Mass.				Yes.			Yes.					
Michigan	Yes.	Yes.	No	Yes.		4	Yes.	36	31½	8½	900	3600
Minnesota	Yes.		No	Yes.	No	4	Yes.		26	6½		
Mississippi				Yes.								
Missouri				Yes.		4	Yes.			7		
Montana			No	Yes.		4	Yes.			6		
Nebraska	Yes.		No	Yes.		4	Yes.			6		
†Nevada	Yes.		†	†		4		†	†	†	†	†
New Hamp.	Yes.		No	Yes.		4	Yes.			6		
New Jersey	Yes.	Yes.	No	Yes.		4	Yes.			7		
New Mexico			No			4						
New York	Yes.	Yes.	No	Yes.	No	4	Yes.			6		
N. Carolina			No	Yes.		3	Yes.					
†N. Dakota	Yes.		No	Yes.		4	Yes.	30	30	8	900	3600
Ohio	Yes.	Yes.	No	Yes.		4	Yes.			7		
Oklahoma			No	Yes.		4	Yes.					
Oregon				Yes.			Yes.					
Penn.	Yes.	Yes.	No	Yes.		4	Yes.					
R. Island			No	Yes.			Yes.					
S. Carolina			No	Yes.		4	Yes.					
S. Dakota	Yes.		No	Yes.		4	Yes.		26	6½		
Tennessee				Yes.			Yes.		26	6½		.0
Texas				Yes.			Yes.					
Utah			No	Yes.			Yes.					
Vermont	Yes.		No	Yes.		4	Yes.					
†Virginia	Yes.		No	Yes.		4	Yes.	30	30	7½	900	900 3600
Washington			No	Yes.		4	Yes.					
West Virginia				Yes.			Yes.					
Wisconsin	Yes.	Yes.	No	Yes.		4	Yes.			7		
Wyoming			No	Yes.			Yes.					

* Law proposed but not adopted as yet.

† Law provides for standards of the Association of American Medical Colleges.

9. Securing, tabulating and publishing of statistics regarding medical students in the medical colleges of the United States and the graduating classes for the last year.

10. Collecting and filing any other obtainable information bearing upon medical education.

Besides the work as outlined in the foregoing report the Council desires to add the following statement:

1. The Council is more and more impressed with the possibility of elevating the standards of medical education through the efforts of the organized profession.

2. That the two most important factors which must be considered in this movement are the state examining and licensing boards and the state medical societies.

3. The state licensing boards represent the power to execute and the state medical societies represent the best means of securing the state laws, which must be secured and executed before proper standards can be established and maintained.

4. The higher class medical schools will of their own volition adopt and maintain proper standards.

5. The lower class medical schools, "the schools for profit," must be compelled by the law executed by the state licensing boards to live up to proper standards.

6. The problem before us therefore resolves itself at present into, first: The securing of efficient medical legislation in each state through the efforts of the organized profession in each state; and, second, the securing of efficient medical men to serve on the state examining and licensing boards.

ERROR.

On page 1858 the two columns are transposed. Table 7 and the matter below it should be first on the page.

vide means for defraying their expenses. The state associations should realize the responsibility that rests with them in promoting legislation by Congress and the extreme importance of providing active representation in the National Legislative Council.

NATIONAL AUXILIARY LEGISLATIVE COMMITTEE.

This committee, consisting theoretically of one member in each county of the United States, actually of 2,130 members, is of extreme importance in bringing the influence of the medical profession to bear on members of Congress. It is, indeed, an effective arm of our legislative organization. On the National Legislative committee devolves, and must continue to devolve, the responsibility of maintaining in number and character, the personnel of this extensive organization. Without this auxiliary committee your National Legislative committee, technically your Committee on Medical Legislation, would find itself reduced to the mere function of making verbal representations to the Congress.

But by this large committee we appeal very effectively to all of the members of Congress, through either the local district societies or through the avenue of their actual constituents.

Too much praise can not be given to the faithfulness and efficiency of this large auxiliary committee, which has at all times responded promptly and faithfully to the demands of the central organization.

THE QUESTION OF ESPRIT DU CORPS.

This leads your committee to observe with extreme satisfaction that the profession as reflected through the national auxiliary committee, and as represented in the various local organizations, state and national, has manifested a most wholesome *esprit du corps*. In times past every member of the profession who had any opinion on any subject, however immature that opinion might be, felt it incumbent on himself to communicate his views directly to his representatives at Washington. Now, however, under the influence of organization, these views are expressed in county and state associations, are developed with a reasonable degree of maturity, and are then communicated to Congress through the recognized channels of the profession. In this way, as never before, the medical profession of the United States is enabled to bring its influence to bear on public questions. The most hopeful sign of the times in this particular has been a general acquiescence on the part of the profession in this program. In only a single instance have influential members of the profession seen fit to ignore the consensus of opinion of the great national body by appearing in person before the committees of Congress to make personal representations that were inimical to the interests of the legislation desired and demanded by the general profession. This instance occurred in connection with the hearings in the pure food and drug bill. The suggestions were seized on by the enemies of that measure to weaken the force and effectiveness of the proposed measure. It is to be hoped that the future will fail to reveal any instance in which any physician, otherwise in good standing in the medical profession, will so far forget his obligations to his profession as to become the representative of the interests engaged in the manufacture and sale of spurious drugs and adulterated foods, as against the carefully determined and justly thought out demands of his profession.

BUREAU OF MEDICAL LEGISLATION.

In the report of the Committee on Medical Legislation presented at Portland a year ago the recommendation was made that a Bureau of Medical Legislation be established in the office of the Association at Chicago. This recommendation was concurred in, but for practical reasons it was found inex-

y out the provision. The recommendation is ar, with the belief that the contemplated step efficiency of the legislative organization. This he fact that the work of the Association has several departments, which departments could rative in carrying on the work of this commit- Information Bureau of the American Medical at all times be made available in determining rsonnel in connection with the large auxiliary e general correspondence of the office is con- g in information that can be referred with ad- vantage to the Bureau of Legislation; the news department of THE JOURNAL could be furnished with items from all over the country, gleaned from the extensive correspondence with the auxiliary committee; but above all, proximity to the printing facilities of the Association would enable the bureau to get out its own large volume of correspondence with greater expedition. This is often a matter of vital importance—particularly in instances in which a pending measure has been assigned for final hearing on short notice by the committee on rules, necessitating an almost immediate issuance of a general referendum. At such times a single day is of extreme importance in getting out an appeal to the Auxiliary Legislative committee. It is to be hoped, therefore, that the previous action of the House of Delegates in creating a Bureau of Legislation will be reaffirmed, and that effective steps will be taken to carry it into operation.

These effective steps should consist in placing the work of the bureau in the hands of a representative located in Chicago, invested with executive authority to conduct the necessary correspondence. The mere fact that your chairman, on whom this work has devolved during the past and the several preceding years, resided at a considerable distance from Chicago, has made it inexpedient for him to assume direct charge of the proposed bureau. This condition of affairs should be corrected, either by selecting an executive for the committee who resides in Chicago, or providing for the committee a secretary with authority to proceed with the work.

AN APPROPRIATION TO DEFRAY EXPENSES INCIDENT TO FORMULATING A BILL FOR A DEPARTMENT OF PUBLIC HEALTH.

The American Medical Association has stood committed to a National Department of Public Health, with representation in the Cabinet, ever since it took affirmative action on this question at Washington in 1891. The gradual evolution of the Bureau of Public Health, known technically as the Bureau of Public Health and Marine-Hospital Service, has been viewed with extreme satisfaction by the American Medical Association, as expressed in a resolution adopted last year at Portland. The matter had reached that point when it was taken up by the conference with the National Legislative Council at Washington in January, resulting in the adoption of the following:

WHEREAS, The medical profession at the Portland Session of the American Medical Association had good reason for endorsing the excellent work done by the Public Health and Marine-Hospital Service during the preceding ten years, has now better reason for asking for an amplification of its powers in view of the valuable services rendered commerce and the most vital interests of this country during the recent epidemic of yellow fever in the south and realizing that the national public health service should be placed on an independent basis; therefore be it

Resolved, That it is the sense of the American Medical Association that a Department of Public Health, with representation in the Cabinet of the President, ought to be established, such department to embrace an expansion of the present Public Health and Marine-Hospital Service, with the addition of other public health agencies now existing and in operation in other departments of the government, together with such additional agencies and functions as may best subserve the public welfare.

Resolved, That the National Committee on Legislation be and is hereby instructed to proceed at once with the preparation of a bill for this purpose to be presented to Congress at the earliest practicable date, if possible during the present session.

Resolved, That the Trustees of the Association be and are hereby requested to appropriate one thousand dollars ($1,000.00), or so much of the same as may be required to defray the expenses of the Committee on Legislation in employing a competent constitutional lawyer to draft a bill for a Department of Public Health contemplated by these proceedings.

The purposes of this resolution have not been carried into effect because the necessary funds have not been provided with which to defray the expenses in connection with the preparation of the bill. This question is brought to the attention of the House of Delegates with the request that the necessary action be taken in the premises.

THE PURE FOOD AND DRUG BILL.

The National Legislative Council reaffirmed its previous action in favor of the pure food and drug bill and renewed its representations to Congress touching this very important measure. This measure has passed the Senate in its original and effective form. It has been reported favorably from the committee of the House, with two amendments, which weaken, but do not entirely destroy its salutary provisions. It is now awaiting the pleasure of the speaker and of the committee on rules for consideration by the House.

It seems that there is a disposition on the part of the speaker and of some members of the committee on rules, arbitrarily to exclude this measure from consideration by the House. It is urged, therefore, that the House of Delegates during its present session, adopt a resolution urging the speaker, in connection with the committee on rules, to provide for the early consideration of the measure by the House, and that such resolution be telegraphed in duplicate to the speaker of the House of Representatives and to the chairman of the committee on rules.

ORGANIZATION FOR THE SUPPRESSION OF QUACKERY.

Your committee has had referred to it the question of organizing a movement whose sole object shall be to deal with the question of quackery as represented not only in the manufacture and purveying of poisonous or otherwise deleterious proprietary medicines, but in the dishonest representations that are made by unscrupulous pretenders through the advertising medium of periodical publications and through the United States mails. The fact that the American Medical Association is interested in any endeavor to safeguard the public health and morals and that it is in consequence opposed to the depredations of medical quacks and charlatans in continually robbing their helpless victims and endangering the public health, and the fact that it is likewise antagonistic to the manufacturers of so-called "patent medicines," who are debauching the public health and morals by the sale of alcohol and narcotics under the guise of medicines—it seems important that for these and other reasons, the House of Delegates should take some action to co operate with non-professional elements of society in correcting these evils. With this object in view it might be well for the House of Delegates to instruct its Committee on Medical Legislation to attend a proposed conference of delegates from other societies and organizations, lay and professional, to be held in the City of New York on November 15 next, for the purpose of effecting a national organization whose specific object shall be to deal with this very perplexing question. The mere fact that medical societies when taking individual action on this question are supposed to be actuated by personal and selfish motives makes it highly important to remember that the initiative in this proposed movement comes from influences entirely outside of the medical profession. It is this fact which points with peculiar significance to the probable efficiency of the movement.

GENERAL EXPENSES OF THE COMMITTEE.

It is urged on the House of Delegates that a generous appropriation for the expenses of the committee be directed. Efficient work can not be undertaken unless the officer in charge of the executive work of the Legislative committee can feel that he has reasonable leeway in the matter of expense. The policy adopted during the last year has not been one of cordial support of the committee. As a result, instead of issuing individual referenda, all the subjects were sent to the profession under cover of one referendum. This is a far less effective way of carrying on the work than by asking for individual action in individual instances. An appropriation of not less than $2,000 ought to be devoted to the current expenses of this committee. The House of Delegates is respectfully urged to take action on this question.

COMPENSATION OF OFFICERS.

In submitting this report of the Committee on Medical Legislation, the chairman urges on the House of Delegates consideration of the following facts:

1. The work of the committee demands the attention of an executive officer for a very considerable time, practically every day in the year

2. This time must be taken from the usually remunerative labors of his profession.

3. Identification with this branch of the work does not bring any indirect remuneration, but becomes a source of additional expense by diverting attention from the strictly professional work of the executive officer.

4. The Association ought not, therefore, to expect or accept such service without some measure of pecuniary compensation.

The House of Delegates is urged seriously to take this matter under consideration. The matter is brought to their attention with all the less hesitancy because your present chairman can not longer serve in the capacity of executive of your committee, and can not, therefore, in any sense be a beneficiary of the foregoing recommendations. Respectfully submitted,

CHARLES A. L. REED, *Chairman.*
WM. H. WELCH,
WM. L. ROHMAN.

NATIONAL INCORPORATION.

Dr. Reed referred to the matter of national incorporation, which, he said, was not mentioned in the report, as the committee desired further conference and would make a supplementary report later.

ARMY REORGANIZATION BILL.

He said there ought to be adopted a resolution urging prompt action with reference to Army medical reorganization, and as Chairman of the committee he wished to confer with members of the Army medical service.

PURE FOOD AND DRUG BILL.

With regard to the Pure Food and Drug Bill Dr. Reed said: "No legislator can explain his opposition to the measure on any theory consistent with either intelligence or honesty. This fact becomes all the more important, all the more significant, when the character of the opposition is taken into account, an opposition which, without exception, is made up of people interested in manufacturing and selling rotten and poisonous foods and liquors with which to make the well sick, and adulterated medicines with which to make the sick sicker. These people, the very vultures of society, possessed of enormous sums of ill-gotten money, are organized into a powerful lobby whose methods stop with no scheme of corruption. Their boast, unblushingly made under the roof of the Capitol at Washington, is that they represent over a hundred millions of capital and that the Pure Food and Drug Bill shall not pass. Yet this bill is simply a safeguard such as the government of every other civilized country has provided for the necessary protection of society. There is no doubt but that the people at large demand a reasonable protection to their health and lives. The Senate has passed the bill. There is no doubt but that a large majority of the House favor it if they can only be given a chance to vote on it. Why is this chance not given? Where is the responsibility for the holdup? At this moment it lies between the chairman of the subcommittee having it in charge, the Committee on Rules, and the Speaker—if, indeed, the order ought not to be reversed. The whole House owes it to itself to take the matter by unanimous action into its own hands. Therefore, I ask for the immediate adoption of the following resolutions:

WHEREAS, The revolting methods recently revealed by both private and governmental inquiry to exist in connection with the selection and preparation of meat for the American and foreign markets are a serious menace to the public health, and,

WHEREAS, The impurities demonstrated by government experts and by the Bureau of Chemistry and Pharmacy of the American Medical Association to exist in numerous other food products, in nostrums purveyed to the public and in remedies prescribed to the sick comprise even more serious menaces to the public welfare; therefore, be it

Resolved, That the American Medical Association, with an affiliated membership of more than sixty thousand physicians and representing the organized medical profession in twenty-four hundred of the twenty-eight hundred and thirty counties of the United States, views with satisfaction the efforts of the administration and of the Congress to protect the American public against adulterated foods and impure drugs and to purge our commerce, domestic and foreign, of fraudulent products.

Resolved, That the National House of Representatives be and is hereby earnestly petitioned to place the pending Pure Food and Drug Bill on its passage during the present week

Resolved, That Honorable W. P. Hepburn, author of the House Bill, be and is hereby requested to lay this petition before the House of Representatives at the earliest practicable moment, and to present a copy of these proceedings to the Speaker of the House and to the Committee on Rules.

Resolved, That the President and Secretary of this Association are hereby instructed officially to telegraph the foregoing preamble and resolutions to Honorable W. P. Hepburn.

NOSTRUMS AND QUACKERY.

Dr. Reed read the following resolutions in regard to quackery and charlatanism:

WHEREAS, The ..... is interested in any endeavor to safeguard and improve the public health and morals, and

WHEREAS, The medical quack and charlatan, by their outrageous practices, are continually robbing their helpless victims and undermining the public health, and

WHEREAS, Many manufacturers of so-called "patent medicines" are debauching the public health and morals by the sale of alcohol and narcotics and many dangerous poisons under the guise of medicines, and by following the most pernicious customs and practices in the conduct of their business and the exploitation of the public, and

WHEREAS, Many manufacturers of drugs and food substances are persistently treating their wares with harmful adulterants and other vicious substances, to the great detriment of health and danger to life, and

WHEREAS, Many newspapers entering American homes contain alluringly false advertisements of adulterated foods and vicious "patent medicines," and criminal quacks and charlatans. Now, therefore, be it

Resolved, By ..... that by reason of the foregoing conditions some concerted action against these evil conditions by public-spirited men and women is necessary for the preservation of the public health and morals and the purity of the American home. Be it further

Resolved, That for the co-ordination and co-operation of the forces willing and able to combat these frightful abuses, the..... does hereby appoint ..... as a delegate to attend a conference of other delegates from other societies and organizations to be held in the City of New York on the 15th of November, 1906, for the purpose of devising ways and means to combat the dangerous attacks now being made from such powerful sources on the public health and morals. Be it further

Resolved, That we approve of the formation of a national Society for the Preservation of the Public Health, whose objects shall be as follows:

(*a*) To obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, and to work for the enlightenment of the public on all matters affecting these subjects.

(*b*) To work for the enactment of laws in the United States, Territories and colonial possessions, for the protection and preservation of the public health and morals, including those matters mentioned in subdivision *c* thereof.

(*c*) To assist the constituted authorities in the enforcement of all laws affecting the public health, including those laws for the prevention of quackery, charlatanism and criminal practices in the healing art, whether by licensed or unlicensed practitioners; the prevention of adulteration and substitution of drugs and food substances; the prevention of the sale of narcotics, alcohol and dangerous substances of every kind, whether under the guise of proprietary remedies and so-called "patent-medicines" and nostrums and remedies, or whether sold as narcotics in violation of law; the prevention of the admission to the United States mails of all newspapers and printed matter of every sort advertising any business injurious to the public health or morals, and to prohibit the advertising of such business in any way. The mention of any one or more particular words or terms in the foregoing paragraph shall not be construed as limiting or qualifying the general terms "public health" or "public morals." Be it further

Resolved, That a copy of these resolutions be furnished the delegate to said conference, and that an additional copy be filed by the delegate with the secretary of the conference of delegates.

Dr. Reed asked that these resolutions be referred at once to the Reference Committee on Medical Legislation and Political Action, with the request that the committee report back to the House of Delegates this afternoon, so that a telegram embodying the resolutions could be sent promptly to the Hon. W. P. Hepburn.

On motion, the report of the committee and resolutions were so referred (see next column).

Report of Committee on Senn Medal.

The report of the Committee on Award of Senn Medal was called for.

Dr. A. F. Jonas, Omaha, Chairman, stated that the committee had only received one paper, consequently it had made no award. The committee submitted its report without definite action.

On motion, the report was adopted.

The reports of the committees on Scientific Research and on Recording the Minutes were called for, and passed in the absence of the chairmen.

On motion, the House of Delegates then adjourned until 2 p. m.

Second Meeting—Monday, June 4

The House of Delegates reassembled at 2 p. m. and was called to order by the President.

The Secretary read the minutes of the previous meeting, which were approved.

Report of Reference Committee on Legislation.

Dr. J. F. Percy, Illinois, Chairman, presented the following report:

The Reference Committee on Medical Legislation and Political Action hereby endorses the preamble and resolutions of the Committee on Medical Legislation and recommends their immediate adoption.

On motion, the recommendations of the committee were concurred in.

Report of the Board of Trustees.

For the Year Ending Dec. 31, 1905.

REFERRED TO COMMITTEE (see page 1873).

Dr. T. J. Happel, Tennessee, presented the report of the Board of Trustees.

To the Officers, the Members, and the House of Delegates of the American Medical Association:

We herewith present our annual report for the current year ending Dec. 31, 1905, as required by our Charter and By-Laws. We desire to make this report so clear that every member, not only of the House of Delegates, but also of the Association, may fully comprehend it.

We present the financial part of the report in the form of the Auditors' report made to the Board after a careful examination of the books, accounts and vouchers of THE JOURNAL office and of the Treasurer of the Association.

EXHIBIT A gives you the letter of the auditing company to the Board of Trustees, calling attention, among other things, to the "Directory Investment," and the net revenue as compared with that of the preceding year.

EXHIBIT B gives you the balance sheet of the Association on Dec. 31, 1905, showing what is called "surplus," and carried forward as such as the basis of the annual report for 1906. This surplus is $237,746.79, as compared with $212,055.18 for Dec. 31, 1904. That account ought to furnish each member of the Association a clear insight into the present status of the Association property on Dec. 31, 1905. In it you will find the value of your real estate and buildings (under-estimated rather than over-estimated), your machinery, furniture and fixtures, bonds, etc.

EXHIBIT C, "Revenue Account as per Books for the Year ending Dec. 31, 1905," shows you the inventory of stock on hand Dec. 31 of that year incurred in "publication" and "general" expenses, showing an aggregate of $249,723.71, and then giving your revenue account itemized, together with your inventory, summing up $275,415.32, the net gain for the year being $25,691.61.

EXHIBIT D shows the "Disposition of Net Revenue for the Year Ending Dec. 31, 1905." From this you will find that your real estate and buildings have increased $21,920.15; your machinery, after deducting "wear," $5,808.75; and that your new account, "Net Investment in Directory," is $10,868.39. You will observe that owing to our new building expense account we have less cash on hand.

EXHIBIT E, Treasurer's Report, shows the money in your Treasurer's hands and the bonds which go to make up the reserve fund of the Association. To this report reference will be made later. Suffice it to say here that you own bonds which cost $40,199.39, the par value of which is $39,000.

The exhibits are worthy of the careful study of every officer and member of the Association.

EXHIBIT F is a comparison of some of the larger items of revenue for the year 1905 with those of 1904, given by the Board, not being the work of the auditing company.

EXHIBIT G, appended to this report, is the "Report of the Council on Pharmacy and Chemistry," made to the Board of Trustees of the American Medical Association at their meet-

ing Feb. 2 and 3, 1906. Although this report has been published in THE JOURNAL, we feel that a matter of so much importance will bear repetition and re-reading.

These examinations are made by a paid auditing company which has no interest in misrepresenting anything. The business of the Association has grown to such an extent that we feel that this is the only business-like method of procedure.

The following is a copy of the Auditors' report:

EXHIBIT A.

THE INVESTORS' AUDIT COMPANY.

CHICAGO, JAN. 31, 1906.

To the Board of Trustees of the American Medical Association, Chicago.

Gentlemen:

In accordance with your instructions, we have examined the books and vouchers of the American Medical Association for the year ending Dec. 31, 1905, and hand you herewith the following statements:

Balance Sheet as at Dec. 31, 1905.
Revenue Account for the year ending Dec. 31, 1905.
Disposition of Net Revenue for the year ending Dec. 31, 1904.

The Association, following its usual custom, has charged against the profits a liberal reserve for depreciation of new building, machinery and furniture and fixtures.

During the year there have been several important improvements made, consisting of a large addition to the building occupied by the Association, considerable new printing equipment, and the equipment of the extension with fixtures, etc.

We would call your attention to an item shown on the balance sheet: "Net Investment in Directory to date $10,858.39." This is made up as follows.

Cost of directory property		$ 6,035.50
Expenditures for salaries, labor and material in preparing first edition		5,042.89
		$11,078.39
Less:		
Directory advance sales	$165.00	
Directory advance advertisements	45.00	210.00
		$10,868.39

We are informed that the first edition of the Directory published by the Association will not appear until about June 1, 1906. Therefore, it is proper to carry the expense incurred as an asset until such time as an income from the Directory shall be realized.

The net revenue, as shown in our last report for the year ending Dec. 31, 1904, was	$43,465.03
And for the year ending Dec. 31, 1905, as per account annexed	25,691.61
Or a decrease of	$17,773.42

We shall be glad to report in detail on this decrease if you desire.

We have examined, properly approved and receipted vouchers for all expenditures, with the exception of a few which had not been returned by the bank at the time of our visit. We shall audit same on our next visit to the office of the Association. We counted the cash on hand and verified the cash in bank with statements furnished us by the bankers. The securities in possession of the Trust Company were examined and found to be intact. In addition to the above, we have verified the footings of the cash book and made such other checks as in our opinion were deemed necessary for the protection of the Association.

Considering the amount of detail handled by the Accounting Department, we found the work to be in excellent condition. There appears to be a continued improvement in the manner of handling the accounts and office work.

We will be pleased to furnish you with any other information that you may desire. Yours faithfully,

E. M. MILLS, Manager.

EXHIBIT B.

BALANCE SHEET AS AT DEC. 31, 1905.

ASSETS.

Real estate and buildings		$114,323.61
Machinery		33,422.45
Furniture and fixtures		5,341.29
Library		1,163.11
Net investment in Directory to date		10,868.39
Inventory of paper stock, type, metal, buttons, ink and fuel		7,167.57
Bonds		40,139.38
Bills receivable		60.00
Accounts receivable		15,052.28
Cash on hand and in bank		19,884.83
		$247,482.91

LIABILITIES.

Accounts payable		$9,596.12
Section reports paid for in advance		140.00
Surplus: Balance as at Jan. 1, 1905	$212,055.18	
Add: Net revenue for the year, as per account annexed	25,691.61	237,746.79
		$247,482.91

EXHIBIT C.

REVENUE ACCOUNT AS PER BOOKS FOR THE YEAR ENDING DEC. 31, 1905.

Inventory of paper stock, type, metal and buttons as at Jan. 1, 1905		$5,347.65
PUBLICATION EXPENSES:		
Paper	$62,843.16	
Ink	2,935.64	
Type, metal electros	4,222.40	
Salaries and pay roll	78,874.79	
News reporting and editorials	9,417.67	
Binding	877.48	
Machinery repairs and renewals	2,068.61	
Advertising and subscription commissions	10,305.24	
Postage, first and second class	21,056.16	
Power, fuel and light	4,350.86	
General expense	2,432.18	
Exchange	356.05	
Collection fees	1,314.08	
Factory supplies	1,763.82	
Office jobbing	1,843.90	
Advertising and transportation	3,160.83	
Express and cartage	1,499.24	
Miscellaneous losses less recoveries	1,354.25	
Discount and interest	1,009.42	
Depreciation of machinery, furniture and fixtures	3,891.17	215,797.25
GENERAL EXPENSES:		
Organization	$7,797.04	
Association	10,062.30	
Medical legislation	1,234.90	
Council on Medical Education	639.43	
Council on Pharmacy and Chemistry	1,862.60	
Buttons	812.76	
Buildings	2,203.00	
Insurance and taxes	1,704.96	
Commissions for securing new members (buttons)	519.50	
Depreciation of buildings	1,742.32	28,578.81
Net revenue for the year ending December 31, 1905		25,691.61
		$275,415.32
Advertising		$95,600.36
Subscriptions collected during the year		64,242.46
Membership dues collected during the year		83,409.15
Jobbing		9,608.40
Reprints		5,916.91
Books		3,498.38
Buttons		927.81
Rents of Association properties		3,447.04
Miscellaneous receipts		37.24
Interest on bonds		1,560.00
Inventory of paper stock, type, metal, buttons, ink and fuel as at Dec. 31, 1905		7,167.57
		$275,415.32

EXHIBIT D.

DISPOSITION OF NET REVENUE FOR THE YEAR ENDING DEC. 31, 1905.

INCREASE IN ASSETS:		
Real estate and buildings	$21,920.15	
Machinery	5,808.75	
Furniture and fixtures	1,461.81	
Library	154.61	
Inventories	1,819.02	
Accounts receivable	954.99	
Net investment in Directory	10,868.39	$42,988.62
DECREASE IN LIABILITIES:		
Section reports paid for in advance	$139.00	$43,127.62
DECREASE IN ASSETS:		
Bills receivable	$65.73	
Cash	8,910.21	$8,975.94
INCREASE IN LIABILITIES:		
Accounts payable	$8,460.07	$17,436.01
Net revenue for the year ending Dec. 31, 1905, as per account annexed		$25,691.61

EXHIBIT E.

REPORT OF THE TREASURER FOR THE YEAR ENDING DEC. 31, 1905.

RECEIPTS.

1905.	
Jan. 1—Cash balance in bank	$22,354.24
Feb. 1—Cash received from editor of JOURNAL	10,000.00
July 1—Cash received from editor of JOURNAL	5,000.00
Interest coupons on 39 $1,000 bonds, 4 per cent	1,560.00
Interest, 2 per cent., on daily cash balance in bank from Dec. 1, 1904, to Nov. 30, 1905	524.62
	$39,438.86

DISBURSEMENTS.

1905.	
Sept. 1—Cash paid editor of JOURNAL on order of Trustees (for building)	$10,000.00
Sept. 1—Fee paid First Trust and Savings Bank by Treasurer to care for bonds and cut coupons for a period of one year	30.00
Sept. 1—Placed on special deposit for six months at 3 per cent. by order of local Trustee	15,000.00
Nov. 10—Cash paid editor of JOURNAL on order of Trustees (for building)	10,000.00
Dec. 31—Cash balance in bank	4,408.86
	$39,438.86

PROPERTY OF AMERICAN MEDICAL ASSOCIATION IN HANDS OF TREASURER, JAN. 1, 1906.

Cash in First National Bank, Chicago			$4,408.86
Certificate of deposit at 3 per cent in First Trust and Savings Bank			15,000.00
	Cost.	Par value.	
5/1000 bonds Union P., 1st 4's.	$5,207.50	$5,000.00	
5/1000 bonds Erie Ry. Co., 1st 4's	4,932.50	5,000.00	
5/1000 bonds Reading General, 1st 4's	4,870.00	5,000.00	
14/100 Chicago City School bonds, 4's	15,168.13	14,000.00	
5/1000 bonds A. T. & S. Fe, 4's	4,988.75	5,000.00	
5/1000 bonds B. & O., 1st 4's.	5,032.50	5,000.00	
	$40,199.38	$39,000.00	$39,000.00
			$58,408.86

Very respectfully submitted.

FRANK BILLINGS, Treasurer.

EXHIBIT F.

Amount received from—	1905.	1904.	Gain.
Membership dues	$84,409.15	$74,123.04	$10,286.11
Subscriptions	64,252.46	60,742.22	3,500.24
Advertisements	95,600.36	94,945.60	654.76
Rents	3,447.04	2,744.34	702.70
Interest on bonds	1,560.00	1,160.00	400.00
Daily balances	524.63	.....	524.63
Inventory	*7,167.57	5,347.65	1,819.92
	$256,961.21	$239,062.85	$17,888.12

A glance at the above table shows from whence has come the larger portion of our profits.

ADVERTISING DEPARTMENT.

The receipts from advertising last year (1905) were $95,600.36—showing a net gain over 1904 of $654.76, but it must be remembered that this gain was made in spite of the fact that in 1904 $15,000 of advertising matter was either rejected or discontinued from THE JOURNAL, and in 1905 at least $10,000 more was rejected, making in all $25,000. The higher rates obtained alone saved us from showing a decrease from this source. A further loss will no doubt result in 1906, from the application of the Rules of the Council on Pharmacy and Chemistry. The Editor and General Manager estimates that the gross loss may amount to nearly $20,000. As the circulation of THE JOURNAL increases, however, its advertising pages become more valuable to ethical advertisers and new matter will take the place of much that has been eliminated by the expiration of contracts, etc. In fact, to sum up the whole matter, your Board of Trustees and your Editor intend to free the pages of THE JOURNAL from everything about which any question can be raised. A glance at the advertising pages of THE JOURNAL shows even now a long stride in that direction.

At the present time things are in a very chaotic condition as regards what is acceptable and non-acceptable advertising for the reason that the Council on Pharmacy and Chemistry has many preparations under consideration, and whether they will be finally recognized as acceptable, depends on the result of the deliberation of the Council. We believe, however, that when this matter has been thoroughly worked out and we get on a solid basis, we shall be able to make up for lost advertising by getting a larger patronage from the more reputable houses. As the circulation of THE JOURNAL increases it becomes more valuable as a medium for general advertisers, not necessarily medical, and these advertisers we think will soon begin to realize it.

By far the greatest number of members and subscribers is obtained by representatives calling on the profession. Over 6,000 names were secured from this source. These special representatives not only secure orders, but some of them are doing excellent work building up the organization and calling attention to its benefits.

Of course, our loss each year is great, and the larger the number of subscribers and members, the greater the loss. There is no way of estimating the loss from deaths and retirement on account of old age, but the number is not inconsiderable. A considerable number, of course, are dropped for nonpayment of dues or subscription, besides those who voluntarily give up their membership or subscription from various causes.

CIRCULATION.

The weekly issue of THE JOURNAL of the American Medical Association from Jan. 7, 1905, to Dec. 30, 1905, inclusive, 52 issues, was as follows:

Weekly Edition. 1905.			Weekly Edition. 1905		
Jan. 7	35,319		July 1	39,182	
Jan. 14	35,291		July 8	39,196	
Jan. 21	35,325		July 15	37,325	
Jan. 28	35,240		July 22	37,006	
		141,175	July 29	37,519	
					190,228
Feb. 4	35,351				
Feb. 11	35,345		Aug. 5	37,270	
Feb. 18	35,244		Aug. 12	37,250	
Feb. 25	35,410		Aug. 19	40,449	
		141,350	Aug. 26	37,455	
					152,424
March 4	35,434				
March 11	35,447		Sept. 2	37,654	
March 18	35,517		Sept. 9	37,316	
March 25	35,715		Sept. 16	37,407	
		142,113	Sept. 23	37,589	
			Sept. 30	37,334	
					187,300
April 1	35,976				
April 8	36,107				
April 15	38,279		Oct. 7	37,800	
April 22	38,344		Oct. 14	37,958	
April 29	38,392		Oct. 21	40,023	
		187,098	Oct. 28	38,100	
					153,881
May 6	38,381				
May 13	38,518		Nov. 4	39,446	
May 20	38,603		Nov. 11	40,416	
May 27	38,626		Nov. 18	41,736	
		154,128	Nov. 25	41,785	
					163,383
June 3	40,334				
June 10	37,964		Dec. 2	42,487	
June 17	38,817		Dec. 9	42,067	
June 24	38,212		Dec. 16	42,527	
		154,287	Dec. 23	40,628	
			Dec. 30	40,700	
					208,409

Grand Total .....1,976,316 Weekly Average 38,006

The total number of copies issued during 1905 was 1,976,316.

The total number of copies issued during 1904 was 1,718,402.

An increase of 257,914, or 15 per cent.

The following is a detailed count of mailing list of members and subscribers by states on Jan. 1, 1906. It also indicates the loss or gain in each state during 1905. Copies to the U. S. Army, Marine-Hospital Service, etc., omitted:

State.	Members.	Subscribers.	Totals.	Gain for Year.	Loss for Year.
Alabama	229	198	427	89	...
Arkansas	287	199	486	36	...
Arizona	50	40	90	26	...
Alaska	...	4	4	2	...
California	904	559	1,463	268	...
Colorado	383	233	616	78	...
Connecticut	312	221	533	96	...
Delaware	38	13	51	5	...
Dist. of Columbia.	216	201	417	25	...
Florida	142	122	264	82	...
Georgia	225	212	467	64	...
Idaho	78	47	125	33	...
Illinois	1,944	1,867	3,811	470	...
Indiana	743	774	1,517	138	...
Indian Territoy	60	106	166	21	...
Iowa	724	663	1,387	...	64
Kansas	311	405	716	127	...
Kentucky	464	430	894	158	...
Louisiana	373	230	603	...	71
Maine	175	112	287	9	...
Maryland	375	366	741	122	...
Massachusetts	929	736	1,665	489	...
Michigan	762	686	1,448	...	74
Minnesota	569	335	904	158	...
Missouri	681	776	1,457	151	...
Mississippi	220	238	458	71	...
Montana	101	70	171	41	...
Nebraska	340	272	612	30	...
Nevada	22	27	49	13	...
New Hampshire	168	52	220	9	...
New Jersey	512	262	774	78	...
New Mexico	61	43	104	36	...
New York	1,064	1,749	2,813	785	...
North Carolina	134	123	257	38	...
North Dakota	105	144	249	92	...
Ohio	1,306	1,045	2,351	496	...
Oklahoma	96	111	207	18	...
Oregon	243	115	358	120	...
Pennsylvania	2,203	953	3,156	253	...
Rhode Island	153	32	185	...	10
South Carolina	133	130	263	58	...
South Dakota	133	125	258	61	...
Tennessee	350	260	610	...	14
Texas	649	511	1,160	98	...
Utah	85	56	141	17	...
Vermont	139	50	189	9	...
Virginia	255	232	487	...	13
Washington	299	233	532	183	...
West Virginia	234	184	418	68	...
Wisconsin	682	520	1,202	197	...
Wyoming	31	31	62	11	...
Canada	9	152	161	19	...
Cuba	2	7	9	...	...

State.	Members.	Subscribers.	Totals.	Gain for Year.	Loss for Year.
Hawaiian Islands	15	13	28	9	...
Mexico	14	32	46	6	...
Philippine Islands	26	18	44	15	...
Porto Rico	5	13	18	10	...
Isthmus Panama	4	8	12	12	...

The figures below indicate the count of the mailing list, Jan. 1, 1906, compared with that of Jan. 1, 1905:

	Jan. 1, 1905.	Jan. 1, 1906.
Copies to members	17,570	20,826
Copies to subscribers	15,698	17,669
Copies to exchanges	178	216
Copies to advertisers	248	310
Copies to medical colleges and libraries	98	114
Copies to subscription agents	90	96
Complimentary copies to members of Council on Pharmacy and Chemistry, etc.	.....	30
	33,882	39,261

This shows an increase of 5,379.

PERCENTAGE OF PHYSICIANS RECEIVING THE JOURNAL.

This table gives the number of physicians (based on Polk's and Standard directories, 1904 editions) in each state, and the number receiving THE JOURNAL and the percentage in each state. Copies to physicians in the U. S. Army, Marine-Hospital Service, etc., are omitted.

State	Physicians in State.	Number receiving Journal.	Approximate Per cent.
Alabama	2,114	427	20.1
Arkansas	2,382	486	20.4
Arizona	210	90	42.8
Alaska	55	4	7.2
California	3,921	1,463	37.3
Colorado	1,506	616	40.9
Connecticut	1,361	533	39.1
Delaware	227	51	22.4
District of Columbia	1,030	417	40.4
Florida	660	264	40
Georgia	2,769	467	16.8
Idaho	227	125	55
Illinois	8,517	3,811	44.7
Indiana	4,902	1,517	30.9
Indian Territory	801	166	20.7
Iowa	3,791	1,387	36.5
Kansas	2,566	716	27.8
Kentucky	3,387	894	26
Louisiana	1,462	603	41.2
Maine	1,229	287	23.3
Maryland	1,922	741	38.5
Massachusetts	5,150	1,665	32.3
Michigan	4,274	1,448	33.8
Minnesota	1,960	904	46.1
Missouri	6,089	1,457	25.2
Mississippi	1,663	458	27.5
Montana	356	171	48
Nebraska	1,647	612	37.1
New Hampshire	705	220	31.2
Nevada	84	49	58.3
New Jersey	2,302	774	33.6
New York	13,316	2,813	21.1
North Carolina	1,607	257	15.9
North Dakota	340	249	73.2
New Mexico	203	104	51.2
Ohio	8,112	2,351	28.9
Oklahoma	1,027	207	20.1
Oregon	692	358	51.7
Pennsylvania	9,714	3,156	32.5
Rhode Island	680	185	27.2
South Carolina	1,160	263	22.7
South Dakota	523	258	49.3
Tennessee	3,450	610	17.7
Texas	4,935	1,160	23.5
Utah	301	141	46.9
Vermont	701	189	26.9
Virginia	2,063	487	23.1
Washington	910	532	58.4
West Virginia	1,410	418	29.6
Wisconsin	2,500	1,202	48.1
Wyoming	133	62	46.6

The following table shows the number of members and of subscribers for each year, commencing with 1899, at about which time our present editor took charge of THE JOURNAL:

	Members.	Subscribers.
Jan. 1, 1899	7,997	2,453
Jan. 1, 1900	8,445	4,633
Jan. 1, 1901	9,881	8,339
Jan. 1, 1902	11,107	10,795
Jan. 1, 1903	12,553	12,378
Jan. 1, 1904	13,899	14,674
Jan. 1, 1905	17,570	15,698
Jan. 1, 1906	20,826	17,669

It will be noticed from the above that the membership increased 3,256, but most of these were in the "subscribers" column last year and were transferred to membership during the past year.

This last table presented shows that not enough members of the various state societies are becoming members of the American Medical Association. There are only 3,157 more members than subscribers, showing plainly that many who could become members are not availing themselves of the privilege so to do. In Alabama, for example, 229 of her 2,114 physicians are members of the American Medical Association and receive THE JOURNAL as members, while there are 198 non-members who are subscribers to THE JOURNAL. Tennessee, with her 3,430 physicians, shows only 350 members to whom THE JOURNAL is sent as such, and 260 who take it as subscribers; North Dakota leads all the states in percentage of her physicians who get THE JOURNAL—this being 73.2 per cent.; Washington next with 58.4 per cent.; coming on down to North Carolina with 15.9 per cent. and Alaska with 7.2 per cent. The sparsely settled western states show the greatest appreciation of the efforts of the American Medical Association to furnish a first-class medical journal by heartily supporting it—the lowest percentage being Nebraska, with 37.1 per cent., and the highest being North Dakota with her 73.2 per cent. This is easily accounted by the fact that, outside of the cities, the physicians are so far removed from each other that they are forced to depend on themselves and on the best literature that they can obtain: hence they take THE JOURNAL.

Work done among the physicians by canvassing agents on this point would accomplish much good. They would reach more of the country physicians, who constitute the majority of the practitioners in every state, and could easily induce all who are members of the state society to subscribe for THE JOURNAL. In our opinion much growth in membership must be made through direct contact with the members of the county societies: and frequently the canvasser will be able to induce a physician subscribing for THE JOURNAL to become a member of the county society, which makes him a member of his state society, and hence eligible for membership in the American Medical Association.

PAPER STOCK.

The Editor reports to us that he was able, last November, to make the best contract for paper for 1906 that he has ever made. This is due to the fact that the paper required for THE JOURNAL is a very large order, and is sought after by many mills, which can make it at their convenience, and which is paid for as delivered.

The following table gives the amount of paper stock used, in reams, pounds and tons, and is merely carrying on the statement made to you in previous reports:

	Reams.	Lbs. of paper.	Tons
1898	3,395	321,525	157
1899	4,832	461,420	230
1900	6,747	607,230	303.5
1901	9,052	814,680	407
1902	10,230	938,700	469.3
1903	12,368	1,113,100	586.5
1904	14,399	1,295,910	648
1905	17,783	1,576,530	788

MACHINERY.

During the year we bought another linotype machine. In the very near future a new printing press, modern in every respect, will have to be bought.

INCREASED EXPENSES.

We submit below the various tables illustrating the gradual increase in expenses. This is merely a continuation of the tables of previous years and shows how rapidly this account grows as the number of copies of THE JOURNAL increases.

PAY ROLL AND SALARY.

1899	$31,448.69	1903	$57,067.34
1900	37,359.49	1904	64,471.26
1901	40,416.01	1905	78,874.79
1902	46,316.65		

PAPER STOCK.

1900	$27,598.00	1903	$43,966.57
1901	29,825.00	1904	51,190.05
1902	35,675.06	1905	57,526.69

POSTAGE ON JOURNAL.

1899	$3,905.65	1903	$9,828.41
1900	5,616.06	1904	11,773.44
1901	7,591.37	1905	14,360.28
1902	8,595.63		

INK.

1899	$718.44	1903	$2,055.95
1900	1,145.45	1904	2,225.58
1901	1,753.31	1905	2,765.64
1902	1,930.65		

DIRECTORY.

The Secretary, Dr. Simmons, presents to us the following report in regard to the Directory:

"The editorial work on the Directory is in charge of Dr. Frederick R. Green. The publication of such a directory by the Association has been considered from the first years of the organization of the Association. On several occasions the Association has voted to establish such a Directory and has even appointed committees with full power to act, but owing to the lack of funds and of an organization sufficiently adequate, nothing was accomplished. It will be remembered that the report of the Committee on Organization, adopted at St. Paul, mentioned the Directory as one of the objects to be accomplished by an organized profession.

"The fundamental and most important work has been that of securing an official list of those legally entitled to practice medicine in each state, i. e., those who hold a license from the licensing board. As there are 52 states and territories with 70 licensing boards, the amount of work along this line has necessarily been very large, but it must be remembered that it will not have to be done hereafter. The Association now has a list recorded on the card-index system of the legally qualified physicians of the United States. Arrangements have been made with each of the licensing bodies to keep this information up to date by furnishing a list of newly licensed physicians, subsequent to each examination. The secretaries of the licensing boards have heartily and enthusiastically aided in the work and deserve the thanks of the Association.

"In some of the states, owing to the unsatisfactory condition of the records, it has been exceedingly difficult to obtain the desired information. In Pennsylvania, for instance, there is no complete list of legally qualified physicians in the hands of any of the state boards. The present medical practice law requires registration in the office of the county clerk. It was, therefore, necessary to obtain a copy of the list of registered physicians from the prothonotaries of the 67 counties in Pennsylvania. In New Jersey the same procedure was necessary, owing to the fact that the medical practice act in force from 1880 to 1890 only required registration in the county clerk's office. This necessitated obtaining transcripts of the records from each of the 21 county clerks, in addition to the list of the secretary of the State Board of Medical Examiners, of physicians licensed from 1880 to date. In Texas, the fact that four successive practice acts have been in force during the last 20 years, each one with different requirements regarding registration, as well as the vast size of the state and the fact that the profession is widely scattered, made it difficult to compile an accurate list of practitioners. This problem has been solved in a more or less satisfactory manner, however.

"It should be constantly borne in mind that the Directory will be a compilation of only a portion of the personal and professional information contained in the biographical card index. It is manifestly impossible, owing to lack of space, to publish full and complete information regarding each physician. All the data obtained, however, is made a matter of permanent record and is preserved in the card records. We have now on file over 50,000 personal information blanks, beside large amounts of data obtained from medical colleges, societies, etc. As stated above, the most important work is the compilation of a list of legally qualified physicians. The result of this work has been that, in nearly all the states, the secretaries have realized more than ever before the importance of accurate registration. The Association is co-operating with them in this effort and, in some instances, will probably print alphabetical rosters for individual state boards. The value to the boards themselves, is that all of the information on file at this office is placed at their disposal.

"Medical college statistics have been secured in the same manner. We have obtained a list of graduates for the years 1902, 1903, 1904 and 1905 from every medical college now in existence with the exception of two. This completes and brings up to date the list of college graduates already in our possession. Arrangements have been made with the medical colleges to supply us with a list of graduates each year. Thus we shall have a list of those licensed in each state and a list of graduates of all schools.

"At this time—May 15—the matter for 35 of the states is in type. The preliminary matter, including medical practice laws, state boards, officers of the county and state medical societies, medical colleges, etc., is complete and in type for all states."

BUILDING.

The addition to THE JOURNAL building, when completed, as suggested in the annual report made at Portland, increased the floor space about 50 per cent. For the present there is no crowding and work can be carried on much more rapidly and conveniently. The fourth story has been left without partitions, which will be put in as needed, under the supervision of the resident Trustee and the Editor and General Manager, Dr. Simmons. At the February meeting of the Board of Trustees they were directed to arrange for the installation of a chemical laboratory outfit on this floor. Reference will be made to this matter again under the head of appropriations. Until this fourth floor is partitioned off, the room called the Library, and used also as a meeting place for the Board of Trustees, is utilized for various purposes. There will soon be no spare space in the building if the business grows as it has in the years 1904 and 1905. In using the term "building," reference is made to THE JOURNAL home alone. The balance of the property is spoken of as real estate.

REAL ESTATE.

You have, in addition to THE JOURNAL office, five houses—two of three stories and basement and three of two stories and basement. These have all been kept in first-class repair. Three of these houses front on Dearborn Avenue and two on Indiana Street. The double house on Indiana Street has been continuously rented during the past year for $130 a month. The corner house on Dearborn Avenue is renting for $60 a month, and the two next to this building are now rented to one party at $80 per month, making a total of $270 per month for rents. The gross income from this source was $3,447.04. The excess of receipts as given in the total amount is accounted for by the fact that the agents who originally looked after the matter always kept back a month's rent, which was paid in full last March at the time the management of the property was taken on by THE JOURNAL office.

Assuming that the cost of the property occupied by the houses is three-fifths of the original cost, we should estimate its value as being $34,558.26, which will make a net income of 3.3 per cent.

To show more plainly the conservatism of our auditing company, your attention is called to Exhibit C, where there is charged against the Association "Depreciation of buildings, $1,742.32." This is a charge that is made under their business rules, while the whole real estate is worth more than it originally cost the Association.

PROFITS.

The profits from the business for the year 1905 are $17,773.42 less than last year. Perhaps an explanation of this decrease is due the House of Delegates and the Association. The receipts from dues for 1904 were abnormally large by reason of a special offer made in September of that year, and continued to the end of the year to send THE JOURNAL from date of subscription or application for membership until Dec. 31, 1905. By virtue of this offer 1,100 new members paid their 1905 dues in 1904, increasing the receipts of 1904 by $5,500, which could be properly deducted from the receipts of 1904 and added to those of 1905, thus making a difference of $11,000. Again the expiration of the contracts of many medical advertisements in 1905, which could not be renewed for the present, has been another source of loss of revenue. The estimated value of these advertisements, together with those rejected, as stated elsewhere, amounts to about $10,000. Thus it can be readily

seen that the difference in profits can be accounted for. This shrinkage may continue through another year, but it is expected that all rejected ads will soon be replaced by others to which no objection can be offered.

As stated in each of our previous reports, the true profits of THE JOURNAL should be kept separate and distinct from the profits of the Association, for the reason that the expenses incurred by the Association are liable to vary greatly in different years. The Association expenses for 1905 exceeded those for 1904 by $4,172.70. This is offset to a slight extent by an increase in receipts from interest on bonds, $400, and from rents, $702.70, a total of $1,102.70. This, therefore, will account for a decrease in profits of about $3,000.

We can estimate the approximate profits of THE JOURNAL as follows:

Association net profits	$25,391.61	
Association expenses	21,596.27	
Journal profit		$47,287.88
Interest	$2,057.54	
Rents	1,466.75	3,524.29
		$43,763.59

The following table shows the profits made by THE JOURNAL, the true profits of the Association for several years, as well as the net revenue to the Association from THE JOURNAL, from rents and from interest:

	ASSOCIATION INCOME.			Association expenses.	True profits.
	Journal.	Rents.	Interest.		
1899	$22,451.24	. . . . .	. . . . .	$ 5,843.39	$16,616.85
1900	21 984.79	. . . . .	. . . . .	7,182.57	14,8 2.22
1901	36 245.60	. . . . .	. . . . .	10,227.49	26 018.11
1902	46 698.05	. . . . .	. . . . .	5,935.49	40.140.56
1903	50,481.33	$1,400.34	$ 560.00	11,952.99	40 488.68
1904	57,0 2.22	1,195.31	1,295.82	16,0.8.32	43,465.03
1905	43,703 59	1,466.75	2,057.54	21,596.27	25,691.61

Thus, the Association has three sources of income. THE JOURNAL, rents and interest on bonds. The total of these, minus the Association expenses, gives the true profits of the Association.

There has been a gradual increase of the wages paid all the employés of THE JOURNAL. The union scale of wages has to be complied with to avoid trouble in having our work done, and as in every other line of business, skilled labor commands better prices, commensurate with the increased cost of living.

APPROPRIATIONS.

The appropriations for 1905 exceed those of 1904 by nearly $4,000.

The following appropriations were made:

$100 to the Committee on International Congress of Medicine.

$300 to the Committee on Scientific Research.

$250 honorarium allowed Dr. F. B. Wynn.

$600 was appropriated for the payment of secretaries of sections.

$500 was appropriated for Scientific Exhibit.

$1,000 was appropriated for Committee on Medical Legislation.

$300 was appropriated for Committee on Reciprocity.

As much of $4,000 as might be needed by the Council on Medical Education. Of this amount $639.43 had been used up to Dec. 31, 1905.

A few other appropriations made at the February meeting of the Board will be reported for 1906. The appropriation of $2,000 for the installation of a Chemical Laboratory is the chief one agreed on for 1906. In the opinion of your board much thorough work can be done here in aiding the Council on Pharmacy and Chemistry. The chemist to be employed here will act as secretary to the Council. Out of the appropriations a room is to be cut off and properly equipped with necessary laboratory supplies.

INVESTMENTS.

In view of the explicitness of the Treasurer's report, little need be said on this subject. We have, as he shows plainly, bonds with a par value of $39,000, bearing interest at the rate of 4 per cent., and a special deposit of $15,000 to be used in procuring as nearly as possible $15,000 of similar bonds when the market becomes suitable for the purchase. Up to the time of writing this report the market has been too high to enable the Association to realize 4 per cent. on the investment. But while this $15,000 is a special deposit, it is drawing interest at the rate of 3 per cent. per annum. We have now, as you see, a reserve fund of $54,000, just about one-third the amount needed to place THE JOURNAL on a rock-bottom foundation. No encroachment should be made on this fund; on the contrary, it should steadily be made to grow each year, till it has reached $150,000. Until then, there should be no listening to any suggestion of a reduction in membership fees or subscription rates.

BOOK-KEEPING, ETC.

The Audit Company reports (Exhibit A) that all the work was found in excellent condition, with "a continued improvement in the manner of handling the accounts and office work." All your property is kept insured and taxes paid. Your officers are all bonded in solvent bonding companies.

NATIONAL INCORPORATION.

Your board is informed by Dr. Charles A. L. Reed that further efforts to obtain a National Charter that would enable the Association to do business anywhere in the United States will be abandoned, as Congress could not grant such a charter. A charter secured through Congress would be limited in its powers by the laws, etc., governing the District of Columbia. We would recommend that no more money be expended along that line.

PLACE OF SESSION, EXHIBITS, ETC.

Your board has not been able to assume full responsibilities connected with the place of session, quarters for section meetings, railroad rates, etc., but if the amendments recommended for passage are carried, then we will feel the responsibility resting on our shoulders. This year that burden is borne by the local Committee on Arrangements.

FINALLY.

We hope that the work of your board, as set forth in this report, can be fully understood, and that whatever criticism may be indulged in may be not of an iconoclastic nature, but with a view to aiding us in our work. The work has been done. "Judge ye" not in a carping spirit, but with malice toward none. Of course, we have incurred the hostility of those firms and parties whose advertisements have been refused, but in each case an honest effort has been made to comply with what we have understood to be the expressed wish of the Association.

We would ask that the House of Delegates extend to Dr. George H. Simmons, Editor and General Manager, a most hearty vote of thanks for his year's work for the Association. Money paid for services rendered is not always a *quid pro quo*, thanks extended frequently being as much estimated.

We attach as Exhibit G the report of the Council on Pharmacy and Chemistry, submitted to the Board at its meeting in February, to which we invite your attention. We are glad to announce that through the courtesy of Surgeon-General Wyman and the Secretary of the Treasury, Dr. Reid Hunt, who is connected with the hygienic laboratory of the United States Public Health and Marine-Hospital Service, is now a member of the Council on Pharmacy and Chemistry. He takes the place of Professor Cushney, who, as will be remembered, was compelled to resign his active connection with the Council through his transfer to the Medical Department of the University of London, England. In addition, it is the intention to examine in the Hygienic Laboratory, from time to time, such proprietary and "patent" medicines as may be deemed advisable in the interest of the public health. We feel sure that you will join with your Board of Trustees in extending thanks to Surgeon-General Wyman for his assistance in this matter

WILLIAM H. WELCH, M. L. HARRIS, Secretary.
W. W. GRANT, A. L. WRIGHT.
MILES F. PORTER, PHILIP MARVEL.
H. L. E. JOHNSON, T. J. HAPPEL, Chairman.
E. E. MONTGOMERY, Vice-Chairman

EXHIBIT G.

Report of the Council on Pharmacy and Chemistry.

The following report was presented to the Board of Trustees of the American Medical Association at its meeting held Feb. 2-3, 1906:

To the Board of Trustees of the American Medical Association.

Gentlemen:—We beg to make the following report:

A conference of the Council on Pharmacy and Chemistry was held at Cleveland, Sept. 11-12, 1905, to which certain manufacturing pharmaceutical and chemical houses were invited to send representatives, as the Council desired suggestions and criticisms regarding the general plan of the work. Several physicians were also invited. The rules were thoroughly considered and finally adopted in the revised form as follows:

(The term "article" shall mean any drug, chemical or similar preparation used in the treatment of disease.)

RULE 1.—No article will be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, if any, and the identity of other preservatives, if present, must be furnished.

RULE 2.—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants and food preparations, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

RULE 5.—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to geographical source, raw material from which made, or method of collection or preparation.

RULE 6.—No article will be admitted or retained of which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to therapeutic value.

RULE 7.—Labels on articles containing "poisonous" or "potent" substances must show the amounts of each of such ingredients in a given quantity of the product. A list of such substances will be prepared.

RULE 8.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration and a copy of the protected label should be furnished the Council. In case of registration in foreign countries, the name under which the article is registered should be supplied.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished.

The proposed book, "New and Non-Official Remedies," was also discussed, and it was tentatively agreed that it should be divided into two parts: Part I to consist of definite chemical compounds and simple pharmaceutical preparations, and Part II to comprise pharmaceutical mixtures. The plan of procedure referred to in the previous report was slightly elaborated. Since the conference the Council has considered the merits of various proprietary articles and has provisionally arranged and classified a large number of preparations which are considered worthy of recognition.

As indicated in the first report, the consideration of pharmaceutical mixtures—the vast majority of preparations belong to this class—proved a most difficult problem. Such a preparation is usually an ordinary mixture, made according to some physician's prescription, or after some well-known formula, modified in some way to disguise its identity, which has been placed on the market as a new preparation under a catchy or suggestive name, accompanied with extravagant therapeutic claims. Such preparations represent nothing new and involve no unusual skill in their manufacture. Their use is to be deplored, but if they are to be used a complete statement regarding their composition should be furnished to physicians. If this were done, and if all mystery regarding them were removed, their use would be very limited. It has been decided, however, that as many of these mixtures as conform to the rules will be placed in Part II of the proposed Annual, where, when similar, they will be grouped together and explicit reference be made to corresponding official preparations.

In this connection, however, it should be borne in mind that standard preparations, such as those in the Pharmacopeia and in the National Formulary—fully equal, if not superior, to the proprietary mixtures—are not only listed in the catalogues of the manufacturing pharmacists and chemists, but are also easily compounded by any experienced retail pharmacist.

While the Council is acting solely for the medical profession it has remembered that there is no antagonism between legitimate pharmacy and medicine, that there is a mutual dependence, and that, consequently, there should be a mutual cooperation between the Council and legitimate pharmacists and chemists. While most of the well-known firms have been cooperating with the Council; some seem to hesitate about doing so. The Council believes, however, that this hesitation comes from the fact that these firms have not fully appreciated the objects for which it is working, and which are believed to be as much in the interest of scientific pharmacy as in the interest of scientific medicine, and therefore, in the interest of all honest and legitimate manufacturers. The Council has endeavored to make it plain and convincing to manufacturers that in the present movement there is no intention to interfere with the proper exploitation of their products, and that it does not expect them to reveal the technical secrets involved in their processes of manufacture, but that it must insist that a truthful statement concerning the actual composition, or the medicinally active components, both as regards quantity and quality, must be given, together with tests for the identification and confirmation of such medicinal constituents.

Certainly as much to be depreeated, and more harmful in their effects than secrecy in composition, are the false and absurdly extravagant claims made by some of the otherwise reputable vendors of proprietary medicines. These claims equal and occasionally surpass the claims made by "patent-medicine" vendors in their advertisements in the newspapers. During the last few years this method of advertising has grown steadily worse, each advertiser apparently wishing to outdo every other in eulogizing his particular preparation. It has finally come to pass that a plain, truthful statement regarding the therapeutic value of an article is generally considered valueless, and even reputable firms have not hesitated to make statements in their advertising literature that have been far from the truth. Many manufacturers acknowledge this and excuse themselves by saying that others have done it and they had to. They acknowledge that loose methods regarding this feature of their business have been in vogue, largely due to unchecked competition by unscrupulous concerns. We presume there is no objection to a reasonable optimism on the part of the manufacturer; but obvious misrepresentations as to the therapeutic value are quite as dishonest as misstatements concerning the composition.

Another difficulty which the Council has experienced in its investigations of synthetics, mixtures and new remedies is found in the character of the names proposed therefor. It is a recognized principle that the name proposed for a remedy should not in any way mislead or deceive. If the name, therefore, is indicative of origin, the origin indicated must be the real one. If, on the other hand, it is indicative of quality or property, the preparation must have that quality or property. Names which, by their ending or otherwise, are indicative of definite classes of compounds, or which in any part of the name show derivation from any particular source or the possession of any particular quality, must be true to the indication. Many preparations would be excluded from classification by reason of false or misleading names.

Investigation has shown that, as a rule, the preparations placed on the market by the regular manufacturing pharmaceutical and chemical houses are as represented; at the same time we regret to state that in some instances otherwise reputable firms have been offering to the profession articles that are not in accord with the claims made for them. The Council does not think it wise to be more specific at this time, believing that these preparations will be withdrawn, or that a true statement will be made regarding their character and composition.

Investigation has also shown that certain remedies are

being manufactured under patents that do not conform to the specifications of the patents.

Attention is called to the fact that occasional statements respecting the nature of the substances occurring in the mixture or methods of preparation are made by manufacturers which seem to be contrary to the established principles of chemical reactions. As an illustration of this, it may be stated that the mere mixture of two substances, which may possibly react chemically, is not properly represented by supposing that complete chemical reaction has taken place unless that actually has occurred. This is especially true of certain very complex organic compounds, which, it appears, can not possibly be made by the preparation either of the pure acids or of the pure bases, but in which attempts are made to produce the combination by mixing the substances in the crude or unmanufactured state and assuming that the chemical reactions have taken place.

In these cases the statement of the manufacturer should convey the facts of the case and not the assumed reactions.

As was mentioned in the former report, an investigation of some of the so-called cod-liver oil preparations has led the Council to believe that some of these articles are fraudulent, since they contain no cod-liver oil, and that both the public and the medical profession are being greatly deceived in many articles that are placed on the market as tasteless or fat-free cod-liver oil.

These are the features of existing conditions that are retarding the work and delaying the approval for admission of some articles which otherwise might be accepted.

The Council recognizes that sufficient time should be allowed manufacturers to make the necessary changes in their labels, circulars and printed matter to conform to the rules. July 1, 1906, has been tentatively fixed as the date when compliance with the rules be required of all preparations. It is hoped that soon after that date it will be possible to issue the first edition of the proposed book, "New and Non-Official Remedies." Although the first number will not be complete, the annual revision will afford opportunity for the admission of such articles as may not at that time have been acted on.

It is hardly necessary to remind you that there is much detail work of a chemical nature connected with this work, and while some of the members of the Council have been devoting much time and labor in this direction it is believed that some of this detail work could be done much more satisfactorily if facilities for it were provided by you at the Association building. Therefore, the Council begs to suggest that, if it is possible to do so, a chemical laboratory be established by the Association with a competent chemist in charge. There is a great amount of work to be done, and it is work that must be continued if the medical profession in the future desires to protect itself from unscrupulous promoters.

The Council reiterates its former plea to those connected with hospitals for their co-operation in making clinical tests. There has been some co-operation of this nature, but not so much as the Council wishes it could have.

The prospects for a satisfactory solution of the various questions which confronted the Council at the beginning are more favorable as time goes on; it wishes to state, however, that the ultimate success of the work must necessarily depend largely on its endorsement by the members of the American Medical Association and by the physicians in general limiting their support to those manufacturers who are supplying them with honest preparations in a legitimate manner.

The evident appreciation of the efforts of the Council by the medical profession of the country is highly gratifying and encouraging.

Respectfully submitted,

C. Lewis Diehl, Samuel P. Sadtler,
C. S. N. Hallberg, J. O. Schlotterbeck,
Robert A. Hatcher, George H. Simmons,
L. F. Kebler, Torald Sollmann,
J. H. Long, M. I. Wilbert,
F. G. Novy, H. W. Wiley,
W. A. Puckner, Julius Stieglitz,

Members of the Council on Pharmacy and Chemistry, American Medical Association.

On motion of Dr. F. D. Ferguson, the report was received; and on further motion of Dr. Frank Billings, it was referred to the Reference Committee on Reports of officers (page 1873).

Report of the Committee on Reciprocity.

REFERRED TO COMMITTEE (see page 1875).

Dr. W. L. Rodman, Philadelphia, read the report of the Committee on Reciprocity.

To the President and Members of the House of Delegates:

Gentlemen:—Your Committee on Reciprocity respectfully submits the following report: Owing to the geographical location of its members, one living in Kentucky, Colorado, Montana, New York and Pennsylvania respectively, but a single meeting of the full committee has been held during the year. There has, however, been considerable correspondence between the Chairman and other members, and a number of meetings between the members living in New York and Pennsylvania. Two of the members met by appointment at the recent meeting of the Medical Council in Chicago, and we considered the work being done by that body as closely allied in every way with the broad question of reciprocity (based on equity). We were much impressed with the meeting, and regret that the other members could not have been present. We are unanimously of opinion that reciprocity based on equity can only result in time through the excellent work now being carried on with a certainty of fruition by your Council on Medical Education. We wish to commend in the highest terms the valuable and unselfish work which has been done by the Chairman, Dr. Arthur D. Bevan, and his associates, and to state it as our belief that they have already accomplished all that could have been asked, and more than could have been reasonably expected in so short a time. Your committee believes that such a central or national body, and it only, can so carry on the work of medical education until what has been a reproach to our country shall greatly redound to its credit. Their functions are only advisory, and not mandatory, it is true, but their action has been thus far so conservative and reflects so fully the opinions and wishes of the profession at large, that already there is behind the Council on Medical Education a moral support and sentiment which have resulted in enacting their suggestions into laws by each of the sovereign states.

The standard requirements now recommended prerequisite to the practice of medicine consist of five cardinal points, as follows: "1. Preliminary requirements to be a high-school education or its equivalent, such as would admit the student to one of our recognized universities. 2. Preliminary requirements to be passed on by a state official, such as the superintendent of public instruction, and not by any one connected with the medical college. 3. A medical training in a medical college having four years of not less than 30 weeks each year, of 30 hours a week of actual work. 4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board. 5. The passing of a satisfactory examination before a state examining board." More than this can not reasonably be asked at this time in the way of a standard. We would earnestly suggest, however, that the work of the Council would be made far more effective if an inspector, fully acquainted with medical teaching, were empowered to visit as many schools as practicable each year to see that published requirements are being met and lived up to. It is not difficult to do so on paper. Such an inspector should be given every possible support and assistance by the dean of every school visited, and his reports to the medical council should reflect accurately the didactic, laboratory and clinical work being done by the several colleges. In this way, and only in this way, will some of the schools be kept up to the mark. While it is manifestly impossible for all to be visited and carefully examined each year, the expectation that an examination may be made without warning will surely prove a stimulus where it is most needed.

We would also recommend that the Council on Medical Education urge on the several states and territories, through their examining boards, the recognition and acceptance of the commissions of all medical officers in the Army, Navy, and Public Health and Marine-Hospital Service without question or examination. The government services are, and have ever been, distinctly creditable to the country, maintaining a standard higher than that of any state, therefore such officers should be allowed to practice wherever they are stationed, or, on retirement from their respective services, to take up civil practice without further examination. The commissions of medical officers are pretty generally recognized and accepted now, but it is not to the credit of a few states that they withhold such courtesy from men of acknowledged talents and professional attainments. There are still good causes for complaint on the part of practitioners of merit and experience who, on account of ill health or other reasons, are compelled to change

their location and must submit to an examination in the state of their adoption. A case in point: A practitioner of the highest moral character and scientific attainments graduated at the University of Dublin 25 years ago. Ten years later he settled in Philadelphia, graduating from and subsequently teaching in one of its schools. After 15 years of hard and commendable work, which brought him a lucrative practice and fame more than national in character as a specialist, his health failed him and with his wife he sought relief in a far-distant state. Knowing of his high attainments and exalted character, I tried to get a license for him to do consultation work in his new home without examination. I happened to know well the chairman of the state board. I felt and explained that the services of this eminent specialist would be of service to the physicians where he was. The reply which I received, while perfectly courteous and sympathetic, was immediate and emphatic that this gentleman must not write a prescription or see a patient until he should have passed the state board. The said state has no reciprocal relations with any other state and exacts an examination of every practitioner coming within its borders. There are yet, and we think will be for some years, many such states. While keenly sympathetic with states having a high standard and the courage to maintain it, your committee feels that if such states find it safer and better for the interests of their respective commonwealths to recognize no state license, because of the low standard of some, then they should so amend their laws as to recognize a certificate of a general and central body such as the Council on Education. Dr. Frazier, dean of the University of Pennsylvania, one of the members of that body, knew well the standing of the physician referred to. The members of the committee are so located geographically that, frequently at least, one of them would know all about the applicant, and more often still could get perfectly satisfactory evidence of his fitness for licensure. The high standard of the Council makes it impossible that either a charge of incompetency or unfairness could be brought against any one. All are experienced teachers in the leading schools of this country, and their advice should be accepted by every state and territory. That they would be as careful and rigid in their examination as any state board no one can doubt. Then, if so, what are ahe advantages to the candidate for licensure?

1. Their sessions are held in Chicago, practically the geographical center of the country.

2. All its members are, and will always be, experienced teachers, and, therefore, competent examiners.

3. It is more satisfactory, economical, and less embarrassing to get a license before moving to a distant state.

4. Many would prefer a general license to practice, if it could be had, and would willingly pass a more rigid examination to get it. Moreover, a physician moving from one state to another seeking either health or fortune, is not assured of success in advance and may be compelled to move repeatedly. Should such be the case, as it frequently is, the physician is held up by the several state boards. All should be empowered to recognize a license granted by the Council on Medical Education, admittedly the highest authority on the subject, as they are in possession of all facts pertaining to the school whence the applicant graduated.

5. The work of the Council is already too laborious to permit of its examining all, or any, recent graduates. It might, however, be willing to examine those physicians caring to apply, who after at least ten years of honorable practice are compelled to change their location. Believing in a high standing for all states and at all times, we would not be understood as intimating that any state board should be less strict than it is in protecting the interests of the commonwealth it serves. A majority should be even stricter than they are. But we do maintain that the physician of ten or more years of practice and recognized moral standing, one who would be a credit to any community, should not be compelled to sit between men just out of college and take the same examination. The novitiate should rightly be examined rigidly in all the branches, and his examination is, and must be, largely didactic. The practitioner of experience is entitled to an examination chiefly clinical in character.

6. Chicago offers abundant clinical facilities and they could be utilized by the Council in the examinations.

The Confederation of Reciprocating, Examining and Licensing Boards has materially advanced the cause of reciprocity during the past year, as 13 states issued 488 certificates. The same states issued 720 certificates since 1902. Eight states in the confederation have made no report.

DETAILED STATEMENT OF CERTIFICATES ISSUED THROUGH RECIPROCITY, 1905.

States.	Qual. No.1. 1905.	Qual. No. 2. 1905.	Total. 1905.	Total since 1902.
District of Columbia	1	1	2	7
Georgia*	..	..	..	..
Illinois	39	..	39	60
Indiana	4	7	11	43
Iowa	51	8	59	98
Kansas*	..	..	..	..
Maine*	..	..	..	..
Maryland*	..	..	..	..
Michigan	33	18	51	101
Minnesota	20	1	21	21
Missouri*	..	..	..	..
Nebraska*	..	..	..	..
Nevada*	..	..	..	..
New Jersey	162	..	162	162
North Dakota	3	..	3	3
Ohio	23	..	23	33
South Carolina	18	..	18	18
Vermont	8	..	8	8
Virginia*	..	..	..	..
Wisconsin	..	..	67	142
Wyoming	24	..	24	24
	386	35	488	720

* No report received.

If all the states were to join the Confederation, which is unlikely, it would still be desirable to have a central board for the reasons already given. The good work now being done by the Council on Medical Education, the several state boards, the Confederation of Reciprocating Boards and medical colleges throughout the country, is an earnest of what can and should be done. Let us aid them in every way, for it is only by the co-operation of all these forces that reciprocity, just and abiding, can be reached. None other is desirable.

J. M. MATHEWS,
T. J. MURRAY,
WM. L. RODMAN, Chairman.

On motion of Dr. Percy, Illinois, it was referred to the Reference Committee on Medical Education (see page 1875).

The President called for the Report of the Committee on Organization.

Dr. J. N. McCormack, Chairman of the committee, asked for further time, which was granted (see page 1870).

The report of the Committee on Scientific Exhibit was called for, and as the Chairman, Dr. F. B. Wynn, Indiana, was absent, it was passed (see page 1871).

On motion, the House of Delegates then adjourned until 2 p. m., Tuesday.

Third Meeting—Tuesday, June 5

The House of Delegates convened at 2 p. m., and was called to order by President Mayo.

The minutes of the previous meeting were read and approved.

The Secretary read the report of the Committee on Walter Reed Monument as follows:

Report of Committee on Walter Reed Monument.

ACCEPTED AND COMMITTEE DISCHARGED.

The Committee on the Walter Reed Memorial Fund desire to submit, as is required, their report, and, as their work is practically finished, would ask to be discharged.

The amount subscribed to the fund up to May 1, 1906, as reported to the committee by General Calvin DeWitt, Secretary of the Walter Reed Memorial Association, is $20,943.64. The amount paid in is $19,730.64, leaving subscribed, but not yet paid, $1,213.

It was the desire of the committee and also of the Walter Reed Memorial Association that the sum of $25,000 should be raised. The committee regret very much indeed that American cities and towns which have been devastated by yellow fever have contributed much less than $1,000 all told, and nothing in the way of public, municipal or state subscriptions. They still further, and especially regret that the sum total from Cuba has been only $25. It seems to the committee that the country from which yellow fever was eradicated after having been continually present for 140 years, and which has had pointed out to it clearly the way in which future epidemics can be absolutely avoided, should certainly have made some substantial acknowledgement of the services of a surgeon who not only made a contribution of enormous value from the sanitary point of view, but who has established its future commercial prosperity.

The committee can not tell precisely the amount subscribed by the medical profession, but it is a very large proportion of

the nearly $20,000 collected to date. It gives us pleasure to call attention to the fact that while few business men have recognized the enormous money value of Dr. Reed's services, to say nothing of the saving of human lives, his own profession has given such substantial recognition of the worth of his services in preventing a disease which has committed such dreadful havoc in the past, but will never do so again.

Joseph D. Bryant, Victor C. Vaughan,
A. C. Cabot, Robert F. Weir,
T. S. Cullen, W. W. Keen, Chairman.
Committee.

On motion of Dr. V. C. Vaughan, Michigan, the report was adopted.

Dr. Philip Mills Jones, California, moved that the committee be discharged with the thanks of the House of Delegates for its work. Seconded and carried.

The report of the Committee on Scientific Research was called for, when the Secretary read a telegram from the Chairman of that committee, Dr. Alfred Stengel, stating, "Unavoidably detained; will present report of committee Wednesday."

Report of the Committee on Organization.

READ AND REFERRED TO COMMITTEE (see page 1873).

Dr. J. N. MacCormack, Kentucky, presented the report of the Committee on Organization, as follows:

Gentlemen:—Since my last report to the House of Delegates at Portland, I have made regular itineraries in the states of Minnesota, Oregon, California, Texas, Oklahoma, Tennessee, Illinois and Kentucky, and have held one or more meetings or attended the state meetings in North Dakota, Montana, Washington, Idaho, and Arkansas. As reports of the conditions found and the work done in most of these states have already been published in The Journal in a more extended form than would be possible or profitable here, I shall content myself with a brief account of two phases of my experience which appear to be of special interest and importance.

For two years or more laymen had been invited to occasional meetings, and my addresses have been more or less modified and elaborated to adapt them to such audiences. The possibility of receiving representatives from all classes of the laity, and finally of regular mixed and lay audiences into a general plan for a campaign of education of the public in regard to medical and health matters was such a gradual growth and evolution, that I am not sure that it can yet be said to be fully complete in my own mind even. I have given it as fair a test as was possible under existing conditions in the five states last visited, and the results were most gratifying wherever audiences were secured.

Singular as it may seem at first sight, I found that lay attendance at the meetings depended almost entirely on the extent of the medical organization in the community. As a rule, laymen of the thoughtful classes, who would especially appreciate and be responsive to the view of co-operative work suggested by me, have never attended such meetings in the past, did not know even that they could do so, or wanted to, and, in fact, will not do so unless personally invited and urged by their family physician or an authorized committee of the profession. In many localities I found that leaders in the profession, and even leaders in this Association, had little conception of the purpose of my visit, although they usually became most enthusiastic during the meetings, and after it was too late to secure the attendance of many of those whom it was most important to have present.

Once there, laymen of the intelligent classes took quite as active and intelligent interest in everything pertaining to the affairs of the profession as medical men did. I found it an easy task to make them understand that every interest of the profession, scientific, moral and material, concerned them quite as much as it did even the members of the profession. I discussed all of these interests in the plainest and most outspoken way, often almost to the point of tediousness in order to prevent misunderstanding, and men and women would almost invariably follow to the last word, with unbroken interest, and then take part in the public discussion which always followed in a way to indicate usually a most intelligent comprehension of the matter in hand. I am sure that the possibilities of this feature of the work have not even dawned on the mind of the profession in most communities.

The other phase of work on which especial emphasis should be laid is that relating to post-graduate work in the county societies. This is in such successful operation in a number of counties that it has passed the experimental stage. In a number of these the meetings are held weekly and in some two and even three times a week. In those securing the best results the course of study has been mapped out with care; regular teachers are selected from the younger element of local membership, and all available equipment and clinical material are utilized for scientific and practical demonstrations. Such a course is possible when as many as three real, live doctors can be conveniently grouped together in any county, or in any section of any county.

Next to the question of medical education, which affects the man already in practice only indirectly, how to make the county society what it should be, and what it can be in every jurisdiction, is the great problem now before the profession of this country.

As compared with it, all others sink into insignificance. Given these as a foundation in every county, the success of the state and national organizations is not only permanently assured, but with the mutual understanding and co-operation between the profession and the public, made possible through them, the difficulties in the way of securing and enforcing legislation and all similar matters will be gradually eliminated, and the profession will not only come into its own, but, what is still more important, benefits would come to the people of this country through a unified, vitalized, organized, co-ordinated profession, which would make it the most powerful civilizing and uplifting influence of modern life.

Another, and the concluding point, developed and emphasized in the course of my varied and extended experience in going over this country, and especially within the last year, has been the evidence at every turn of a powerful, alert and implacable foe to organization in the proprietary medicine interests, with its agencies and tentacles reaching into and utilizing every distracting and disaffected element in every section. Resourceful, untruthful and unscrupulous, with unlimited funds, and backed by a powerful element of both the professional and lay press, its literature, multiplied, distorted and misleading, has been showered on the profession like the leaves of Vallombrosa. Anxious only for results, it has carefully sought for every weak point in our line of defenses, varying its method and apparent object of attack as to time and locality with a skill and judgment worthy of a better cause. School interests are appealed to one week, journal prestige the next, and the personal prejudices and peculiarities so abundant in our profession, always with the one constant purpose in view of playing class against class and interest against interest, in order to serve its own unvarying and nefarious purposes. To this end advantage has been taken of our mistakes, unavoidable, in the evolution of such an undertaking; honest differences of opinion have been exaggerated or misinterpreted, with a cloud of dust always enveloping or concealing its own deformities, which would otherwise repel honest, but misguided members of our profession which the proprietary interests have been constantly able to use against us.

The defense against this and all similar and lesser evils is general, unusual and all pervading organization and unification, and especially of the kind which can only be fostered in county societies. To this, either as your representative or in my individual capacity, I have decided to dedicate the remainder of my life.

On motion, the report was referred to the Reference Committee on Reports of Officers.

Report of Reference Committee on Amendments to Constitution and By-Laws.

Dr. Alexander R. Craig, Pennsylvania, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws as follows:

The committee would urge on the House of Delegates the advisability of extreme conservatism in changing the Constitution and By-Laws of the Association. The effort of the committee will be to recommend only such changes as in their judgment are demanded by the growth of the Association.

CHANGES IN ARRANGEMENTS FOR SESSIONS.

1. The committee recommend the adoption of the amendment to the Constitution, Article VIII, offered at the Portland session and awaiting your action at this session, viz.:

By adding the following: "The time and place of session may, however, be changed by the unanimous action of the Board of Trustees at any time prior to four months from the time selected for the session."

So that Article VIII shall read: "The Association shall hold an annual session at a time and place to be fixed by the House of Delegates. The time and place of session may, however, be changed by the unanimous action of the Board of Trustees at any time prior to four months from the time selected for the session."

ALTERNATES FOR DELEGATES.

Of the amendments suggested in the report of the General Secretary, and which this Reference Committee understands now to be before the House of Delegates for your action, the committee recommends the following change in Book 4, Chapter 12, Section 2, page 25:

The addition to this section of the word after "representative" the words "and an alternate," so that the last sentence of this section shall read: "Each Section shall also elect annually one representative and an alternate to the House of Delegates of the American Medical Association to serve one year."

PUBLIC SERVICE OFFICERS' MEMBERSHIP.

The committee further recommend that Book 1, Chapter I, Section I of the By-Laws, page 6, shall be so changed as to read:

Section 1. Membership—How Obtained.—A member in good standing of the constituent association of the state in which he resides may become a member of the American Medical Association by presenting to the General Secretary: (1) Satisfactory evidence of the above qualification; (2) written application for membership on the prescribed form; (3) the annual dues. Commissioned medical officers of the U. S. Army, U. S. Navy and U. S. Public Health and Marine-Hospital Service shall be members; they shall not be required to pay annual dues, nor shall they receive THE JOURNAL of the Association, unless on personal subscription.

In order to overcome the difficulty suggested by the U. S. Army, the U. S. Navy, and the U. S. Public Health and Marine-Hospital Service of making appointments to the House of Delegates for a term of years, your Reference Committee recommend the adoption of the following addition to the By-Laws, Book 2, Chapter 4, Section 2, page 9, the following sentence:

Except that delegates elected by the sections shall hold office for but one year, and appointments made from the U. S. Army, the U. S. Navy and the U. S. Public Health and Marine-Hospital Service shall be for one year.

Dr. Frank Billings, Illinois, moved that the report be accepted, and that the recommendations contained therein be considered, one by one. Carried.

Section I was read, after which Dr. Guthrie moved its adoption. Seconded. After some discussion by Drs. Coe and Moore, Dr. Coe moved to lay this section and the recommendation on the table. Seconded and lost.

Dr. J. N. Jackson, Missouri, thereon moved the adoption of the section as recommended by the committee, which was seconded and carried.

Section II of the report was read and adopted.

Section III was read, and after discussion by Drs. Grosvenor, Craig, Moore, Rodman, Vaughan, Cantrell, this section and the amendment were adopted.

Section IV was read and adopted, after which Dr. Frank Billings moved the adoption of the report as a whole, which was seconded and carried.

Report of Committee on Scientific Exhibit.

Dr. F. B. Wynn, Indiana, presented the report of the Committee on Scientific Exhibit:

The seventh scientific exhibit is submitted for your inspection. The first exhibits, in the very nature of things, were heterogeneous collections. The absence of pathologic grouping made inspection often tedious. The next step, therefore, in the evolution of the exhibit was the grouping of specimens or exhibits, to illuminate certain phases of pathology, hygiene, physiology, etc. The particular topics chosen have been varied from year to year, according to the subjects which were prominent before the medical and scientific world. The third step naturally sought was efficient demonstration of the exhibits presented. This third stage, begun three years ago at Atlantic City, has at this session attained a degree of perfection which it would be difficult to surpass. The program of demonstrations herewith submitted for your consideration would alone be worthy a meeting of this great organization. Its range and quality are not only a matter of pride to those concerned in its preparation, but show the pleasing fact of a growing tendency of scientific medical men everywhere, to marshal under the banner of the Association.

In view of the extraordinary character of exhibits and demonstrations, it has seemed to the committee that a volume published, containing copious illustrations and detailed descriptions of the demonstrations formally made, would afford the medical and scientific world very striking evidence of the quality and extent of the scientific work being done by members of the Association.

Brief reference may be made at this time to the beneficent influence of the Scientific Exhibit of the Association on smaller medical organizations. State associations quite generally, and even some county organizations, have adopted the exhibit idea. A powerful stimulus has been given to medical measures throughout the country. Those who have noted the exhibits from year to year must have observed the marked improvement in the artistic quality of the material presented. The national tuberculosis exhibit, recently seen in many of the larger cities of the United States, may likewise be looked on as an outgrowth of the work of this Association. The committee suggests that not alone in tuberculosis, but on various sanitary and hygienic questions, the exhibit idea, under judicious medical supervision, might be used with telling effect for instructing the laity. To this subject the Association should address itself.

In conclusion, the earnest thanks of the Association are due the large number of men who have contributed so abundantly to the success of the exhibit; and particularly to Drs. W. T. Councilman, Henry A. Christian and F. B. Mallory, for their energetic and masterful service in organizing and carrying the exhibit to a successful issue.

FRANK B. WYNN, Director.

On motion the report was adopted.

Loving Cup Given to Dr. Wynn.

Dr. T. J. Happel, Tennessee, presented a loving cup to Dr. Wynn on behalf of the Board of Trustees, and in so doing said:

Mr. President, Gentlemen of the House of Delegates, Dr. Wynn:—To me has been assigned by my confrères on the Board of Trustees a duty that should be, and would be, more pleasant to one who is a fluent speaker, or who could deal in other things than an array of facts or cold figures. I am but a plain, blunt man, a country physician, who knows not how to say things otherwise than in the most direct and the plainest possible way. What is said to-day will come from the heart.

I am directed to express to you the appreciation of the Board of Trustees, of this House of Delegates of the American Medical Association, in fact, of the medical profession of these United States, for the work you have done in bringing into the life of this Association, nurturing, and causing to develop beyond the expectation of the most sanguine, that which was first known as a pathologic exhibit, but which has now grown to such proportions as to have merited and received the title of "Scientific Exhibit." Prior to the beginning of this century such an annex to the sessions of this Association had never been dreamed of, or discussed.

The records show that this work of yours was begun in 1900, with sixteen exhibits, chiefly from the Indiana State Medical Society. The display was such as to attract the attention of many of those who attended the Association session at Atlantic City that year, and while there were only sixteen exhibitors, the importance of the work undertaken by you was at once recognized by the Association, and the Board of Trustees was requested to appropriate the necessary sum of money to enable you to not only keep up the good work, but to foster and develop it. The results of your labors were shown when in 1901, at St. Paul, there were twenty-nine exhibitors, which was the greatest number presenting specimens at any time, yet subsequent years have shown an increasing interest in the subject, there being not so many exhibitors, but more exhibits by those who sent specimens. While not much can be said for the beauty of the exhibit, it is rapidly becoming one of the most important features of the meeting of the American Medical Association. Your works remind me, Dr. Wynn, of a fine painting which I saw in the palm garden of the St. Charles Hotel, in New Orleans, when we went there in 1903. On the wall, finely framed, is, as already stated, an oil painting, done by one of the old masters, which, seen at a short distance, appears to be a ghastly, grinning, decomposing skull. You can imagine that you can almost see the destructive agents of death devouring its contents. As you withdraw yourself further and further from the painting, the appearance of it begins to change. The picture soon assumes the form and shape of a young lady, and at a certain distance, as one of the fairest of her sex, her eyes tinted with the blue of the violet, glowing with the light of the stars, and her cheeks painted with the pink of the peach blossom, indicative of the most perfect health. I say that your work reminds me of this picture—why? Because, close to these exhibits, we behold the destructive work of the different animalculæ, bacilli and germs producing death, but when out of sight of these studies, we realize that they are made for the purpose of discovering enough of the life cycle of each of these micro-organisms to combat them successfully in the human system, and to restore the blush to the cheek of the maiden, and the starlight to eyes that have been

dimmed by the work of some of the destroying agencies which your work has enabled us to identify and to guard against. I feel that I voice the sentiment of every one present here to-day when I express to you the wish that you may live long to carry on this work so auspiciously begun by you. We trust that this Scientific Exhibit, which is yet in its infancy, may continue to grow both in size and importance, till your fondest dream in regard to it may have been realized; that hope has reached full fruition.

Now, Dr. Wynn, as a token of our appreciation of the work you are doing for this Association in your special department, representing the Board of Trustees, and feeling that I express the good will of this House of Delegates for you, I present to you this loving cup, and drink to your long life and happiness in the pure water which it now holds. Keep it as an heirloom in your family, handing it down from son to son, telling them to keep it worthily, and when one of them asks whence it came let him be told that it was given you as a token of appreciation of the work which you have so unselfishly done for the advancement of the most truly scientific feature of the sessions of the American Medical Association.

Dr. Wynn thanked the Board of Trustees and the members for this beautiful tribute of their confidence, esteem, and appreciation of the work he and his colleagues had done and were doing.

Report of Committee on Recording Minutes.

READ, AMENDED AND APPROVED.

The report of the Committee on Recording Minutes was called for, and was read by the Secretary, as follows:

To the President and Members of the House of Delegates:—The committee appointed to consider the method according to which the minutes of this house are kept and published, and to make recommendations in reference thereto, begs leave to submit the following report:

1. The committee finds, by examination of the minutes for several years past, that at places they have been incomplete by reason of the omission of reports, resolutions, communications, etc., the documents in question being referred to, but not printed in full.

The committee recommends that such omissions be not made in the future.

2. The committee is of the opinion that the names of the members of the House of Delegates present at each session should be reported in the minutes. Inasmuch as this could not be done without a call of the roll, the committee recommends that calling the roll be made a part of the regular order of business at each sitting of the house.

3. The committee is also of the opinion that to prepare complete and full minutes of a session of the House of Delegates requires more time than is available between the sittings. The committee recommends, therefore, that, while the Secretary should read at the opening of each session a memorandum of what transpired at the previous sitting, such memorandum shall not be deemed the complete and final minutes of the session.

4. The committee recommends that as early after each annual session of the Association as can be done, the Secretary shall prepare full and complete minutes of the session and cause them to be published in pamphlet form for distribution to the members of the House of Delegates and to be inserted in THE JOURNAL for the information of the members of the Association, said minutes to be submitted for adoption at the next annual session, and, as a matter of course, to be subject to correction.

5. The committee recommends that the original notes of the proceedings of the House of Delegates, made by the official stenographer, be permanently filed, in order that should differences of opinion arise as to what was said or done, such notes can be referred to.

6. According to the information of the committee, adjourned meetings of this body have been held in the State of Illinois for the purpose of validating in that state business transacted in other states, and thus technically to comply with the requirements of the charter of the Association. Looking back over the official minutes for several years past, no minutes of such meetings have been found. The committee, therefore, recommends that the transactions of any such adjourned meetings as may be held in the future be published in THE JOURNAL and also appended to the minutes of the annual meeting recommended to be published in pamphlet form.

All of which is respectfully submitted.

DONALD CAMPBELL, W. S. FOSTER,
J. F. PERRY, F. PASCHAL,
W. H. SANDERS. July 13, 1905.

The Secretary, after reading the report, stated in reply that in two or three instances resolutions offered at previous meetings had been accidentally lost or misplaced by members of committees to whom such resolutions had been referred; hence only the gist of such resolutions could be printed in the minutes. Furthermore, the Association published the minutes of the House of Delegates in pamphlet form; that the shorthand notes of the official stenographer were on file and could be referred to at any time should differences of opinion arise; that the minutes of adjourned meetings of the Association for validating business transacted in other states had been recorded, but not published in the official minutes of the House of Delegates, as it was not thought necessary to do so.

Dr. Joseph W. Grosvenor, New York, moved that the report of the committee be considered section by section.

This motion was seconded and lost.

It was then moved that the report be adopted. Seconded.

Dr. W. H. Sanders, Alabama, reiterated the points contained in the report of the committee, and said as its Chairman he was glad to know the reasons for the incompleteness of the minutes in some particulars in the past. He was also glad to know that the shorthand notes of the official stenographer were placed on file; and that the minutes of adjourned meetings for validating business done in other states had been recorded. He said there was no intention on the part of any member of the committee to reflect on the work of anybody, but as the Association was undergoing a process of evolution it was essential to have the proceedings as complete as possible.

After discussion, which was participated in by Drs. Gray, Jackson, Chassaignac, Happel, Sanders, a delegate suggested that Section 1 of the report be stricken out as he thought it reflected on the official stenographer.

It was therefore moved, as an amendment, that this section be stricken out and that the report be adopted as presented.

The amendment was seconded, accepted, and the original motion as amended was carried.

Orators Nominated by Sections.

AMENDMENT REFERRED TO COMMITTEE (see page 1875).

Dr. E. Eliot Harris, New York, offered the following amendment to the By-Laws:

Chap. VII, Sec. 5, p. 13: "The Sections on Practice of Medicine, Surgery and Anatomy and Hygiene and Sanitary Science shall nominate one candidate from each section to be elected by the House of Delegates, to deliver orations under the auspices of the respective sections.

These nominations shall be submitted to the House of Delegates before the hour set for election.

This was referred to the Reference Committee on Constitution and By-Laws.

Report of Reference Committee on Reports of Officers.

Dr. Philip Mills Jones, California, presented the report of the Reference Committee on Reports of Officers:

Mr. President and Delegates:—Your committee has carefully considered the reports of officers submitted to it, and begs to report thereon, with recommendations, as follows:

President's Address (See page 1849).

INVITATION TO MASSACHUSETTS GUESTS.

We recommend the adoption of the following, suggested in paragraph 4 of the President's address:

Resolved, That all members of the Massachusetts Medical Society are hereby cordially invited to attend the various sessions of the American Medical Association now being held in this city of Boston, and to participate in the proceedings of the same.

THANKS TO SECRETARY.

Paragraph 8. Your committee feels that the President has placed this body under an obligation of gratitude to him for so eloquently stating the valuable services rendered our Association by its Secretary, and recommends the adoption of the following:

Resolved, That the American Medical Association extends to its Secretary, Dr. George H. Simmons, its sincere thanks for the able, conscientious and efficient manner in which he has conducted the affairs of his office and the ability which he has displayed in making THE JOURNAL of our Association the foremost medical publication in the world.

IMPORTANCE OF GOOD TRUSTEES.

We believe that this House of Delegates is again indebted to the President for directing our attention to the invaluable services rendered our profession and our Association by the Board of Trustees, and we heartily endorse his recommendation to use the greatest care in the selection of those whom we elect to this most important office, to the end that no person

be elected a Trustee whose affiliations are such as to be detrimental to the best interest and welfare of our Association. We recommend the passage of the following:

Resolved, That the Trustees of this Association be nominated orally and be elected by ballot of the House of Delegates in separate order. We further recommend that at least two nominations be made to fill each vacancy in the Board of Trustees.

Paragraphs 12 and 13 refer to the Constitution and By-laws and should be referred to the special and appropriate committee.

POLICY ON PUBLICATIONS.

Paragraphs 14 and 15. Your committee heartily endorses the opinion expressed by our President concerning the publications of the Association, and highly commends to the Trustees a continuance of the present policy relating to publications other than THE JOURNAL.

We also most heartily recommend for your endorsement the very moderate words of our President in condemnation of the unspeakable dishonesty and nastiness which are to be found in the nostrum and "patent-medicine" business.

ORGANIZATION WORK PRAISED.

We commend to your careful consideration the most remarkable work of our committee on organization and recommend the passage of the following:

Resolved, That the sincere thanks of the American Medical Association be extended to Dr J. N. MacCormack, and that we earnestly request him to continue his work of organizing the medical profession of the United States.

Report of the Secretary. (See page 1851.)

BIOGRAPHICAL CARD INDEX, ETC.

Most of paragraphs 2, 3 and 4 of this report deal with the Constitution and By-laws and properly go to that committee. In considering the balance of the report, dealing with membership, Councilors' bulletin and biographical card index, your committee is deeply impressed with the efficient and systematic manner in which the work of the Secretary for the betterment of the Association has been prosecuted. The fact must be recognized that when any great work is to be accomplished, the actual labor of direction and organization must be in a few hands; and we feel that the Association is to be congratulated on having in charge of this work two such able men as Drs. George H. Simmons and J. N. MacCormack. We earnestly recommend for your endorsement the various enterprises enumerated which have been originated by the Secretary.

Report of Trustees. (See page 1861.)

The report of the Trustees naturally divides itself into four sections: 1, The general conduct of the financial and business interests of the Association; 2, the business conduct and general policy of THE JOURNAL; 3, the work involved in undertaking to publish a directory of physicians; and 4, the work of the Council on Pharmacy and Chemistry, which is done under the supervision of the Trustees.

BUSINESS WELL HANDLED.

1. Your committee finds from careful examination of the report, that the business and general financial affairs of the Association have been conducted in an exceedingly able manner and recommends for your commendation the business acumen of the Trustees, and the manner in which they have handled and invested our funds and have worked toward the essential object of securing a safe and safely invested reserve fund. As the work of the Association increases from year to year and the magnitude of its responsibilities increases, the more evident becomes the desirability of having such a reserve fund to fall back on in case of any untoward emergency.

APPROVAL OF JOURNAL POLICY.

2. In regard to THE JOURNAL, your committee believes that every member of this House of Delegates fully appreciates the magnificent work that has been done in upbuilding THE JOURNAL and placing it in the foremost ranks of all medical publications. We believe that the Trustees and the Editor have done everything to carry out the wishes of the Association in regard to the business policy of THE JOURNAL, and we recommend the adoption of the following:

Resolved, That the American Medical Association heartily endorses and approves of the policy of accepting for publication all advertising matter coming within the provisions established by the Council on Pharmacy and Chemistry of this Association, believing that it is wise and desirable thus to present for the scrutiny of the physicians such articles as are honestly made and are ethically marketed.

WHEREAS, It has been noised abroad by the enemies of a united medical profession that this Association and the state medical associations are attempting or will attempt to destroy all medical journals not owned or controlled by them; and

WHEREAS, Much of the advance in medical science in the last fifty years has been due to the efforts and labors of medical journals owned and edited by physicians and others, and this Association and its work would have been greatly hindered and delayed had it not been for the moral support of these journals: now, therefore, be it

Resolved, That the American Medical Association heartily endorses, and requests its members to support, all such medical journals, no matter by whom owned, as are engaged in promoting the interests of scientific medicine and which refuse to accept financial aid or advertisements from venders of nostrums, or others inimical to the true interests of the profession.

VALUE OF DIRECTORY AND CARD INDEX.

3. Your committee agrees with the Trustees in the necessity for the medical profession keeping track of its own members. So far as the actual publication of a book or directory is concerned, your committee believes that the Association is quite right in undertaking to suppply an accurate volume of this sort at a reasonable price, and that it is better for the Association to do this work than to have any layman secure an equal or larger price from the members of our profession, for a less accurate publication of a similar sort.

But your committee believes that the mere publication of such a volume is a matter of secondary consideration. The real value of the work undertaken by the directory department, and the real value of the investment, is in the records secured and filed, on which records the data for the published volume are based. An illustration of the significance of this is to be found in California. The late lamentable disaster destroyed by fire all the records of the Board of Medical Examiners of the State Medical Society and of the County Clerk of the city of San Francisco. Fortunately, however, our Association, as part of the directory work, has secured and filed in Chicago full and accurate information concerning all licentiates of the State of California, so that we may replace these records for that stricken community. So valuable do we consider this portion of the work of conducting the directory department that we most strongly recommend the passage of the following:

Resolved, That the Trustees be requested to have constructed in the cellar of our building in Chicago, a brick vault in which all the records of this character pertaining to the graduation and licensing of physicians shall be kept.

COUNCIL ON PHARMACY AND CHEMISTRY (see page 1867).

4. Your committee has given this matter full and careful consideration and most heartily commends the endorsement of the work thus far accomplished by the Council. The magnitude of work placed in the hands of this Council can scarcely be realized by one who has not delved into the mire of corruption and fraud in search for the root of the nostrum evil. As the undertaking is large, so must firm and wise, though ever careful and sometimes conservative progress be made, and great patience must be exercised. We believe that the policy of the Trustees in the organization of the Council and in the prosecution of its work up to the present time, has been wise and safe, and we feel sure that your honorable body may, without hesitation, endorse the work of the Council and encourage its further activity along the lines which have been mapped out for it. The corrupting influences of fraud, deceit and dishonesty which have been ranged against the efforts of our Association, acting through the Trustees and this Council, are such as to demand the active support and co-operation of every honest man in support of the efforts of our Association to secure simple honesty and scientific betterment in materia medica preparations. We recommend the adoption of the following:

Resolved, That the American Medical Association extend its thanks and appreciation to the United States Public Health and Marine-Hospital Service for its co-operation in the work of the Council on Pharmacy and Chemistry of this Association, and to every member of that Council for the great work which they have done and are doing.

PHILIP MILLS JONES, Chairman.
DONALD CAMPBELL,
A. JACOBI,

Dr. Frank Billings, Illinois, moved that the report be considered section by section, which was seconded and carried.

Sections 1, 2, 3, 4, 5, 6, 7 and 8, with the accompanying resolutions, were adopted, after which Dr. E. Eliot Harris, New York, moved the adoption of the report as a whole, which was seconded.

After discussion by Drs. Grosvenor, Coe, MacCormack, Sanders, Ferguson, Vaughan, Simmons, Happel and Montgomery, the President put the motion of Dr. Harris, which was carried.

Dr. Harris thereon moved that the personal discussion be not entered on the records.

This motion was seconded by several, and carried.

Dr. C. E. Cantrell, Texas, moved that a committee of five

be appointed to take this matter up with the gentlemen who feel that they have cause for grievances and settle the matter. Seconded.

Dr. Harris said that this should come before the Committee on Miscellaneous Business; that that committee would be very glad to take the matter up and settle it in a way so that everybody would go away with good feeling.

Investigating Committee Proposed.

PROPOSAL LAID ON TABLE.

Dr. H. O. Walker, Michigan, presented a preamble and resolutions, with remarks, as follows:

Mr. Chairman:—Since the address of our worthy President of yesterday indicated the sentiment of uncertainty and distrust relating to the management of THE JOURNAL and sundry other matters, we naturally feel that these criticisms are both unjust and unfair, and yet every effort should be made to dissipate this feeling, at least from the minds of the members of this Association.

Therefore, Mr. Chairman, I beg leave to offer the following preamble and resolutions:

WHEREAS, The membership of the American Medical Association, numbering 19,285, is scattered throughout all the states and territories;

WHEREAS, The affairs of the Association are so intricate that it is difficult to make them clear to all; and

WHEREAS, Because of these facts there has arisen the sentiment which bids fair to become disagreeably large unless the causes on which it feeds be removed, viz., ignorance of the real truth; therefore, be it

Resolved, That a committee of five, namely G. Frank Lydston, Chicago; Frederick Holme Wiggins, New York; A. H. Cordier, Kansas City, Mo.; Duncan Eve, Nashville, Tenn., and D. W. Graham, Chicago, be appointed by the House of Delegates of the American Medical Association and instructed, first, to make an exhaustive study of the affairs of the Association, THE JOURNAL, etc.; second, to employ an auditing expert to go over all the books of the Association; to have power to summon officers and employées of the Association before it, to give needful testimony; and in such other ways as it may deem best to secure all facts necessary for such independent report as may be needful to accomplish its purpose.

Resolved, That a sum of money be appropriated sufficient to defray the actual expenses of this study.

Resolved, That this committee report to the House of Delegates at their next session in 1907.

On motion of Dr. J. N. Jackson, Missouri, the preamble and resolutions were laid on the table.

Dr. Philip Mills Jones, California, moved a reconsideration of the vote by which the preamble and resolutions were tabled. Seconded.

Dr. M. L. Harris, Illinois, raised the point of order that the House could not reconsider the vote by which the resolutions were tabled.

The President ruled the motion to reconsider out of order.

Committee on Insurance Proposed.

Dr. J. N. MacCormack, Kentucky, offered the following, which was referred to the Committee on Miscellaneous Business (see page 1875).

Resolved, That a standing committee on insurance is hereby created to consist of five members, two of whom shall be the President and Secretary, and the other three to be nominated by the President and confirmed by this House of Delegates. It shall be the duty of the committee to consider the relations and duties of the medical profession of this country to the insurance business, both companies and policy holders to confer, treat and act with authorized representatives of any of these interests, and it is authorized to speak and act for the profession in all matters relating to its duties and to give publicity to its plans and purposes at any time through THE JOURNAL, or otherwise, as may be deemed best.

Report of Committee on Credentials.

REFERRED TO COMMITTEE (see page 1875).

Dr. W. B. Dorsett, Missouri, reported on behalf of the Committee on Credentials:

The Committee on Credentials begs to report that in a number of cases delegates and alternates have appeared, bearing credentials faulty or improperly made out, placing the committee in a difficult and embarrassing position.

Your committee therefore begs to suggest that this House of Delegates request all State Secretaries to exercise all possible care in preparing and issuing credentials to all duly elected delegates and alternates.

We further suggest that this House of Delegates order that hereafter the Committee on Credentials be instructed to refuse to recognize any person or delegate or alternate not in possession of credentials properly made out and signed by the President and the Secretary of the state society from which the delegate comes.

The committee further suggests that the attention of the Presidents and Secretaries of all state societies be called to Book 2, Chapter 4, Section 1 of the By-Laws of the American Medical Association.

WALTER B. DORSETT, Chairman.
THOMAS MCDAVITT,
W. R. TOWNSEND,
H. BERT ELLIS.

This report was referred to the Reference Committee on Rules and Order.

California Library Committee Created.

Dr. Frank Billings, Illinois, presented the following preamble and resolutions, which were adopted:

WHEREAS, The recent disaster which occurred in California destroyed the general private medical libraries; and

WHEREAS, The need of medical books by the physicians of San Francisco and other afflicted cities of California is great; therefore, be it

Resolved, That Drs. Dana (chairman) of New York, Musser of Pennsylvania, Thayer of Maryland, R. C. Cabot of Massachusetts, Stockton of (Buffalo) New York, Forchheimer of Ohio, Sewall of Colorado, J. A. Capps of Illinois and Fischell of Missouri, be and are hereby made a committee to be known as the California Library Committee. Be it further

Resolved, That the committee be empowered to add to its numbers.

Resolved, further, That the committee be requested to select medical books and files of medical journals from libraries, medical publishers and private individuals and to forward the same to an appropriate committee of the County Medical Society of San Francisco.

Subscriptions of Members.

Dr. J. B. Donaldson, Pennsylvania, suggested an amendment, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws, proposing to amend the By-Laws so that of the annual dues $4 shall be set aside for subscription to THE JOURNAL for each member (see page 1875).

Oppose Reduction of Insurance Fees.

Dr. D. Hubert Work, Colorado, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business (see page 1875):

Resolved, That the American Medical Association heartily endorses the action of many of its component county societies in their refusing to accept a reduction of the fees heretofore paid for life-insurance examinations by certain so-called old-line companies.

Urge Passage of Army Bill.

Dr. W. L. Rodman, Pennsylvania, offered the following preamble and resolution, which were adopted:

WHEREAS, The bill to increase the efficiency of the Army (Senate 1539), which has been for two years before Congress, has the support of the War Department, of the Secretary of War and of the President, who has sent to Congress a special message urging its passage, and has been approved by referendum by the American Medical Association: be it

Resolved, That the President of this Association be requested to appeal to the Speaker of the House of Representatives by telegram, asking his good offices in bringing this measure to a vote at the present session.

On motion, the House of Delegates adjourned until 5 p. m. Wednesday.

Fourth Meeting—Wednesday, June 6

The House of Delegates met at 5 p. m., and was called to order by the Second Vice-President, Dr. K. A. J. Mackenzie, Portland, Ore.

The minutes of the previous meeting were read and approved.

Report of Committee on Scientific Research.

READ AND REFERRED TO TRUSTEES.

The Secretary read the report of the Committee on Scientific Research:

Gentlemen:—Your committee would report that in accordance with the regulations of the Board of Trustees two grants have been made for the year 1906 to Dr. G. F. Ruediger, Chicago, for further work on "Streptococcus Infections," and to Dr. Richard M. Pearce, Albany, for work on "Ether Glycosuria and the Elimination of Uric Acid, Creatin, and Phosphorus."

Dr. H. T. Ricketts of the University of Chicago applied for a grant of $200 to aid him in an investigation of mountain fever in Montana. The committee was disposed to make this grant, but on investigation found that the Board of Trustees had limited the amount of individual grants to $100, and for that reason could not comply with Dr. Rickett's request, though the subject proposed was one of great interest, and his fitness for the investigation undoubted. In view of this, we would respectfully recommend that in future the committee be em-

powered to increase the amount of grants to $200 in desirable cases, the understanding being that, as a rule, the amount shall be kept at $100. A larger number of grants might easily have been made, as a number of applications were received. None of these, however, seemed to merit the favorable recommendation of the committee.

We have felt that though the entire appropriation is small, none of it should be utilized excepting in cases in which meritorious work should be encouraged. We have, therefore, felt no regret in the fact that the entire amount appropriated has not been utilized. The only difficulty experienced has been that in some few cases good work might have been aided had it been in our power to increase the grant to $200.

ALFRED STENGEL, Chairman.

The report was referred to the Board of Trustees.

Report of Reference Committee on Constitution.

AMENDMENT TO COVER SUBSCRIPTION BY MEMBERS.

Dr. Craig presented the report of the Reference Committee on Constitution and By-Laws. As a substitute for the amendment to the By-Laws to require that, of the annual dues, $4 shall be set aside for subscription to THE JOURNAL for each member, the committee recommends an addition to the By-Laws, Book 5, Chapter 15, page 29, so that this chapter shall read:

These By-Laws may be amended on a three-fourths vote of the House of Delegates: provided, that no amendments shall be acted on till the day following that on which it is introduced except that the Board of Trustees may, by unanimous vote make such changes, and such changes only, as may be required to adapt them to the rules and regulations of the United States postal authorities.

On motion of Dr. Philip Mills Jones, California, this section of the report was adopted.

The committee recommended that the House adopt a resolution to the following effect:

Resolved, That the Board of Trustees is hereby directed to set aside so much of the annual dues of each member as shall secure for the member a subscription to THE JOURNAL of the American Medical Association.

It was moved and seconded that this resolution be adopted.

After some discussion by Drs. Cantrell and Ferguson the resolution was adopted.

CHANGES IN METHOD OF ELECTION.

The committee recommends the following changes in the By-laws and advises that they be declared to become operative at the close of this annual session:

Book II—Chapter VII—Section 1, page 12—add so that the closing sentence of this section shall read: "The treasurer shall be nominated by the Board of Trustees, and the orators shall be nominated, respectively, by the Sections on Practice of Medicine, on Surgery and Anatomy and on Hygiene and Sanitary Science."

Book IV—Chapter XII—Section 3—page 25—change to read as follows: "The election of officers shall be the first order of business of the morning meeting of the third day of each annual session. To participate in the election of any section a member must have indicated on registering that he desires to affiliate with such section, and must have recorded his name and address on the section register book. The Sections on Practice of Medicine, on Surgery and Anatomy and on Hygiene and Sanitary Science shall each nominate of their section one to deliver at the ensuing annual session, respectively, the Oration on Practice of Medicine, the Oration on Surgery and the Oration on State Medicine."

On motion of Dr. W. T. Sarles, Wisconsin, this section was adopted.

TRUSTEES TO CONTROL LOCAL ARRANGEMENTS.

The following amendments to the By-Laws, introduce dat the last session by the Reference Committee on Amendments to the Constitution and By-Laws, were adopted:

Book III—Chapter X—Section 3—Strike out (a) "A Committee of Arrangements," *and re-letter the following names of standing committees.*

Book III—Chapter X—Striking out Section 4, recounting the duties of the Committee on Arrangements, add to Book III, Chapter IX: "Section 2. The Board of Trustees shall have full control of all arrangements for the annual sessions and shall provide meeting places for the Association, the House of Delegates and the various sections. It shall also have control of all exhibits. The Board of Trustees, in their discretion, may appoint a local committee of arrangements, which shall be at all times under the control of the Board of Trustees."

Chapter X—Section 7—page 29—Amend as follows: "If, after a place of session has been selected, it becomes apparent that satisfactory transportation rates can not be secured, or that the Association can not be properly entertained and cared for, the Committee on Transportation and Place of Session be and are hereby authorized to change said place of session, but said change shall not be made later than two months preceding the date fixed for the annual session."

On motion the report was adopted as a whole.

Report of Reference Committee on Business.

INSURANCE COMMITTEE APPROVED.

Dr. E. Eliot Harris, New York, presented the following report of the Reference Committee on Miscellaneous Business:

The Reference Committee on Miscellaneous Business respectfully approves the resolutions on the insurance question, asking the appointment of a special committee (page 1874).

As to the resolution offered by Dr. D. H. Work of Colorado, asking for an endorsement of the action of the several component county societies in the matter of the insurance question, the committee recommends that while it is in sympathy with the spirit of his resolution, yet in view of the fact that a committee on insurance is created by this report to deal with the subject in a broad and comprehensive way, it asks that the resolution be referred to the Committee on Insurance.

Respectfully submitted,

E. ELIOT HARRIS, Chairman.
A. D. PRICE,
W. D. HAGGARD.

On motion of Dr. J. R. Hollowbush, Illinois, the report of the committee was adopted.

Report of Reference Committee on Legislation.

ADOPTION OF LEGISLATION REPORT.

Dr. J. F. Percy read the following report of the Reference Committee on Legislation and Political Action:

We have reviewed the report of the Committee on Medical Legislation (see page 1853) and recommend its adoption. We further recommend that all questions of appropriations referred to in this report be referred to the Board of Trustees with the request that they be acted on promptly.

Respectfully submitted,

J. F. PERCY, Chairman,
WILLIAM E. ANDERSON,
J. R. KEAN.

On motion of Dr. W. T. Sarles, Wisconsin, the report was adopted.

Report of Reference Committee on Education.

COMMITTEE ON RECIPROCITY ABOLISHED.

Dr. Stuart McGuire, Virginia, chairman of the Reference Committee on Medical Education, presented the following report:

Your Reference Committee on Medical Education, to whom have been referred the reports of the Council on Medical Education (see page 1853) and of the Committee on Reciprocity (see page 1868), desires heartily to commend the work that has been done by both bodies.

The Council on Medical Education has made great progress in a most important undertaking. Much remains yet to be accomplished and the work must be continued. We understand from the chairman, Dr. Bevan, that the Council is already formulating a curriculum which, after being submitted to this body for approval, will be recommended to the various schools for adoption. In this connection we wish to recall the fact that the House of Delegates, at the Portland session, by a unanimous vote, advised the incorporation of a special course in medical economics in the curriculum of every school.

In connection with the report of the Committee on Reciprocity, we advise, with the approval of the chairman of the committee, Dr. Rodman, that the various recommendations contained in it be referred to the Council on Medical Education. Inasmuch as the work of the Council and of the committee covers the same ground, we can see no reason for the existence of both. Therefore, to simplify matters, we advise that the Committee on Reciprocity be abolished.

We think the thanks of the Association are due to Dr. Bevan, Dr. Rodman and the various members of the two committees for their faithful and effective work; also to the state boards and medical schools who have co-operated with them in their labors.

Dr. Philip Mills Jones, California, moved that the report with its recommendations be adopted. Seconded.

Dr. J. N. MacCormack, Kentucky, moved to amend that the Council on Medical Education be requested to take the matter up with the schools.

The amendment was seconded, accepted and the original motion as amended was carried.

Report of Committee on Rules.

PROPER CREDENTIALS TO BE REQUIRED.

Dr. J. Garland Sherrill, Kentucky, presented the following report of the Committee on Rules and Order:

Your Committee on Rules and Order begs to report on the Report of the Committee on Credentials (see page 1874) that Book II, Sections 1 to 4, page 9, fully covers the registration of delegates. We, therefore, recommend that the Secretary be asked to notify constituent associations that in the future these rules will be strictly enforced.

J. GARLAND SHERRILL, Chairman,
H. M. WORKMAN,
L. D. WILSON,

On motion, the report was adopted.

Ohio Resolution for Refund to State Journals.

LAID ON TABLE.

Dr. Charles L. Bonifield, Ohio, said that at a meeting of the Ohio State Medical Society, held last month at Canton, the delegates to the American Medical Association were instructed to present the following preambles and resolution:

WHEREAS, THE JOURNAL of the American Medical Association has accumulated a quarter of a million of dollars, thus proving that it does not need its entire income; and

WHEREAS, The state journals are of immeasurable value in maintaining organization; therefore, be it

Resolved, That the Secretary of the American Medical Association is hereby instructed to return to the treasurer of each state society that publishes a journal one dollar for each subscriber to THE JOURNAL of the American Medical Association from his state, and that each secretary of a county society in such a state is made an agent for receiving subscriptions for THE JOURNAL of the American Medical Association.

On motion of Dr. J. Garland Sherrill, Kentucky, these preambles and resolution were laid on the table.

Proposal to Remit Dues of California Sufferers.

APPROVED, BUT LATER RECONSIDERED (See page 1877).

Dr. J. N. MacCormack presented the following:

In view of the great financial loss experienced by the profession of San Francisco in the late earthquake and fire; be it

Resolved, That the dues of the members of this Association residing in San Francisco be remitted for the ensuing year.

It was moved that the resolution be adopted. Seconded.

The Secretary stated that there are other members of the Association who reside in small towns near San Francisco who were affected by the earthquake.

It was therefore moved as an amendment that the Secretary be instructed to investigate individual instances and that the Board of Trustees be requested to remit their dues.

The amendment was seconded and the motion as amended was carried (see page 1877).

Appropriation for Relief of California Sufferers.

VOTED AND LATER MODIFIED (see page 1877).

Dr. F. D. Gray, New Jersey, asked if any action had been taken by the House of Delegates with regard to any other form of relief for the San Francisco sufferers.

The Secretary said there had not.

After further remarks by Dr. Gray, pointing out the importance of voting a cash contribution to the sufferers, Dr. E. Eliot Harris, New York, moved that the House of Delegates appropriate $1,000 for that purpose, and that the matter be referred to the Board of Trustees. Seconded.

Dr. A. F. Jonas, Nebraska, moved to amend that the amount be made $5,000. Seconded.

The motion as amended was accepted, carried, and the matter referred to the Board of Trustees (see page 1877).

Florida Resolutions on Insurance Fees and Nostrums.

REFERRED TO COMMITTEE ON INSURANCE FOR FUTURE USE.

The Secretary read a letter from Dr. Joseph Y. Porter, Florida, presenting the following preambles and resolutions, which were endorsed by the Florida State Medical Association in annual session in Gainesville, Fla., April 19, 1906:

WHEREAS, There is a tendency on the part of old-line or legal reserve life-insurance companies to reduce the minimum fee paid for medical examination to three dollars; and

WHEREAS, It is the unanimous sentiment of the members of the Florida State Medical Association in session at Gainesville, April 19, 1906, that a minimum fee of three dollars is not a just compensation for the services rendered and responsibility assumed; therefore, be it

Resolved, By the Florida State Medical Association, that on and after July 1, 1906, no member of this Association shall make a medical examination for any insurance company, old-line, fraternal or assessment, now licensed to transact business in this state, or any insurance company which may hereafter be licensed to transact business in this state, for less than five dollars an examination, and that an additional fee of five dollars be charged where a microscopic examination is required; and be it further

Resolved, That a copy of this resolution be sent at once to the secretary of each component society for their action, and that said societies after acting on the matter shall forward at once the result of said action to the secretary of the state medical association, who in turn shall notify each secretary of the component medical societies of the final action taken.

On motion these resolutions were referred to the Committee on Insurance that is to be appointed.

Florida Resolutions on Council on Pharmacy.

ACCEPTED AND PLACED ON FILE.

The Secretary likewise read the following, which was adopted by the Florida Medical Association at its annual session, held April 19, 1906:

Resolved, That the Florida Medical Association expresses its hearty approval of the action of the American Medical Association in establishing a Council on Pharmacy and Chemistry to investigate non-official drugs and medicines.

It realizes that such an investigation is necessary to sift out the numerous and rapidly increasing number of worthless and harmful preparations that are being exploited among the physicians of this country. It has confidence in the Council and wishes to support the Trustees of the American Medical Association in carrying on the work already instituted by this body.

The Florida Medical Association also approves the action of THE JOURNAL of the American Medical Association in its campaign of educating the medical profession concerning the evils of nostrums and urges it to continue the good work.

On motion of Dr. E. Eliot Harris, New York, this communication was accepted and placed on file.

Dr. V. H. Stickney, North Dakota, presented a communication, which was referred to the Reference Committee on Miscellaneous Business.

On motion the House of Delegates adjourned to meet at 2 p. m. Thursday.

Fifth Meeting—Thursday, June 7

The House of Delegates met at 2 p. m. and was called to order by the President.

The minutes of the previous meeting were read.

Place of Session Arrangements Amended.

Dr. T. J. Happel, Tennessee, called the attention of the House of Delegates to the by-law adopted at a previous meeting, giving the Board of Trustees the power to change the place of session, and suggested that the words "three months" be changed to read "two months" (see pages 1870 and 1875).

Dr. Alexander R. Craig, Pennsylvania, moved a reconsideration of that part of the report of the Reference Committee on Constitution and By-Laws adopted at a previous meeting.

Carried.

He then moved to substitute the word "two" instead of "three," as suggested by Dr. Happel.

This motion was seconded and carried.

The minutes as amended were adopted.

The election of officers was then proceeded with.

Election of Officers.

Dr. E. Eliot Harris, New York, in nominating Dr. Bryant said:

I rise to present the name of a gentleman as a candidate for President who is the choice of the reunited medical profession of the State of New York and of its delegates sitting in this House.

I do not feel that it is necessary for me to describe his grand and noble traits of character and his high professional attainments to his friends here assembled. They are all well known to you. He needs no eulogy. I shall not ask for the time to deliver a panegyric. The encomiums which have been voiced by his many students and friends are not limited to the State of New York, but extend throughout the length and breadth of this land. They are matters of public record. I have simply the honor, as well as the privilege, to name your candidate for President of the American Medical Association—Dr. Joseph D. Bryant, of New York, or, rather, of the United States of America. [Applause.]

The nomination was seconded by the delegates from several states, after which Dr. T. J. Happel moved that the Secretary be instructed to cast the unanimous ballot of the House of Delegates for Dr. Bryant as President of the Association, which was seconded by several and unanimously carried.

The Secretary, in accordance with instructions, cast the ballot for Dr. Bryant, and he was declared duly elected.

The President appointed as tellers Drs. W. D. Haggard, Tennessee, and Edward B. Heckel, Pennsylvania.

The following officers were duly elected:

First Vice-President, Dr. Herbert L. Burrell, Boston.

Second Vice-President, Dr. Andrew C. Smith, Portland, Ore.

Third Vice-President, Dr. D. S. Fairchild, Des Moines, Iowa.

Fourth Vice-President, Dr. W. S. Foster, Pittsburg, Pa.

General Secretary, Dr. George H. Simmons, Chicago (re-elected).

Treasurer, Dr. Frank Billings, Chicago (re-elected).

Trustees: Dr. M. L. Harris, Chicago (re-elected); Dr. William H. Welch, Baltimore (re-elected); Dr. Miles F. Porter, Fort Wayne, Ind. (re-elected).

[The other members of the Board of Trustees, whose terms of office did not expire, are as follows: T. J. Happel, Chairman, Trenton, Tenn., 1907; W. W. Grant, Denver, 1907; Philip Marvel, Atlantic City, N. J., 1907; E. E. Montgomery, Vice-Chairman, Philadelphia, 1908; A. L. Wright, Carroll, Iowa, 1908; H. L. E. Johnson, Washington, D. C., 1908.]

Member of Judicial Council, Dr. D. C. Peyton, Jeffersonville, Ind. (re-elected).

[The other members of the Judicial Council are: P. Maxwell Foshay, New York, Chairman; George Ben Johnston, Richmond, Va.; W. B. Russ, San Antonio, Texas; W. S. Foster, Pittsburg, Pa.]

Chairman of the Committee on Transportation and Place of Session, John C. Munro, Boston.

[The other members of this committee, as appointed by the President, are named on page 1879.]

Atlantic City the Meeting Place, 1907.

Dr. E. Eliot Harris, New York, stated, on behalf of the Committee on Transportation and Place of Session, that the committee had carefully considered Jamestown, Asbury Park, Chicago and Atlantic City as places for the next session, and that the members of the committee voted unanimously in favor of Atlantic City.

Dr. J. Garland Sherrill, Kentucky, moved that the report be adopted. Seconded.

Time of Next Session Left to Trustees.

After considerable discussion relative to the time of meeting so as not to conflict with the meetings of state medical societies and the Congress of American Physicians and Surgeons, Dr. Frank Billings moved to amend that the Board of Trustees be requested to select a time for the session at Atlantic City either before or immediately after the Congress of American Physicians and Surgeons. Seconded.

Dr. T. J. Happel moved to amend, further, that the date of the next session be fixed not earlier than the middle of June. Seconded.

Dr. E. Eliot Harris, New York, moved as a substitute that the report be adopted and that the time of the session be left to the Board of Trustees.

The substitute was seconded, accepted and carried.

Orators Elected.

The following were elected orators:

Oration on Surgery—Dr. William H. Wathen, Louisville, Ky.

Oration on Medicine—Dr. James B. Herrick, Chicago.

Oration on State Medicine—Dr. Samuel G. Dixon, Philadelphia.

COMMITTEE ON INSURANCE.

John H. Musser, Pennsylvania, Chairman.

William H. Mayo, Minnesota. Joseph D. Bryant, New York.
Jos. N. MacCormack, Kentucky. Frank Billings, Illinois.

Relief for California Sufferers.

METHODS OF RELIEF MODIFIED.

Dr. J. N. MacCormack moved to reconsider the action taken by the House at a previous meeting (see page 1876) with reference to the donation to the sufferers in San Francisco, because, he said, a much more substantial method of relief had been suggested by Dr. Charles A. L. Reed, which met with the concurrence of the Board of Trustees and the delegates from California. Seconded and carried.

Dr. MacCormack then presented the following preambles and resolution, and moved that they be referred to the Board of Trustees:

WHEREAS, The medical profession of San Francisco have suffered irreparable loss, both in property and clientele; and

WHEREAS, It would conflict with the postal laws to remit the dues or subscriptions to THE JOURNAL of the members of this Association in California: therefore, be it

Resolved, That the American Medical Association extends its sympathies to our medical brethren in California and to their families, and pledges them the support of the profession of America in re-establishing themselves on a substantial basis for future usefulness; and, further, in order to give practical and substantial aid, that the Committee on Legislation, through the agencies already established by it, be and is hereby requested to undertake the creation of a fund, which, together with that already contributed through THE JOURNAL, shall amount to $50,000, which shall be used for the benefit of the reputable physicians of California by the committees of the California State Association and of the San Francisco County Medical Association established for that purpose.

After discussion it was moved to amend that the $5,000 appropriated yesterday stand, that the resolution as amended be adopted and that the members of the Committee on Medical Legislation raise as much money as they can. Seconded.

Dr. MacCormack accepted the amendment, and the resolution as amended was adopted.

Resolutions on Behalf of Contract Army Surgeons.

REFERRED TO COMMITTEE ON MISCELLANEOUS BUSINESS.

Dr. J. F. Percy, Illinois, presented the following preambles and resolutions, which were submitted by Dr. John P. Nagle, New York.

WHEREAS, The War Department has employed and now employs physicians by contract to perform the duties of medical officers, and these physicians are required to share the same risks and responsibilities as the commissioned medical officers, but are deprived of any rank while so employed; and

WHEREAS, General Orders of the War Department, Adjutant-General's Office, dated Feb. 13, 1900, gave a list of surgeons who served in the Spanish-American War who especially distinguished themselves by meritorious acts or conduct in service, and of this number two were acting assistant surgeons of the Army, two were commissioned medical officers and one was a civilian volunteer medical aid; and

WHEREAS, Dr. E. K. Johnston, an acting assistant surgeon of the Army, was commended by Major-General W. H. Lawton, commanding the First Division, U. S. Volunteers, at Manila, P. I., on Dec. 18, 1899, for exceptional daring during the battle of Zapote River, and was recommended for promotion as major or brigade surgeon; and

WHEREAS, Five thousand five hundred and thirty-two of the 12,000 members of the medical staff of the Army who served in the Civil War were acting assistant surgeons of the Army, many of whom distinguished themselves as physicians and surgeons and performed gallant and meritorious services, but are refused recognition for the services they have performed and are discriminated against by the War Department for no other reason than that they are or were acting assistant surgeons of the Army and, consequently, had and have no rank of office, although they were always under military orders, Army regulations and the articles of war: therefore, be it

Resolved, That this American Medical Association protests against the employment of physicians and surgeons in the Army by contract, without rank, to perform the duties of medical officers, and requests the President of the United States, who is commander-in-chief of the Army, and the Secretary of War to prevent such employment.

Resolved, That it is the sense of this Association that all physicians and surgeons who are and who have been employed by contract with the Army, and who have performed and are now performing the duties of medical officers, should be commissioned as acting assistant surgeons of the United States Army, with rank similar to the acting assistant surgeons of the United States Army.

On motion of Dr. W. D. Haggard, Tennessee, the resolutions were referred to the Reference Committee on Miscellaneous Business.

Resolutions on Ophthalmia Neonatorum Adopted.

Dr. H. V. Würdemann, Wisconsin, presented the following preambles and resolutions, which were unanimously passed by the Section on Ophthalmology and referred to the House of Delegates for action:

WHEREAS, Notwithstanding the long-continued efforts of the medical profession to make known generally the infectious character of ophthalmia neonatorum and its danger to sight, the ranks of the blind are still largely increased annually by those who have unnecessarily lost their vision as a result of this disease; and

WHEREAS, We possess in the silver salts an almost absolute specific for its prevention and treatment: therefore, be it

Resolved, That this Section recommends that a committee consisting of at least one ophthalmologist, one obstetrician and one sanitarian, with the invited co-operation of a subcommittee, consisting of the president and secretary of each state society, be appointed by the President of the Association to formulate and make effective the details of a plan that may give uniform legislation and definite instruction to the profession and laity concerning the prevention and treatment of this disease.

Resolved, That this Section recommends an ophthalmologist for such committee, to be appointed by the incoming chairman and the executive committee.

On motion the resolutions were adopted.

Wish The Journal Free to Medical Libraries.

REFERRED TO TRUSTEES.

Dr. A. Jacobi, New York, said he was delegated to present the following report:

The following preambles and resolutions were passed at the ninth annual meeting of the Association of Medical Librarians, held June 4, 1906, at The Fenway, Boston:

WHEREAS, The American Medical Association, in convention assembled at Denver, in 1898, passed a unanimous resolution placing the names of the medical libraries which are members of the Association of Medical Librarians on the free mailing list of THE JOURNAL of the American Medical Association; and

WHEREAS, The removal of these names from the free mailing list of THE JOURNAL at the end of the year 1903 has been a severe loss, especially to many of the smaller libraries; be it

Resolved, That the governing body of the American Medical Association be petitioned to restore to the free mailing list of THE JOURNAL of the American Medical Association the names of the libraries which are members of the Association of Medical Librarians; and be it further

Resolved, That Dr. A. Jacobi be a committee of one to present this matter before the governing body of the American Medical Association.

On motion of Dr. Alexander R. Craig, Pennsylvania, these resolutions were referred to the Board of Trustees with instructions that the request be granted.

Report of Davis Memorial Committee.

ACCEPTED AND COMMITTEE CONTINUED.

Dr. Henry O. Marcy, Boston, reported progress as chairman of the Nathan Smith Davis Memorial Committee.

Dr. T. J. Happel moved that the report be accepted, that Dr. Marcy be continued as chairman of the committee and that Dr. William E. Quine, Chicago, be made vice-chairman and requested to assist actively in this work. Seconded and carried.

Dr. E. D. Ferguson, New York, moved that the chairman of the committee, Dr. Marcy, and his coadjutors in the city of Chicago be authorized to appoint a secretary and treasurer of the committee and that Dr. Frank Billings be made treasurer.

This motion was seconded and carried.

Report of Committee on Cancer of the Uterus.

APPROVED AND FURTHER WORK AUTHORIZED.

Dr. F. F. Simpson, Pittsburg, presented the report of the Committee on Cancer of the Uterus:

In the consideration of cancer of the uterus your committee has been impressed by the urgent need of a general plan of public education on many medical subjects. While the Section of Obstetrics is naturally interested in promoting some effective means of reducing the frightful mortality in cancer of the uterus, each section of the American Medical Association is quite as intensely interested in similar work pertaining to matters of public health falling within its province. The needs of the hour seem to demand some ethical way of instructing the people in general regarding these several subjects. It is apparent that to be effective such instruction must be authoritative, systematic, painstaking, persistent, free from technical terms, free from suspicion of personal advancement, and it must reach the people through popular channels. For these reasons your committee has felt the necessity of widening the scope of its duties and herewith respectfully submits to the House of Delegates a plan for the organization of a General Board of Public Instruction:

SYNOPSIS OF A PLAN FOR THE ORGANIZATION OF A DEPARTMENT OF PUBLIC INSTRUCTION BY THE ASSOCIATION.

Objects.—To supply the community at large with established facts regarding matters of general moment and public health. To supply these facts ethically, in good taste and without the element of individual advancement. To harmonize and give the added value of combined effort to the several interests which are now working independently for the common good along medical lines. To direct this work under the auspices of the American Medical Association, thus giving unity of purpose among the workers and public expression to the aim and aspirations of the medical profession of America.

Organizations.—To further these aims a General Board of Instruction shall be composed of five representatives each from the Sections on Practice of Medicine, on Surgery and Anatomy and on Hygiene and Sanitary Science, and three representatives from each of the other sections of the American Medical Association. The members of the General Board of Instruction from each special section shall constitute the special board of instruction for the sections they represent.

Manner of Selection and Duration of Office.—The members of this board shall be appointed by the chairman of each section, the term of office being five years for the members of the Sections on Practice of Medicine, on Surgery and Anatomy and on Hygiene and Sanitary Science, and three years for each of the other sections of the American Medical Association. The tenure of office shall be so arranged that one new member shall be appointed annually from each section, thus preserving the individuality of the general constitution of the board and insuring a uniform continuity of purpose.

Selection of Subjects.—The discussion of many subjects should, of course, be restricted to the medical profession, but in order to direct uniform attention to them the board of instruction may consider that they merit special articles or circular letters, under separate cover, to the entire medical profession. Other subjects of value to the general public should be given publicity through the lay press or other popular channels of education. The section of the Board of Public Instruction, under whose jurisdiction the subject properly belongs, presents the subject to the general board, which shall finally decide on the propriety of its publication.

The Number of Articles to Appear.—This is to be determined by the appropriate special board. On consideration by the general board, however, the number may be curtailed, or their publication may be stopped at any time if it deem it wise.

Character of Articles.—This is to be determined by the special board having jurisdiction, but the final decision as to their publication or the channel through which they shall appear may be subject to the suggestion of and controlled by the general board. One essential feature of these articles is that there shall be the least possible reference, direct or implied, to any person or institution, in order that there may be no imputation, either direct or indirect, that the function of the board is employed for the promotion of individual advancement. Each article must be actually read by at least two-thirds of the appropriate special board and by three members of the general board. Each article shall receive the unanimous sanction of the special board and a majority of the general board before it may appear in public print.

Source of Articles.—So far as the public is concerned, each article shall be "approved by the American Medical Association," but shall not bear the name of the individual writer. The actual writers of the several articles must be selected carefully by the appropriate special boards, in order that the most authoritative information may be given to the public.

The avenues of distribution are to be determined by the General Board of Public Instruction. Articles for the general instruction of the public shall be published in conservative periodicals or magazines devoid of sensational basis, and which will honorably conform to the requirements of medical ethics. Another effective method of instruction shall be by lectures in public and private schools, in colleges and other institutions of learning. Public lectures on certain topics may well be conducted under the auspices of local county medical societies, before literary clubs, college settlements, etc.

If a plan of this general nature is inaugurated, your committee believes that the logical evolution may be a department of public instruction, which ultimately would have a very powerful function in the collection and dissemination of scientific, sociologic and statistical facts for the use of the medical profession and the instruction of the general public, thus rendering inestimable benefit to mankind. If the value of this work were established, as we believe is possible, it might logically lead to the establishment by our national government of an executive department encompassing all of these aims. Before our government can be induced to assume this responsibility it must be convinced of its need by actual demonstration. We believe such a scheme as this, if put into action, may bring about this much desired end.

In the absence of specific authority to act, your committee has refrained from the investigation of several facts. Among them may be mentioned the attitude of publishers to the ethical side of our problem; the cost of maintenance of a department; the manner of raising funds; the establishment of an endowment fund, etc.

We would, therefore, respectfully suggest that a committee be appointed to investigate these and other germane problems and that it make a definite report for adoption at the next session of this Association.

JOHN G. CLARK, Chairman.
THOMAS S. CULLEN. J. CLARENCE WEBSTER.
JOHN A. SAMPSON. F. F. SIMPSON.

Dr. Daniel H. Craig, Boston, moved that the report of the committee be adopted and that the President appoint at his con-

venience a committee of seven to investigate the matters suggested and to report for definite action at the next annual session. Carried.

Supplemental Report of the Board of Trustees.

Dr. T. J. Happel, chairman, presented the following supplemental report of the Board of Trustees:

To the House of Delegates of the American Medical Association:

Your Board of Trustees would submit the following supplemental report:

We have appropriated as follows:

ASSOCIATION EXPENSES.

Committee on Education, not to exceed	$ 4,000.00
Council on Pharmacy and Chemistry, not to exceed	3,500.00
Committee on Medical Legislation, not to exceed	1,000.00
Committee on Scientific Research	800.00
Secretaries of Sections	600.00
Scientific Exhibit	500.00
National Organizer's salary	5,000.00
Secretary Board of Trustees	100.00
Treasurer of the American Medical Association	200.00
Total Association expense account, not including traveling expenses of the organizer	$15,700.00

JOURNAL ACCOUNT.

New printing press	$20.000.00

SPECIAL APPROPRIATIONS.

San Francisco sufferers	$ 5,000.00
Total	$40,700.00

Taking the profits of last year in THE JOURNAL office as a basis of estimate, the House of Delegates will readily see that our reserve fund will be encroached on.

This appropriation of $5,000 to the San Francisco physicians is payable to the order of the Physicians' Relief Committee of that city, to be distributed by them. We would add that while this item will afford but a little help to each physician, still it must not be forgotten that there has been sent out through THE JOURNAL office already more than $10,000 on the collection which was authorized by your Board of Trustees.

In regard to the amount granted to the Committee on Medical Legislation, we desire to explain as follows: As suggested at Portland and ordered at this session, the business of this committee will be carried on in THE JOURNAL office under proper managerial administration, and in this way we hope to lessen the expenses of the same. T. J. HAPPEL, Chairman.
M. L. HARRIS, Secretary.

On motion of Dr. John B. Roberts the report was adopted.

Reports, Resolutions, Etc., to Be in Duplicate.

TYPEWRITIST FOR COMMITTEEMEN.

Dr. Happel presented the following preamble and resolution:

WHEREAS, Reports and resolutions presented to this body are referred to reference committees, to the Board of Trustees, etc.: therefore, be it

Resolved, That in future all reports, resolutions, amendments to the Constitution and By-Laws, etc., be furnished in duplicate, one copy to be furnished the Secretary for the official minutes and the other to committeemen; and that the Secretary be instructed to engage a typewritist for the use of committeemen in making their reports.

On motion the resolution was adopted.

Announcement of Committees.

The President announced the appointment of the following committees:

COMMITTEE ON SCIENTIFIC EXHIBIT.

F. B. Wynn, Indianapolis, Director.

COMMITTEE ON SCIENTIFIC RESEARCH.

Alfred Stengel, Philadelphia, Chairman.
L. F. Barker, Baltimore. L. Hektoen, Chicago.

COMMITTEE ON ORGANIZATION.

J. N. MacCormack, Bowling Green, Ky., Chairman.
Duncan Eve, Nashville. George H. Simmons, Chicago.

COMMITTEE ON MEDICAL LEGISLATION.

Charles A. L. Reed, Cincinnati, Ohio, Chairman (three years).
W. L. Rodman, Philadelphia. William H. Welch, Baltimore.
(One year.) (Two years.)

VOTE OF THANKS TO DR. REED.

Dr. MacCormack moved that the House of Delegates tender to Dr. Reed its thanks for the efficient manner in which he has conducted this work, and that the nomination of Dr. Reed for three years as chairman of the Committee on Medical Legislation be confirmed by a rising vote as an appreciation of his invaluable work. Carried unanimously.

COMMITTEE ON TRANSPORTATION AND PLACE OF SESSION.

John C. Munro, Boston, Chairman.
E. Eliot Harris, New York. W. A. Jayne, Denver.
Philip Mills Jones, San Francisco. Wm. H. Wathen, Louisville, Ky.

JUDICIAL COUNCIL.

P. Maxwell Foshay, Chicago, Chairman.
W. S. Foster, Pittsburg, Pa. D. C. Peyton, Jeffersonville, Ind.
Geo. Ben Johnson, Richmond, Va. W. B. Russ, San Antonio, Texas.

COUNCIL ON MEDICAL EDUCATION.

Arthur D. Bevan, Chicago, Chairman.
W. T. Councilman, Boston. J. A. Witherspoon, Nashville, Tenn.
Charles A. Frazier, Philadelphia. V. C. Vaughan, Ann Arbor Mich.

COMMITTEE ON AWARD OF SENN MEDAL.

A. F. Jonas, Omaha, Chairman.
Harry M. Sherman, San Francisco. J. F. Binnie, Kansas City, Mo.

COMMITTEE ON IMPROVEMENT OF THE TREATMENT OF UTERINE CANCER.

John G. Clark, Philadelphia, Chairman.
F. F. Simpson, Pittsburg. W. D. Haggard, Nashville, Tenn.
J. W. Bell, Minneapolis. Willard Bartlett, St. Louis.
Stuart McGuire, Richmond, Va. Henry Sewall, Denver.

COMMITTEE ON DAVIS MEMORIAL.

Henry O. Marcy, Boston, Chairman.
Wm. E. Quine, Chicago, Vice-Chairman.

Alabama, Eugene D. Bondurant, Mobile; Arkansas, C. C. Stephenson, Little Rock; Arizona, John W. Foss, Phoenix; California, R. F. Rooney, Auburn; Colorado, J. M. Blaine, Denver; Connecticut, N. E. Wordin, Bridgeport; Delaware, Alexander Lowber, Wilmington; District of Columbia, Joseph T. Johnston, Washington; Florida, J. D. Fernandez, Jacksonville; Georgia, Lewis H. Jones, Atlanta; Idaho, G. M. Waterhouse, Weiser; Illinois, E. C. Dudley, Chicago; Indiana, D. C. Peyton, Jeffersonville; Indian Territory, V. Berry, Wetumka; Iowa, William Jepson, Sioux City; Kansas, Charles E. Bowers, Wichita; Kentucky, John G. Cecil, Louisville; Louisiana, Charles Chassaignac, New Orleans; Maine, R. D. Bibber, Bath; Maryland, John Ruhrah, Baltimore; Massachusetts, Henry O. Marcy, Boston; Michigan, H. O Walker, Detroit; Minnesota, Alexander J. Stone, St. Paul; Missouri, N. B. Carson, St. Louis; Mississippi, E. H. Martin, Clarksdale; Montana, Donald Campbell, Butte; Nebraska, A. F. Jonas, Omaha; New Hampshire, Granville P. Conn, Concord; Nevada, J. E. Pickard, Virginia City; New Jersey, Edward J. Ill, Newark; New York, C. G. Stockton, Buffalo; North Carolina, E. G. Register, Charlotte; North Dakota, Paul Sorkness, Fargo; New Mexico P. G. Cornish, Albuquerque; Ohio, Frank Winders, Columbus; Oklahoma, J. A. Hatchett, El Reno; Oregon, H. W. Coe, Portland; Pennsylvania, James M. Anders, Philadelphia; Rhode Island, Stephen A. Welch, Providence; South Carolina, T. P. Whaley, Charleston; South Dakota, A. H. Bowman, Deadwood; Tennessee, Duncan Eve, Nashville; Texas, J. T. Wilson, Sherman; Utah, Union Worthington, Salt Lake City; Vermont, M. L. Chandler, Barre; Virginia, W. E. Anderson, Farmville; Washington, George W. Libby, Spokane; West Virginia, W. W. Golden, Elkins; Wisconsin, Arthur J. Burgess, Milwaukee; Wyoming, G. L. Strader, Cheyenne.

Foreign Visitors Honored.

The Section on Obstetrics and Diseases of Women submitted the nomination of Prof. A. von Rosthorn, of Heidelberg, for honorary membership, and on motion the nomination was confirmed.

On motion of Dr. Chassaignac, New Orleans, Professor Trendelenburg, Leipsic, Germany, was elected to honorary membership.

Message to Senator Hepburn.

Dr. Frank Billings called attention to the illness of Senator Hepburn, who drafted and introduced the pure-food bill, and moved that the President and Secretary be instructed to send a telegram expressing respect for him and extending the sympathy of the Association to him in his illness, with hopes for a speedy recovery. Carried.

Resolutions from Section on Hygiene.

A DEPARTMENT OF PUBLIC HEALTH DESIRED.

Dr. J. Walter Suiter, New York, presented the following preambles and resolutions which were unanimously adopted by the Section on Hygiene and Sanitary Science and referred to the House of Delegates:

WHEREAS, The rapidly increasing number and the scope of the sanitary problems constantly arising are of great importance to the growth and development of this country as well as its outlying dependencies; and

WHEREAS, Such problems require for their solution the most experienced and best trained sanitary talent, it follows that it is especially desirable that our Chief Executive have in his immediate presence a medical adviser, eminent and experienced in sanitary science, to counsel him at all times and thus lighten his responsibility in deciding on matters of far-reaching importance which so profoundly affect the lives and health of many millions of people for either good or ill: therefore, be it

Resolved, By the Section on Hygiene and Sanitary Science of the American Medical Association, that we ask the House of Delegates to take immediate and appropriate action which may bring before the Congress of the United States, as a means of materially advancing the prosperity and well-being of this nation, the impor-

tance and necessity of creating a Department of Public Health, with a regularly educated physician as secretary in the Cabinet of the President.

Resolved, further, That the secretary of this Section be authorized and directed to call the attention of all state boards and health commissioners of the larger American cities to the purport of these resolutions and to solicit their active co-operation to the end that suitable legislation may result in the furtherance of the object of the resolution.

On motion of Dr. Charles L. Bonifield, Ohio, the resolutions were referred to the Committee on Medical Legislation.

RESOLUTION ON THE HEALTHFULNESS OF CONTINENCE.

WHEREAS, There exists among the laity a general impression that sexual intercourse is necessary to the health of men; and

WHEREAS, It is claimed that this impression rests on the authority of the medical profession: now, therefore, be it

Resolved, That in the opinion of the Section on Hygiene and Sanitary Science of the American Medical Association, continence is not injurious to health, and that this Section reprobates the contrary doctrine as a menace to the physical and moral welfare of the individual and society.

PRINCE A. MORROW.

On motion this resolution was referred to the Committee on Improvement of the Treatment of Uterine Cancer.

RESOLUTION ON EDUCATION CONCERNING VENEREAL DISEASE.

Resolved, That it is the opinion of the Section on Hygiene and Sanitary Science of the American Medical Association that it should be the duty of state boards of health to disseminate literature to educate the people on the subject of the great black plague (venereal disease) as they do regarding tuberculosis and other infectious diseases.

LISTON H. MONTGOMERY.

On motion this resolution was referred to the same committee.

RESOLUTION ON MAKING VENEREAL DISEASE REPORTABLE.

Resolved, That in the opinion of the Section on Hygiene and Sanitary Science of the American Medical Association, gonorrhea, chancroid and syphilis should be included among diseases to be under the control of boards of health of the different states.

L. DUNCAN BULKLEY.

Referred to the same committee.

Dr. J. C. Hall, Mississippi, presented the following resolution, which was referred to the same committee as the previous resolutions:

Resolved, That the Mississippi State Medical Association believes that continence is compatible with health, and reprobates the contrary doctrine as a menace to the physical and moral welfare of the individual and of society.

Annual Meetings of State Societies.

Dr. Frank Billings said that at a former session of the House of Delegates the Committee on Organization presented a resolution, which was adopted, recommending that the constituent state medical societies hold their annual meetings, as near as possible, in the fall instead of in the spring. He reiterated that resolution and moved that the constituent societies be requested to hold their annual meetings in the fall. Carried.

Trustee May Not Be State Delegate.

AMENDMENT TO LIE OVER ONE YEAR.

Dr. Alexander R. Craig, Pennsylvania, offered, on behalf of the Reference Committee on Constitution and By-Laws, the following amendment:

Constitution—Article V—Section 1 (page 2, line 4 of the section) –after the words "constituent associations" insert "provided, however, that no constituent association may be represented in the House of Delegates by a member of the Board of Trustees of the American Medical Association." (To lie over until next year.)

Medical Journals and Nostrum Advertisements.

Dr. E. Eliot Harris, New York, offered the following resolution:

Resolved, That the committees on publication of the journals of medicine published by the state medical associations affiliated with this body be asked to assist the Board of Trustees in their effort to suppress the advertisement of medical nostrums and to co-operate in the work of securing pure-food and pure-drug laws in the United States.

On motion of Dr. C. E. Cantrell, Texas, the resolution was adopted.

Report of Committee on Reapportionment.

Dr. George W. Guthrie, Pennsylvania, presented the following report of the Committee on Reapportionment:

The Committee on Reapportionment begs leave to report that it has examined the certificates of membership of the constituent state associations and finds that a reapportionment of delegates on a basis of one delegate to every 500 members would constitute a House of Delegates of 147 members. Inasmuch as Section 3, Chapter 4, Book 2, of the By-Laws places a limit of 135 members to this House, we therefore recommend that the reapportionment for the years 1907, 1908 and 1909 be on the basis of one delegate to every 600 members, giving a membership from constituent state associations of 127, distributed as follows:

MEMBERSHIP FROM CONSTITUENT ASSOCIATIONS.

	No. Delegates 1903-06.	Cert. Memb. 1906.	No. Delegates on 500 basis.	No. Delegates on 600 basis.	Change.
Alabama	3	1,370	3	3	..
Arizona	1	104	1	1	..
Arkansas	2	766	2	2	..
California	4	1,783	4	3	—1
Colorado	2	716	2	2	..
Connecticut	2	780	2	2	..
Delaware	1	104	1	1	..
District of Columbia	1	484	1	1	..
Florida	1	281	1	1	..
Georgia	2	1,020	3	2	..
Hawaii	1	63	1	1	..
Idaho	1	75	1	1	..
Illinois	8	4,087	9	7	—1
Indian Ter.	1	....	..	..	1
Indiana	4	2,109	5	4	..
Iowa	4	1,719	4	3	—1
Kansas	2	1,202	3	3	+1
Kentucky	3	1,620	4	3	..
Louisiana	2	746	2	2	..
Maine	1	486	1	1	..
Maryland	2	929	2	2	..
Massachusetts	6	3,044	7	6	..
Michigan	4	1,966	4	4	..
Minnesota	2	1,105	3	2	..
Mississippi	2	930	2	2	..
Missouri	3	2,235	5	4	+1
Montana	1	175	1	1	..
Nebraska	2	714	2	2	..
New Hampshire	1	403	1	1	..
New Jersey	3	1,228	3	3	..
New Mexico	1	123	1	1	..
New York	10	6,578	13	11	+1
Nevada	1	53	1	1	..
North Carolina	2	1,242	3	3	+1
North Dakota	1	207	1	1	..
Ohio	5	3,482	7	6	+1
Oklahoma	1	676	2	2	+1
Oregon	1	332	1	1	..
Pennsylvania	8	4,574	10	8	..
Rhode Island	1	322	1	1	..
South Carolina	1	659	2	2	+1
South Dakota	1	245	1	1	..
Tennessee	3	1,055	3	2	1
Texas	5	2,650	6	5	..
Utah	1	130	1	1	..
Vermont	1	416	1	1	..
Virginia	3	1,413	3	3	..
Washington	1	507	2	1	..
West Virginia	2	597	2	1	1
Wisconsin	3	1,395	3	3	..
Wyoming	1	62	1	1	..
Philippine Islands	1	57	1	1	..
	126	58,859	147	127	Net gain 1.

This provides for the same representation as at present for 40 out of 52 state associations. In 6 cases the representation is diminished by one delegate, as follows: California, Tennessee, Illinois, Indian Territory, West Virginia, Iowa. In 7 states the representation is increased by one delegate each, as follows: Kansas, North Carolina, Missouri, Ohio, Oklahoma, New York, South Carolina.

This makes the membership of the House from state associations for the years of 1907, 1908 and 1909, 128. To this must be added the fifteen members from sections and army services, making a total membership of 142.

Respectfully submitted.

W. J. MAYO, GEORGE A. GUTHRIE.
G. H. SIMMONS, FRANK D. BAIN.
N. J. MILLER.

Dr. Alexander R. Craig moved the adoption of the report. Seconded.

Dr. Frank Billings moved to amend that the thanks of the House of Delegates be extended to the committee for its efficient work.

The amendment was seconded, accepted, and the original motion as amended was carried.

Oregon and Insurance Examination Fees.

Dr. Henry Waldo Coe, Portland, Ore., reported in relation to the insurance examination fee matter that the Oregon State Medical Society has recently passed a resolution directing its members not to accept the reduced fees for insurance examinations under penalty of expulsion from the society.

He said that this resolution was passed unanimously and with much enthusiasm.

On motion the resolution was referred to the Insurance Committee.

Extermination of Mosquitoes.

The Secretary read a telegram from the American Mosquito Extermination Society with reference to methods of destruction of mosquitoes, and on motion the communication was referred to the Reference Committee on Hygiene and Public Health.

Tropical Medicine Section Asked.

Dr. M. Herzog, Philippine Islands, moved that the President appoint a committee to consider the advisability of creating a section on tropical medicine and to report on it at the next annual session of the Association. Seconded and carried.

Vote of Thanks to Boston.

Dr. E. D. Martin, Louisiana, offered the following preambles and resolution:

WHEREAS, This is the largest session ever held in the history of the American Medical Association; and

WHEREAS, The profession of the city of Boston and its citizens have not only been untiring in their efforts, but have shown their ability to handle its membership and visitors in such a manner as to have given the most general satisfaction; and

WHEREAS, The entertainments have been so continuous and so grand as to excel all heretofore given; be it

Resolved, That the members of the Association and their guests desire hereby to express their thanks to the physicians of Boston, the governor, mayor, citizens, and especially to the ladies, for their untiring efforts in doing all that was possible to make our visit to this grand old city one never to be forgotten. We wish to include further in this resolution all institutions which have so kindly opened their doors to us and thereby added so much to our visit.

On motion of Dr. Billings the resolution was adopted unanimously.

The President called for the report of the Judicial Council, but as none of the members was present the report was passed.

Amendment to By-Laws.

Dr. J. N. MacCormack presented the following amendment:

Amend Section 5—Chapter X—Book III of the By-Laws, page 18, by striking out all of the first sentence after the words "five members" and inserting in lieu thereof the words "to be appointed by the President on the first day of each annual session from the delegates present, and to continue in office until their successors are appointed." (To lie over until next year.)

Dr. Frank Billings moved that the thanks of the House of Delegates be extended to the ex-President and to the present officers for the efficient way in which they have presided over the meetings. Seconded.

Dr. Billings put the motion and it was carried unanimously.

There being no further business to come before the House, on motion of Dr. E. Eliot Harris the House of Delegates then adjourned without date.

Members of House of Delegates in Attendance

ALABAMA.

Wm. H. Sanders, Montgomery.
J. D. S. Davis, Birmingham.
I. L. Watkins, Montgomery.

ARIZONA.

Clarence E. Yount, Prescott.

ARKANSAS.

E. K. Williams, Arkadelphia.
H. H. Canfield, Siloam Springs.

CALIFORNIA.

Philip Mills Jones, San Francisco.
H. Bert Ellis, Los Angeles.
G. F. Reinhardt, Berkeley

COLORADO.

D. Hubert Work, Pueblo.
P. F. Gildea, Colorado Springs.

CONNECTICUT.

George R. Shephard, Hartford.

DELAWARE.

Frank Belville, Delaware City.

DISTRICT OF COLUMBIA.

George N. Acker, Washington.

FLORIDA.

J. Y. Porter, Key West.

GEORGIA.

H. F. Harris, Atlanta.
T. P. Waring, Savannah.

ILLINOIS.

George W. Webster, Chicago.
O. B. Will, Peoria.
Charles L. Mix, Chicago.
D. G. Smith, Elizabeth.
Frank Billings, Chicago.
J. R. Hollowbush, Rock Island.
J. F. Percy, Galesburg.
L. C. Taylor, Springfield.

INDIANA.

William M. Wishard, Indianapolis.
Charles H. Emery, Bedford.
John B. Berteling, South Bend.
A. M. Hayden, Evansville.

INDIAN TERRITORY.

Fred S. Clinton, Tulsa.

IOWA.

W. L. Bierring, Iowa City.
E. E. Dorr, Des Moines.
William Jepson, Sioux City.

KANSAS.

W. T. McKay, Arkansas City.

KENTUCKY.

J. Garland Sherrill, Louisville.
J. N. MacCormack, Bowling Green.
A. D. Price, Harrodsburg.

LOUISIANA.

Charles Chassaignac, New Orleans.
E. D. Newell, St. Joseph.

MAINE.

Edwin M. Fuller, Bath.

MARYLAND.

Randolph Winslow, Baltimore.
S. B. Earle, Baltimore.

MASSACHUSETTS.

G. W. Gay, Boston.
Walter P. Bowers, Clinton.
Frank G. Wheatley, N. Abington.
Charles H. Williams, Boston.
Reginald H. Fitz, Boston.
John L. Hildreth, Cambridge.

MICHIGAN.

Leartus Connor, Detroit.
H. O. Walker, Detroit.
V. C. Vaughan, Ann Arbor.

MINNESOTA.

T. McDavitt, St. Paul.
H. M. Workman, Tracy.

MISSISSIPPI.

John Darrington, Yazoo.
J. C. Hall, Anguilla.

MISSOURI.

J. N. Jackson, Kansas City.
W. B. Dorsett, St. Louis.
O. B. Campbell, St. Joseph.

MONTANA.

Donald Campbell, Butte.

NEBRASKA.

R. C. Moore, Omaha.
I. N. Pickett, Odell.

NEW HAMPSHIRE.

John M. Gile, Hanover.

NEW JERSEY.

L. M. Halsey, Williamstown.
Charles J. Kipp, Newark.
Frank D. Gray, Jersey City.

NEW MEXICO.

B. D. Black, Las Vegas.

NEW YORK.

Everard D. Ferguson, Troy.
Joseph W. Grosvenor, Buffalo.
E. Eliot Harris, New York.
Abraham Jacobi, New York.
W. R. Townsend, New York.
Floyd M. Crandall, New York.
Henry L. Eisner, Syracuse.
Roswell Park, Buffalo.
Hamilton D. Wey, Elmira.
Albert Vander Veer, Albany.
A. T. Bristow, Brooklyn.
W. S. Ely, Rochester.

NORTH CAROLINA.

W. J. Lumsden, Elizabeth City.

NORTH DAKOTA.

V. H. Stickney, Dickinson.

OHIO.

A. B. Walker, Canton.
J. S. Beck, Dayton.
J. A. Kimmell, Findlay.
Frank D. Bain, Kenton.
C. L. Bonifield, Cincinnati.

OKLAHOMA.

J. A. Hatchett, El Reno.

OREGON

H. W. Coe, Portland.

PENNSYLVANIA.

Alexander R. Craig, Columbia.
George W. Guthrie, Wilkesbarre.
Edward B. Heckel, Pittsburg.
Fremont W. Frankhauser, Reading.
John B. Roberts, Philadelphia.
W. L. Rodman, Philadelphia.
J. B. Donaldson, Canonsburg.

PHILIPPINE ISLANDS.

M. Herzog.

RHODE ISLAND.

John Champlin, Westerly.

SOUTH CAROLINA.

J. H. Hamilton, Union.

SOUTH DAKOTA.

Rodell C. Warne, Mitchell.

TENNESSEE.

T. J. Happel, Trenton.
W. J. Miller, Johnson City.
W. D. Haggard, Nashville.

TEXAS.

C. E. Cantrell, Greenville.
Frank Paschal, San Antonio.
E. H. Carey, Dallas.
T. F. Kittrell, Texarkana.
C. H. Harris, Fort Worth.

UTAH.

F. W. Taylor, Provo.

VERMONT.

M. K. Crain, Rutland.

VIRGINIA.

J. A. Gale, Roanoke.
William E. Anderson, Farmville.
Stuart McGuire, Richmond.

WASHINGTON.

James R. Yokum, Tacoma.

WEST VIRGINIA.

L. D. Wilson, Wheeling.

WISCONSIN.

W. T. Sarles, Sparta.
L. F. Bennett, Beloit.
B. M. Caples, Waukesha.

PATHOLOGY AND PHYSIOLOGY.

Joseph McFarland, Philadelphia.

OBSTETRICS AND DISEASES OF WOMEN.

Daniel H. Craig, Boston.

HYGIENE AND SANITARY SCIENCE.

H. W. Dewey, Tacoma, Washington.

PHARMACOLOGY AND THERAPEUTICS.

Heinrich Stern, New York.

OPHTHALMOLOGY.

H. V. Würdemann, Milwaukee.

SURGERY AND ANATOMY.

A. F. Jonas, Omaha.

NERVOUS AND MENTAL DISEASES.

J. H. McBride, Pasadena, Cal.

DISEASES OF CHILDREN.

C. F. Wabrer, Fort Madison, Ia.

U. S. ARMY.

J. R. Kean.

U. S. NAVY.

Phillips A. Lovering, Washington, D. C.

U. S. P. H. and M. H. SERVICE.

R. M. Woodward, Boston.

OFFICIAL MINUTES—GENERAL MEETINGS

First General Meeting— Tuesday, June 5

The meeting was called to order by the President, Dr. Lewis S. McMurtry of Louisville, Kentucky, at 10:30 a. m., in Mechanics' Hall.

Approximately six thousand people—physicians, their wives, daughters and guests—attended the meeting. Pink and white bunting formed a sky of color overhead, and American flags draped the platform.

Just before 11:30 the officers of the Association, members of the Local Committee on Arrangements, etc., marched into the hall and up the central aisle to the platform. Two policemen preceded the procession to clear the way, followed by a band. Then came Governor Guild, escorting the venerable chaplain of the United States Senate, Rev. Dr. Edward Everett Hale. At the sight of this distinguished couple the entire audience rose to their feet. Then handkerchiefs were waved and this was followed by loud applause. Mayor Fitzgerald was escorted by Dr. Arthur T. Cabot, president of the Massachusetts State Medical Society, and among others in the procession were the President, Dr. Lewis S. McMurtry, the President-elect, Dr. William J. Mayo, of Rochester, Minnesota; Dr. Herbert L. Burrell, Chairman of the Local Committee of Arrangements; Drs. George B. Shattuck, Frank B. Harrington, Reginald H. Fitz, Elliot B. Joslin, Chas. Harrington, J. Collins Warren, John C. Munro, Alonzo Garcelon, Chas. S. Minot, the Vice-Presidents and the Secretary of the Association, and several of the ex-Presidents.

President McMurtry called the vast throng to order and introduced Rev. Edward Everett Hale, who invoked Divine blessing.

At the conclusion of prayer, President McMurtry said:

"The American Medical Association is honored this morning by the presence here at these exercises of the governor of this great commonwealth. I regret to say, that the governor's official duties necessitate his leaving the platform immediately on the delivery of his address; otherwise it would be his pleasure to remain with us throughout the proceedings. Ladies and gentlemen, I have the great pleasure of presenting to you Governor Guild, of Massachusetts. (Applause.)

Address of Welcome by Governor Guild.

Mr. President, Ladies and Gentlemen:—Not even the official duties of the chief executive can ever bar Massachusetts from the duty of hospitality to friends gathered within her borders. (Applause.)

I come in the name of the commonwealth to bid you a most hearty welcome in this, the fairest month of all the year, to extend to you all the privileges that the commonwealth may extend to make your visit within our borders delightful and instructive.

The history of Massachusetts in medicine is too well known for me to rehearse it here. A more formal address of welcome will be delivered to you by my eloquent friend and associate in public office, Mayor Fitzgerald, of Boston. (Applause.) But while he will doubtless invite you to visit the local institutions, for which the city of Boston deserves just credit, I trust that your investigations will not be confined to the limits of this city. The commonwealth of Massachusetts has something to show you which we hope may prove of interest. I trust, for instance, that you will acquaint yourselves with the free distribution of antitoxin for the cure of diphtheria among the children of this commonwealth, carried on under the auspices of the commonwealth itself. (Applause.) I trust you will acquaint yourselves with that particular care for the unfortunate in which Massachusetts has been a leader, not only in the United States, we think, but of the entire world, the changing of poor, little, helpless, feeble-minded children into at least more useful members of society, and that has made the name of Dr. Fernald known throughout the civilized world. (Applause.) We trust you will visit the state institutions for the insane, and the schools where the blind and the deaf and dumb are taught to do their share in the duties of the world.

The colors which decorate this hall remind me that the service of medicine is not only of value in time of peace, but also in time of war. The physician in America is not even a physician merely; he has also been a citizen. The history of Massachusetts as a free commonwealth, like the history of the United States, began with the sacrifice of an American physician, a Massachusetts physician, at the battle of Bunker Hill. It was Dr. Warren, who phrased the immortal words, "How sweet and glorious a thing it is to die for one's country!" So we find a soldier who went into Cuba and led a victorious charge in which there was the necessary taking of life, who devoted himself to restoring law and order, and in stamping out disease, who devoted himself to the preservation of human life. I refer to Leonard Wood, the physician, of Massachusetts. (Applause.)

That brings me to just one other thought, and that is, proud as we are of Massachusetts, we acknowledge a broader brotherhood. Those of us who have served in time of war know when we touch elbows what it is when the surgeon waiting on you is from Columbia University, and the nurse has come from South Dakota, while you yourselves are from Massachusetts. We appreciate the fact that the boundaries of our states are becoming less and less as the years go on, and that proud as we may be in coming from Iowa, Kentucky, Minnesota, California, or from Massachusetts, we are proudest of all to find that the type of American is becoming one and the same all over the United States, and that we are brothers indeed, whether disaster comes as it has to San Francisco, or Galveston, or on the Eastern coast of the United States of America. (Applause.)

So, again, I bid you a hearty welcome. An American physician, from New York, has just published a most interesting volume on the "True Triumph of Japan." In this little book he speaks of the wonderful sanitary precautions taken in connection with the Japanese camps, and the care of the army. The history is wonderful. It reflects great credit on that grand empire of the Western ocean. But, perhaps, there is another war of which something might be said. Wars have been in many ways a curse to the world. Suffering and torment and trial are unavoidable. But, doubtless, there was a war in which our country was recently engaged, a war in which physicians especially were prominent, which stands unique according to the records of warfare among the nations. The number of lives saved by sanitation in one city in one year, the city of Havana, was more than the number of lives lost on both sides during the entire war, thanks to the skill and efficiency of the surgeons of the United States. (Applause.)

The President:—This Association is composed of representatives from every state and territory of the Union. We have present this morning a distinguished citizen of Massachusetts, whose name is familiar in every state and territory of this Union, and I am sure I will be presenting no stranger, even to this audience, gathered from every part of our great country, when I present to you President Eliot, of Harvard University. (Applause.)

Address of Welcome by President Eliot, of Harvard.

I welcome you to an exceptional community in which physicians and surgeons have for generations held equal rank with the members of all other learned and scientific professions. Massachusetts has long recognized in physicians and surgeons as a class powerful contributions to the public health and happiness, to the advancement of medical knowledge, to the industrial and economic interests of the community and its moral welfare. For generations this fortunate community has enjoyed the privilege of knowing intimately physicians who illustrated the highest qualities of human nature—men courageous and resolute under responsibility; imperturbable in the presence of danger, conservative, yet bold; in professional relations patient, cheerful and tender; diligent learners throughout life, and diligent teachers of sound doctrine concerning health and disease, virtue and vice. Experience of these noble qualities in the best physicians and surgeons during the past two hundred years has led Massachusetts to recognize completely the dignity and serviceableness of the profession of medicine and to treat it, therefore, with the highest official and social consideration. This is more than can be said with accuracy concerning the standing of the physician in many older and more conspicuous communities. (Applause.)

I welcome you as promoters of public health and efficiency to a community which, under the guidance of physicians has effectively protected its water supplies, regulated the production and sale of milk, food and drugs, controlled the smallpox, typhoid fever at the public expense, established humane treatment for the insane and defective, and supported admirable hospitals for the sick and injured, partly by the endowment method and partly at the public charge. All these beneficent

things it has done under the guidance and at the instigation of wise physicians, and accordingly this community pays to your profession the homage of its admiration and its gratitude. (Applause.)

I welcome you as members of a profession which relies for success and progress on careful observation, limited inference and exact recording—three scientific methods which are of universal application and utmost promise in human affairs. I welcome you as men who must have all their knowledge and skill available on the instant and at their fingers' ends. That is the best kind of knowledge and skill. I welcome you as men who do things rather than talk about doing them, or about what other people have done. I welcome you as men, who knowing human nature immediately, have good hope of serving and improving it. I welcome you as habitual bringers of comfort and help, both physical and moral, to men and women in personal peril or distress, and as prophets and missionaries who warn and defend the people against the most frightful perils of earlier times—against such pests as smallpox, cholera, yellow fever, tuberculosis and the bubonic plague, thus not only saving human life, but making the life of all mankind brighter and happier.

I welcome you to this historic town and commonwealth which have always stood for freedom of thought and speech, public order, universal education, reverence towards the past and hopefulness towards the future. May you enjoy to the full their beautiful June scenery, their associations with American history and literature, their many institutions of intelligent beneficence, and the cordial hospitality with which their citizens will try to convince you of their respect and good will toward the medical profession. (Applause.)

THE PRESIDENT:—We have another distinguished citizen of Massachusetts who is thoroughly at home in this audience. I present to you Dr. Arthur T. Cabot, president of the Massachusetts State Medical Society, who will deliver to you an address of welcome. (Applause.)

Address of Welcome by Dr. Cabot.

Mr. President, Ladies and Gentlemen:—I have the honor and the pleasure of representing the Massachusetts Medical Society and of bringing you a cordial greeting and hearty welcome from the profession of New England. We welcome also the distinguished guests that are drawn within our gates. I cannot call them strangers, for names like those of Widal and Trendelenburg are as familiar to American ears as those of our own masters in medicine. (Applause.) We feel honored that you have brought this great meeting to Massachusetts, and we will do what we can to help you to make it great in results as well as in numbers. We appreciate the effective work of this national association for the improvement of American medicine. There never was a time when the world had such faith in the possibilities of medicine as now. Medical research has made our knowledge exact and sure to a degree never before dreamed of. Knowledge brings power. It also brings responsibility. The practicing physician is to-day accountable and must see to it that our constantly increasing knowledge of disease is utilized to the utmost in the protection of the public health. It is only by the cordial co-operation of medical men throughout the whole country that the great tasks before us can be creditably achieved. We of Massachusetts gladly accept responsibility for our share in this united endeavor. The importance of coordinative action in obtaining the best results in public medicine is so evident that it may interest you if I should describe the effort now being made here in Massachusetts to concentrate the medical power of the state in the solution of one burning problem, that of how to control tuberculosis.

In order to cope satisfactorily with this disease, in order to insure that each patient is so cared for that he or she ceases to be a menace to family and friends, ceases to spread contagion, it is necessary to enlist the active interest of every physician in the state. Realizing this and aiming at an organization which shall reach into every town and village, shall be long-enduring, and shall not depend on the enthusiasm of a few for its future activity, the district societies have each and all appointed committees to study the problem as it is presented in their own localities and to formulate plans for efficient work. These committees, by their reports, keep the interest active in the district societies; they are of great assistance to the boards of health by securing for them the intelligent support of the profession, and the acquiescence of the community in restricting rules and orders. They are taking an active part in forming anti-tuberculosis societies among the laity; they are, in short, forwarding and guiding the movement against the great white plague, a movement which is becoming so wide-spread and so earnest that it has rightfully been named a crusade. Once or twice a year district committees meet together to report progress, to compare results and to discuss methods. In this way we hope to bring about a concerted and sustained plan of action and to constantly stimulate the interest and enthusiasm of practitioners throughout the commonwealth. Each physician must, as far as possible, see to it that no patient of his transmits the disease to any other person. When this responsibility is once widely felt, the fight against tuberculosis will be half won. Such a campaign, successfully carried forward, will do much to consolidate the profession and teach us to pull together, bring out our strength, and give us confidence in attempting the solution of other medical problems.

May not some similar plan be applied to the whole country under the auspices of this great association? And I hope and believe it may. This is but one corner in the field of work stretching before us, in which we can all labor, with constant opportunity, for mutual help. This meeting will make, I am sure, a decided step forward in medical efficiency and progress. We shall all carry away with us fresh inspiration and shall go back to our work better equipped and stimulated by this contact with others who have like ideals.

That your stay in Boston may be pleasant as well as profitable is our wish and endeavor. (Applause.)

THE PRESIDENT:—The Association is especially honored on this occasion by the delivery of the addresses to which we have listened—addresses expressive of the cordiality of the welcome which has been extended to us in this great city. But we have an additional address, and I have the pleasure as well as honor of presenting to you Mayor Fitzgerald, of the city of Boston. (Applause.)

Address of Welcome by Mayor Fitzgerald.

Gentlemen:—Once more, after an interval of forty-one years, your Association holds its convention in Boston, and I, as mayor, am privileged to throw open to you the gates of our official hospitality. It is, indeed, a rare privilege to greet the distinguished representatives of a profession which renders such universal service and has personal claims upon the good will of almost every man. Dealing with life itself and the mysteries of birth and death which envelop it, you develop in your calling the finest virtues of our nature. When we read of young physicians in Cuba and New Orleans giving up their lives in experiments designed to trace the source of infection in yellow fever, and when we remember that such instances of heroic sacrifice are the commonplace of medical history, we understand why the title of doctor should be everywhere one of dignity and affection.

You come from many states and foreign countries, single-minded in your devotion to one great central idea. I trust that, during your stay in Boston, you will observe that the government of this city is not uninfluenced by the same idea, but feels its due share of responsibility for the health of the people. We provide sanitary living conditions, a pure water supply, inspection of milk and vinegar, registration and quarantine of all contagious and infectious diseases, hygienic instruction in the public schools, and public parks, gymnasia, playgrounds and baths. Any inspection of our methods in the field of hygiene which should ignore the last named agencies would be sadly incomplete, for as you all know, prevention in this matter is a thousand times better than cure. (Applause.)

Yet prevention is not always possible, in spite of all our pains. There has always been practice enough for physicians and surgeons in Boston, and I believe we have had our share of the great names of your profession. One chair alone, the Parkman professorship of anatomy at Harvard, has had four such distinguished occupants as John Warren, J. Collins Warren, Oliver Wendell Holmes and Thomas Dwight, my associate in this reception and an honored member of the Board of Library Trustees. Indeed, the faculty of the Harvard Medical School has never been without names of national and international eminence; and the other monument on the Public Garden, erected in honor of Dr. W. T. G. Morton, of Boston, certainly commemorates one of the greatest discoveries ever made in the history of medicine. (Applause.)

Most of you, I presume, will visit our various medical colleges while you are here, and some of our well equipped hospitals, from the Massachusetts General Hospital, the oldest of all, to the City Hospital, of which Boston is no less proud than of its public library, its schools, its park system and its water works. The land and buildings of this institution represent an investment of over $3,000,000, and its various departments contain nearly a thousand beds. Its administration, which is in the hands of a board of trustees, who give their time and services without pay, is of the highest order; while the progressive spirit of its medical staff may be judged from the fact that the

Boston City Hospital was among the first to introduce pathological study in clinical work and to use antitoxins for diphtheria and the *x*-ray in diagnosis. (Applause.)

Other hospitals may be mentioned as deserving credit for success in special fields—such as the Carney Hospital, which for a long time was alone in receiving consumptive patients, and the Children's Hospital, which has done such noble work in correcting deformities and in preserving precious young lives. But there is one hospital still to arise and one monument not yet erected. The people of Boston have in tuberculosis a foe as insidious and implacable as the typhoid fever which scourges Philadelphia and Pittsburg. We have recently organized our defensive forces and laid the foundation of what I prophesy will be a great institution; and I here and now promise a monument, built by popular subscription, on any site he may select, to the member of your profession who shall forge the weapon by which we may effectively check the ravages of the great white plague. (Loud applause.)

Long addresses are not to your taste, gentlemen. Let me, then, briefly, but heartily, bid you welcome to Boston. I trust that your deliberations may be fruitful in good results for suffering humanity, and that you may succeed in your efforts to raise the standard of membership in your honorable profession. (Applause.)

THE PRESIDENT:—We will have the pleasure of having another address from another distinguished citizen of Boston, a member of our profession, and while we know that his name is familiar here in Boston, it is likewise familiar in medical circles throughout this entire country. I am sure that you will all be pleased to hear a word or two from our distinguished brother of this city, Dr. Herbert L. Burrell, Chairman of the Committee of Arrangements. (Applause.)

Address of Chairman of Committee of Arrangements.

Mr. President and Members of the American Medical Association:—The President has been good enough to speak of me individually; but what I am here for is to report as the Chairman of the Committee of Arrangements.

In behalf of the Committee of Arrangements, after I was appointed by the President, I was fortunate enough in securing the co-operation of gentlemen in medicine and the allied sciences to serve as associates on this committee. There have been associated with me more than seven hundred physicians, who have worked to arrange the necessary details for the conduct of the session, and to extend to you a cordial welcome. In fact, including the medical profession and the laity, there are actively engaged in the arrangements of this session between twelve hundred and fourteen hundred men and women in New England. Not the least are we indebted as a Committee of Arrangements to the wives of physicians, to representative women, and to the young ladies of Boston, who have generously contributed their services in arranging for your entertainment. The necessary funds for this session have been generously contributed by the medical profession. We have also received financial aid from public-spirited citizens. Harvard University and the Massachusetts Medical Society have cordially assisted in the preparation for the session. The commonwealth and the municipality, through their representatives, have already extended a welcome to you. We are deeply indebted to Tufts Medical College, to the Massachusetts Institute of Technology, and to many private societies and associations in this city who have generously placed their facilities at the disposal of the Committee of Arrangements. While the labor of preparation has been considerable, the burden has been lightened by the practically uniform co-operation of the medical profession and the public, who have striven to make the arrangements worthy of this great national association at its session in Boston. To me, personally, the arrangements have been a pleasure, owing to the helping hands that have been so generously extended. The Committee of Arrangements trusts, Mr. President, that the sole discharge of its duty will be to the advancement of knowledge in medicine. (Applause.)

THE PRESIDENT:—The ceremony attendant on the installation of the chief executive officer of this Association has always been an exceedingly simple one. On this occasion my duties in this respect are exceedingly simple and easy, because our President-elect is one whose name is so familiar in every part of this great country where scientific medicine is cultivated, that he is well and familiarly known. I have the exceptional pleasure in presenting to you your President-elect this morning, a gentleman of national and international reputation, a reputation won simply and alone by individual merit, without the aid of great institutional environment; a gentleman comparatively young for the position to which he has attained, and whose claim on the recognition of the medical profession of America represented in the American Medical Association is that of high scientific achievements, to which there is joined a superb and pure professional character. (Applause.) Ladies and gentlemen, it is my privilege and honor to present to you the President-elect of the American Medical Association, Dr. William J. Mayo, of Minnesota. (Loud applause.)

At the close of Dr. McMurtry's introductory speech, at the request of Dr. Burrell, three lusty cheers were given President Mayo.

President Mayo then delivered his address. This was published in THE JOURNAL, June 9.

Second General Meeting—Tuesday, June 5

The Association met at Jordan Hall at 7:30 p. m.

The Oration in Medicine was delivered by Dr. Frederick C. Shattuck, of Boston.

The Oration in Surgery was delivered by Dr. Joseph D. Bryant, of New York City.

These were published in THE JOURNAL, June 9.

On motion, votes of thanks were extended to these gentlemen for their scholarly and instructive addresses.

Third General Meeting—Wednesday, June 6

The Association met at 7:30 p. m.

Dr. W. H. Sanders, Montgomery, Alabama, delivered the Oration on State Medicine.

On motion, a vote of thanks was extended to Dr. Sanders for his admirable address.

Queries and Minor Notes

LIQUOR CRESOLIS COMPOSITUS.

GALLUP, N. M., May 24, 1906.

To the Editor:—I note that in the special article "The Pharmacopeia and the Physician," in THE JOURNAL, Feb. 24, page 582, under head of disinfectants, you mention liquor cresolis compositus, U. S., a mixture of equal parts of soap and cresol, and state that this preparation is an available substitute for the many expensive proprietary preparations, creolin, cresolyn, lysol, etc. Can you furnish any further information as to the formula, manipulations, etc., for producing this compound? What is the commercial cost of cresol? I have put the question to several pharmacists and none of them seem to be able to master the subject. One of the proprietaries mentioned in connection with liquor cresolis compositus creolin, it is claimed by the manufacturers, contains 50 per cent of cresylic acid. I have not been able to find cresol on any of the jobbing house drug lists, and if the compound can be made at less expense than the proprietaries cost, I would be glad to have the formula. It seems to me misleading, however, to claim that a compound which admittedly is 50 per cent. diluent should be equally effective in disinfecting power to pure acid carbolic, and why should it be less poisonous except for the dilution?

W. H. BEAR, M.D.

ANSWER.—The formula of the Pharmacopeia directs that: 80 gm. (5viss) potassium hydroxid be dissolved in 50 gm. (3ss) water contained in a porcelain dish, treated with 350 gm. (3iiiss) linseed oil and stirred until saponified. To this linseed oil soap the cresol is added and the mixture stirred until a clear solution is obtained. Then sufficient water to produce 1,000 gm. (3x) is added. This formula has been found satisfactory and produces a preparation which yields an almost clear solution when mixed with water, provided that the official cresol is used. This is offered by the Schoelkoff, Hartford & Co., Mallinckrodt Chemical Works and others at about 40 cents a pound. Chemically, the cresols may be considered as methyl derivatives of phenol, differing from the latter only by the introduction of a methyl group into the benzene nucleus, thus: C_6H_5OH is phenol, while $C_6H_4(CH_3)(OH)$ is methyl phenol or cresol. The introduction of this methyl group into phenol increases its antiseptic properties very materially, and, it is generally believed, at the same time decreases its toxicity. Fortunately, the presence of this methyl group decreases the solubility in water, thus while part of phenol will dissolve in 20 parts of water, part of cresol required 50 parts. Attempts to remedy this insolubility in water have led to the introduction of a host of cresol preparations. Of these the preparations of the type of the compound solution of cresol U. S., in which the cresol is rendered soluble by the presence of soap have been most satisfactory

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 2.

1 *Medicine and Law in Relation to the Alcohol, Venereal Diseases, and Tuberculosis Problems. S. A. Knopf, New York.
2 *Need of Publicity in Venereal Prophylaxis. D. Lewis, Chicago.
3 Rare Case of Presumably Congenital Luxation of the Arytenoid Cartilage. P. T. Hald, Copenhagen, Denmark.
4 Clinical Remarks on Traumatism as an Etiologic Factor in Appendicitis. W. J. Macdonald, St. Catharines, Ontario.
5 *Deaths of Athletes and Fatalities in Athletic Games During the Year. R. E. Coughlin, Brooklyn, N. Y.
6 *Treatment of Typhoid Fever. J. R. Landers, Bernadotte, Ill.
7 Summer Diarrhea in Infancy. G. T. Myers, Norfolk, Va.
8 Cerebral Segmentation. W. Wood, New York.
9 *Modification of the Incision for Exposing the Mastoid Bone. L. J. Hammond, Philadelphia.

1. **Medicine and Law in Relation to Alcohol, Venereal Disease and Tuberculosis.** Knopf attributes the majority of crimes to drunkenness. It is the most frequent cause of social misery, domestic dramas, privation and want. Alcohol often leads to sexual overindulgence and illegitimate relations. Excessive alcoholic indulgence often precedes the contraction of syphilis and gonorrhea. Knopf believes in the enaction of laws so far as is possible, to prevent habitual drunkards from marrying. The laws which have already been made in relation to the suppression of alcoholism should be enforced. The "patent-medicine" curse should be suppressed. He also believes in the Gothenburger system, which consists in the manufacture and sale of alcohol by the government and giving the dispenser of alcohol a salary only; but he fears that this system is not practicable in our country. The common system of "treating" is at the root of much of this evil of alcoholism. Sanatoria for alcoholics are advisable. The author suggests a law making it prohibitive for persons suffering from gonorrhea or syphilis in any of the infectious stages to contract marriage. He also reviews the tuberculosis problem.

2. **Publicity in Venereal Prophylaxis.**—Lewis expresses clearly and emphatically his views regarding methods of instruction concerning venereal prophylaxis. The boy does not know the meaning of the approach of adolescence. He should be told the truth about the sexual instinct and the need of controlling it. His fears should be dispelled and he should be taught the dignity of virility. Principles of honor toward the young girl should be inculcated in him and the danger of venereal disease should be explained to him. Actual knowledge is of even greater importance to the girl. Her reputation for life is blasted by one mistake. The young people throughout this country should be taught hygiene and physiology. They should know about reproduction. False modesty and maudlin sentimentality should be cast aside. It is the duty of every practitioner of medicine to give instruction regarding the venereal plague in its different relationships. The curse of the past has been ignorance.

3. **Fatalities Among Athletes.** Coughlin presents the following conclusions: Athletes are prone to cardiac lesions, whether a physiologic hypertrophy, a hypertrophy with dilatation and endocarditis, a white spot on the heart, myocarditis, or the different valvular conditions. Pneumonia ranks high as a cause of death in athletes because of the cardiac embarrassment in connection with this disease. Athletes appear to be susceptible to infectious diseases, and when affected with these diseases succumb to them as readily as do others. Pulmonary tuberculosis is a cause of death in a large percentage of athletes. The average age at death of athletes is far below that of the average person in the ordinary walks of life. The game of football as played in America during the season of 1905 was the cause of an appalling number of serious injuries and fatalities, and it is very evident that something will have to be done to eliminate the dangerous features of the game, especially mass play. The idea in all athletics should be to improve and to make men, not to maim, cripple and bury them.

6. **Treatment of Typhoid.**—Landers contends that in typhoid the feces can be relatively disinfected. He prefers the sulphocarbolates as intestinal antiseptics. The sponge or full bath should be used. The diet should be one that can be digested and assimilated. Mild salines will keep the bowel cleared out. Landers has used this method for years and states positively that it will prove absolutely efficient.

9. **Incision for Mastoid Operation.**—Hammond describes this incision as being triangular instead of slightly semicircular as in the usual method. It begins about one-half inch back of the superior post-auricular attachment, extending through all the tissues obliquely backward, then downward along the hairy margin, to a point just below the middle of the posterior border. From this point the incision is again carried through all the soft tissues forward and downward to the posterior border of the diagnostic fossa. This incision avoids all post-auricular vessels and nerves. A roomy field is also furnished. The entire soft tissues overlying the mastoid which are always infected are lifted with their periosteum in one sheet. Drainage from the bony cavity will be perfect. The flap made conforms very closely to the outline of the mastoid bone.

New York Medical Journal.

June 2.

10 *Critical Analysis of 186 Operations on the Liver and Gall Passages, and the After Results. (To be continued). C. A. McWilliams, New York.
11 *Do Central Tracts of the Nervous System Regenerate? L. P. Clark, New York.
12 Acute Abdominal Symptoms from Chronic Conditions. F. D. Donoghue, Boston.
13 Bacteriologic Types of Acute Conjunctivitis. (Continued). A. Duane and T. W. Hastings, New York.
14 Atrophy of the Intrinsic Muscles of the Hands Due to Lead Poisoning. A. Gordon, Philadelphia.
15 Frontal Sinusitis as an Etiologic Factor in Acute Retrobulbar Neuritis. N. M. Black, Milwaukee, Wis.
16 Puerperal Eclampsia. W. H. Randle, Germantown, Philadelphia.
17 Diagnosis of Tabes in the Preataxic Stage. A. D. Young, Oklahoma City.

10. **Operation for the Liver and Gall Passages.**—McWilliams analyzes the results of 186 operations of the liver and gall passages. Of these, 111 were operations for biliary calculi with a mortality of 12 per cent., 99 were primary operations, with 11 deaths, and 12 secondary with 2 deaths. The causes of death were perforation of the duodenum with peritonitis, 1; cholemia and nephritis, 1; pylephlebitis, 1; peritonitis, 3; postoperative hemorrhage with jaundice, 3; postoperative shock, 1; uremia with suppurative recurrent colitis, 1; pneumonia, 1; unknown, 1. Jaundice was present in 69 per cent. of the cases; of patients with stones in the gall bladder alone, 43 per cent. had icterus, while of patients with calculi in the common duct 92 per cent. had jaundice. In only 4 of the patients was there a history of the passage of stones prior to the operation. Of the 99 primary operations 80 were on women and 19 on men, and the ages of the patients varied from 22 to 73 years. The mortality in cases in which the stone was in the common duct was 29.6, as contrasted with 6.5 per cent. mortality in the cases with calculi in the gall bladder and cystic duct.

This greater mortality in common duct operations is largely due to lack of drainage and has been improved in recent operations. In 69 of the patients surviving the operation the following results were obtained: 65 per cent. were cured of symptoms referable to the calculi; 10 per cent. were improved; 23 per cent. were not improved; 12 per cent. of the total 99 operated on required secondary operations. One per cent. had probable recurrence of calculi; 9 per cent. developed subsequent herniæ; 10 per cent. had calculi overlooked at the first operation. Postoperative lung complications occurred in 4 per cent; left saphenous phlebitis occurred in 1 case. The most common cause for secondary operation was persisting biliary fistulæ due in 2 cases to calculi overlooked in the cystic duct. In 2 cases calculi were overlooked in the gall bladder. In one case a calculus was overlooked in the common duct. In 2 cases the fistulæ were due to probable stricture of the biliary passages without the presence of calculi at the second operation. The lessons to be learned from these secondary operations are: 1. More thorough search for calculi at the primary operation, splitting the ducts wide open if necessary. 2. A primary cholecystectomy would have avoided the necessity for a secondary operation in all but 3 patients. 3. In only

one of these patients had a primary cholecystectomy been performed. This speaks very strongly for the removal of the gall bladder at the first operation, since it seems to give the greatest guarantee against future difficulties, hence greater certainty of cure.

11. **Regeneration of the Central Nervous System.**—In answer to the question, "Do central tracts of the nervous system regenerate"? Clark concludes as follows: Animal experiments fail to provide conclusive data that central tracts of the nervous system ever regenerate so that the former function is restored. In warm-blooded animals, and in the human species in particular, an abortive attempt on the part of the cord to regenerate is largely if not solely confined to fibers of undoubted peripheral type. Histologic analysis of cases of hemisection, compression paraplegia and myelitis, and the like destructive lesions of the cord, fails to show positive evidence that actual structural regeneration of axis cylinders ever occurs in the central nerve tracts of the human spinal cord. In case of complete division of the brain and spinal tracts there is simply degeneration, followed by sclerosis. A most acceptable reason for non-regeneration of such tracts is shown in that the compressed nerve fibers do not possess a neurilemma sheath, from which nerve regeneration mainly if not solely occurs. This lack in cord and brain tracts, in contrast to the regenerating peripheral nerves, is due possibly to a difference of embryologic origin for these two structures of the nervous system. The cases cited by Stewart and Hart for cord regeneration either do not fulfill the conditions of test, being merely hemisections, or, the evidences for regeneration are not definite or convincing. The two suture cases reported by Stewart and Hart and Fowler are good illustrations of this type. In case of complete transverse division of the cord there is no sufficient justification either from experimental or clinical data to warrant suture of the spinal cord in an attempt to cure the defect. experiments, therefore, show that injury to a single kidney, by calculus, direct trauma or obstruction to one ureter, is a powerful predisposing factor in the evolution of a surgical lesion of that organ.

Boston Medical and Surgical Journal.

May 31.

18 Medical Statistics and the Sanitary Department of the Russian Forces in the Far East. J. V. R. Hoff, U. S. A.
19 Method of Instruction in the Harvard Medical School. F. C. Shattuck, Boston.
20 Stiff and Painful Shoulders. E. A. Codman, Boston.
21 Complications of Acute Pneumonia. H. Jackson, Boston.
22 Injuries of the Cranium. W. L. Estes, South Bethlehem, Pa.

St. Louis Medical Review.

May 26.

Surgery, Gynecology and Obstetrics, Chicago.

May.

23 *Acute Unilateral Septic Infarcts of the Kidney. G. E. Brewer, New York.
24 Diagnostic Significance of Ureteric Meatoscopy in Renal Disease. W. C. Klotz, New York.
25 *Observations on a Form of Death Resulting from Certain Operations on the Duodenum and Jejunum. J. W. D. Maury, New York.
26 One-child Sterility. F. S. Mathews, New York.
27 *Positive-Pressure Method of Artificial Respiration. N. W. Green, New York.
28 Pfannenstiel's Incision in Gynecology. H. C. Taylor, New York.
29 *Magnesium Sulphate in the Production of Anesthesia and in the Treatment of Tetanus. J. A. Blake, New York.
30 Pyelitis in Pregnancy and the Puerperium. E. B. Cragin, New York.
31 *Treatment of Inguinal Hernia, with Special Reference to the Use of the Rectus Muscle. J. L. Russell, New York.
32 Some Considerations in the Treatment of Purulent Appendicitis. C. H. Peck, New York.
33 *What Becomes of Lembert Stitches Placed in the Gut? C. Eggers, and J. W. D. Maury, New York.
34 Treatment of Femoral Hernia. J. A. Blake, New York.
35 Technic at the Sloane Maternity Hospital. E. B. Cragin, New York.
36 Splint for the Treatment of Colles' Fracture. F. H. Pool and A. V. S. Lambert, New York.
37 Technic of Operations on the Biliary Passages. A. W. M. Robson, London, England.

23 **Unilateral Septic Infarcts of Kidney.**—Brewer records the history of 13 cases in which a unilateral septic infection of the kidney occurred under the form of a general septic disease in which the general symptoms overshadowed the local disease of the kidney. The lesion as shown by nephrectomy or by autopsy was in most cases unilateral and consisted of multiple septic infarcts. Eleven of the 13 patients were women; in 11 the right kidney was the one involved. A sudden rise of temperature to 104 F. was the mode of onset, chill occurring in 4 cases. Pain was felt in all but one case. Muscular rigidity was marked in 3 cases. Leucocytosis varied from 12,000 to 35,000. In 12 cases the urine contained albumin, in 5 albumin and pus, and in 5 more albumin, pus and blood. Two patients gave history of previous injury and one previous disease of the kidney, but probably evidence of previous lesion could have been obtained in more cases if it had been thoroughly sought for. In 6 cases in which nephrotomy was performed 5 patients died; in 7 cases nephrectomy was done and 6 patients recovered. Culture from some of the cases showed the presence of *Streptococcus pyogenes, Staphylococcus pyogenes aureus,* and the colon bacillus.

Brewer gives the results of experiments to determine why one kidney only is affected in these cases, although the pathogenic organism reaches the organ through the blood stream, and arrives at the following conclusions: None of the control animals which had received a moderate dose of pathogenic bacteria directly into the circulation without previous injury developed a surgical lesion of the kidney. Of 16 animals which in addition to inoculation received an injury to one kidney, 5 showed no lesion or only hyperemia and parenchymatous degeneration. Of the remaining 11 all developed distinct surgical lesions of the kidney, unilateral in the injured kidney in 8 cases. The renal lesions in these cases were practically identical with those observed in the clinical cases. The

25. **Death from Duodenal Obstruction.**—Maury has determined by experiment that if the stomach is excluded for seventy-two hours from communication with the lower gut the animal dies. The line at which an obstruction may occur without fatal effects, which he has called the lethal line, is situated 35 cm. from the pylorus. The cause of death is uncertain, but the author hopes to determine by subsequent investigation whether it is due to an intoxication resulting from a disturbance of the balance of secretion or to some interference with the cerebral circulation brought about by nervous impulses the result of the operation.

27. **Artificial Respiration.**—Green discusses the question as to the advantages and disadvantages of the method of positive and negative pressure in inducing artificial respiration, and what is the best method of applying positive pressure by intubation or tracheotomy. The objection that sudden introduction of air under pressure may lacerate diseased or collapsed alveoli is obviated by introducing a valve into the pressure apparatus which will secure the gradual increase of pressure. He has performed a large number of experiments on animals and sums up his results in the following statements: In dogs the positive pressure method of artificial respiration is efficient; severe operations may be performed with recovery; intubation is an easy and practical means by which to apply the positive pressure; the chief danger after the operation is completed lies in the accumulation, without proper drainage, of septic fluid within the chest.

The result of Sauerbruch's operation on the human being in thoracic conditions are by no means discouraging. It seems reasonable that with either method here discussed the field for thoracic surgery will develop in the direction of active intervention, rather than continue along the present lines of expectant treatment.

29. **Magnesium Sulphate Anesthesia.**—Blake summarizes the results obtained by Meltzer, Meyer, Haubold and himself in the induction of anesthesia by intraspinal injections of magnesium sulphate. It has been shown by animal experiment that the injection of magnesium sulphate intraspinally in the proportion of 0.06 gm. per kilo. body weight will produce a complete paralysis, both motor and sensory, extending upward to involve the whole muscular system and the sensorium. Larger doses produce death by paralysis of the respiration. Blake's report covers 14 cases. In some chloroform was used as an adjunct. No accurate estimate of the time required to produce general anesthesia can be given, but it varied from one to three hours. Analgesia appeared first, the local anesthesia

followed by general, which merged into coma lasting from two to ten hours or more. In some cases operations were done in the period of local anesthesia, unconsciousness not occurring. In 2 cases no anesthetic effect was noted; both patients were alcoholics. The reflexes were at first diminished, then abolished and then returned slowly. Retention of urine was present in all but 2 cases. The rate of respiration was slowed. This rate should be carefully observed, as it is an index of the danger line. Profuse diaphoresis was noted in a number of cases, and the bodily temperature was lowered in some cases. The heart's action was regular and moderate, and the blood pressure was not lowered. Vomiting occurred in cases in which the injection had marked effect. The action of the drug could be checked by removing cerebrospinal fluid and washing with normal salt solution. Magnesium sulphate has been tried in shock in strychnin poisoning, and for local anesthesia by external application, but its action has been disappointing. Blake reports 2 cases of tetanus treated with intraspinal injections of this drug, one patient recovering, the other not. He claims that it restrains the convulsions, relaxes the muscles of mastication, and produces a prolonged effect without injurious action except inhibition of the bladder entailing the need of catheterization.

31. **New Technic of Hernia Operation.**—Russell describes the improvement devised by J. A. Blake in 1900 by which the rectus muscle is made to cover the hernial opening. After the usual preliminary steps of the operation the internal oblique is retracted, the rectus is exposed and the cord being lifted from its bed, the muscle is sutured with two or three interrupted sutures of chromic gut, or, preferably, kangaroo tendon, to the reflected edge of Poupart's ligament. The cord is transplanted as in the Bassini operation, and the internal oblique is sutured to Poupart's ligament in front of the rectus. The external oblique is then sutured over the cord, folding it on itself, thus taking up the slack which had been produced in it by the hernial tumor. Excellent results have been obtained in 36 cases in which the author has used the method.

33. **Lembert Sutures.**—Eggers and Maury from a study of specimens from experimental gastroenterostomies conclude that one of three fates may occur to a Lembert suture: It may remain *in situ:* it may be partially intruded into the lumen of the gut; it may be entirely intruded and disappear in the intestinal contents. The cases which show intrusion are from animals which had a relative short postoperative life—less than a month. It is probable that the intrusion can be accounted for by the fact that the stitch was accidentally carried too deep and actually pierced the mucosa.

Ophthalmic Record, Chicago.

May.

38 Foreign Body In the Orbit. C. H. Baker, Bay City, Mich.
39 *Morax-Axenfeld Conjunctivitis. F. T. Tooke, Montreal.
40 Successful Operation for Conical Cornea. F. Stauffer, Salt Lake City, Utah.
41 New Foreign-Body Instruments. F. C. Todd, Minneapolis.
42 *Transillumination of the Eye in the Differential Diagnosis of Intraocular Tumors, with Description of an Ocular Transilluminator. H. V. Würdemann, Milwaukee.
43 Recent Improvements in Perimetry. F. A. Davis, Denver.
44 Choked Disk and Brain Tumor. A. R. Baker, Cleveland.

39. **Morax-Axenfeld Conjunctivitis.**—Tooke says that the symptoms complained of are those of a burning sensation in the eyes, generally worse in the morning. There is usually a discharge and the lids are found tightly gummed together on waking. Both eyes are usually affected. The conjunctiva is slightly hyperemic and somewhat thickened near the ciliary margin, assuming a velvety appearance. The secretion expelled by contraction of the lid is seen on the lid margin as brownish-yellow crusts and the skin at the palpebral margin is erythematous and excoriated. The cornea is seldom affected, and ulcers, when they occur, are generally benign and shallow and do not spread. There are, however, severe cases accompanied by hypopyon and iritis. There is difference of opinion as to whether the diplobacillus is present in the nose. The disease may be spread through the air, and Axenfeld has devised a mouth veil to prevent bacteria being carried to the patient from the operator in the act of speaking. The same device has been adopted in the Boston Eye and Ear Infirmary. Sulphate of zinc in 0.5 per cent. to 1 per cent. solution acts as a specific, and when employed systematically will invariably cure the disease. Many observers, however, claim that this strength of solution is too strong and that equally good results are obtained by use of a 0.25 per cent. solution.

42. **Transillumination of the Eye.**—Würdemann has devised a modification of the De Zeng ophthalmoscope. The entire instrument is not much larger than a fountain pen and may be handled in the same manner. The small electric globe in the ophthalmoscope is replaced by another of the same size, on the end of which there is a lens. The cone-shaped screw cap of the instrument contains a glass rod about three-fourths of an inch in length, which comes in contact with the end of the lens. Nearly all the light is thus focused in the glass rod and is brought out through it to the tip of the instrument, and from there a beam of light is projected through the eye or the structures to be illuminated. The instrument is also efficient for illuminating the frontal and ethmoidal sinuses, the bridge of the nose and the maxillary sinuses.

New Orleans Medical and Surgical Journal.

June.

45 Two Yellow Fever Topics. S. E. Chaille, New Orleans.
46 Pathology. C. W. Heilzman, Muskogee, I. T.
47 *Early Diagnosis of Malignant Tumors, with Special Reference to Cancers of Breast, Uterus and Stomach. A. A. Landry, Paincourtville.
48 Altruism Has Limitations, and Charity Begins at Home. B. A Colomb, Union P. O., La.
49 Tinea Favus Papillaris. J. V. Shoemaker, Philadelphia.

47. **Early Diagnosis of Malignant Tumors.**—Landry gives the following characteristics suggestive of early malignancy of tumors of the breast, uterus and stomach: 1. Rapid growth. 2. Tendency of the tumor to invade surrounding tissues. 3. Pain, spontaneous, and of a lancinating and paroxysmal character, was long considered characteristic of malignancy, but is misleading. Pain is not characteristic of early cancer. 4. Too much importance should not be given to retraction of the nipple in cancer of the breast. Redness, edema, nodular development, ulceration, involvement of lymphatic glands and the development of the characteristic cachexia are late symptoms which should not be waited for before having recourse to radical treatment. Early examination in suspected cancer of the uterus and an early resort to exploratory operation in suspected cancer of the stomach are to be recommended.

Buffalo Medical Journal.

June.

50 *Report of 25 Cases of Pneumonia Treated with Pane's Antipneumonic Serum. G. Tartaro, Buffalo, N. Y.
51 *A Series of Tracheotomies. G. F. Cott, Buffalo, N. Y.

50. **Serum Treatment of Pneumonia.**—Tartaro treated 25 cases of pneumonia with Pane's antipneumonic serum with two deaths. He concludes that the serum does not produce any change in the physical signs, but mitigates the gravity of the disease, though, as a rule, it does not shorten the course except in children. The serum produces a drop of temperature of from 1 to 3 degrees. The earlier the injection the more marked, as a rule, is the decrease in temperature. Serum causes relief of the subjective symptoms in nearly every case. Its influence in causing disappearance of cyanosis is very marked. Cardiac and other complications in pneumonia due to pneumonic toxins are relieved by the serum. The principal objections to Pane's serum are: 1. It does not cut short the disease as antitoxin often does in diphtheria. This is explained by the fact that diphtheria is a toxemia and pneumonia a bacteriemia. 2. Pane's serum does not seem to have any power on the local manifestations of the disease. 3. The result of serum therapy is uncertain. This is probably due to the different pathogenic agents which produce pneumonia and the unicism of cultures employed in the production of serum and the different stages of the disease in which it is used. Tartaro believes that we can not dispense with serum therapy of pneumonia, however incomplete its activity.

51. **Series of Tracheotomies.**—In the course of 100 cases presenting indications for intubation in Cott's experience, tracheotomy became necessary in 26, so that he advises the surgeon to carry instruments and tubes for tracheotomy with his regular outfit for intubation. In the circumstances in

which it is usually performed the operation presents considerable difficulties, especially in children with fat necks, and when the light is bad and assistants lacking or inexperienced. The operator must depend mostly on his ingenuity in bringing the work to a successful issue.

St. Paul Medical Journal.

June.

52 Anatomy and Physiology of the Stomach. A. R. Colvin, St. Paul.
53 Etiology and Pathology of Gastric Ulcer. J. L. Rothrock, St. Paul.
54 Diagnosis of Gastric Ulcer. C. L. Greene, St. Paul.
55 *Surgical Treatment of Gastric Ulcer. A. Schwyzer, St. Paul.
56 Medical Treatment of Gastric Ulcer. W. Davis, St. Paul.
57 Etiology of Acute Articular Rheumatism. E. W. Buckley, St. Paul.
58 Joint Lesions Simulating Rheumatism and the Mechanical Treatment of the Same. A. J. Gillette, St. Paul.
59 The So-called Rheumatic Element in Nervous Disease. C. E. Riggs, St. Paul.
60 *Rheumatoid Arthritis. E. L. Kannary, St. Paul.
61 Treatment of Rheumatism. L. C. Bacon, St. Paul.

55. **Surgical Treatment of Gastric Ulcer.**—Schwyzer recommends surgical treatment when internal treatment does not give satisfactory results. The main conditions are partly acute by perforation and hemorrhages partly subacute by gradual perforation into neighboring structures and small repeated hemorrhages and, finally, in the chronic form, long lasting moderate inflammatory and adhesive processes with pain and changes in the function of the organ, indigestion and retention of food. Gastroenterostomy is the usual operation for the relief of stenosis of the pylorus, but in cases in which the ulcer has cicatrized, pyloroplasty gives very good results. If malignancy is suspected pylorectomy is the operation of choice. In some cases, with indistinct symptoms of ulcer, very slight changes are found at operation, and yet the operation is successful in removing the symptoms which were probably due to the presence of adhesions. Gastroenterostomy with gastrostomy as performed in the Rutkowsky-Witzel operation is to be recommended for recurrent hemorrhage. This secures rest for the ulcer and is preferable to rectal feeding, which can not be continued for a long time. In profuse hemorrhage of sudden onset when recurring during the strict Leube treatment, the author would not delay operative interference, but would content himself with a jejunostomy if the ulcer could not be very easily excised. Schwyzer reports 20 cases, with recovery from the operation in all.

60. **Rheumatoid Arthritis.**—Kannary favors the infective theory of the etiology of rheumatoid arthritis and calls attention to the fact that it is very important to make a correct diagnosis of the acute forms from ordinary acute rheumatism. The temperature in rheumatoid arthritis is not so high as in acute rheumatism, the joints are swollen but not red. The swelling is fusiform and mostly in the periarticular structures. The pain is much less severe. There is no tendency to endocarditis. Salicylates have no influence and the disease progresses steadily to the chronic condition.

The Alienist and Neurologist, St. Louis, Mo.

May.

62 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. (To be continued.) J. G. Kiernan, Chicago.
63 Erotic Symbolism. (To be continued). H. Ellis, Cornwall, England.
64 Psychoencephalonasthenia or Cerebrasthenia Simplex and Psychoencephalonasthenia or Cerebrasthenia Insanicos. (To be continued). C. H. Hughes, St. Louis, Mo.
65 Legal Aspects of Epilepsy. H. C. B. Alexander, Chicago.
66 *Railway Brain Strain of, and Brain Strain Regulation of Railway Employés. C. H. Hughes, St. Louis.

66. **Railway Brain Strain.**—Hughes states that railway travel will not be freed from its present appalling peril till the exacting and exacted brain strain on its employés is lessened and the employés themselves take better care of their brains by the avoidance of all those influences when off duty that tend to vitiate the integrity of the mental powers, and by not seeking to do excessive overtime work. No railway is safe from the posibility, almost certainty, of accident when train dispatchers, engineers or switchmen serve continuously from forty-eight to seventy-two hours, or even for twenty-four hours, and it is the humane duty of the medical profession, with the present psychologic light on the ordinary brain's endurance capacity, to advise and to insist that such excessive brain strain in all departments of public service cease, especially when consequences are so serious as in the railway service.

American Journal of Orthopedic Surgery, Philadelphia.

April.

67 Rigid Spine. G. R. Elliott, New York.
68 *Mechanical Treatment of Non-tubercular Joint Inflammation. R. H. Sayre, New York.
69 Calf Deformity in Club-foot Cases. E. W. Ryerson, Chicago.
70 Early Operative Treatment of Tuberculous Osteitis of the Knee. B. Bartow, Buffalo, N. Y.
71 Modification of the Back Brace for Pott's Disease. A. Thorndike, Boston.
72 Modification of the Dollinger Brace for Cervical and Upper Dorsal Pott's Disease. R. Taylor, Baltimore.
73 *An Apparatus for Making Passive Motion of the Elbow. G. G. Davis, Philadelphia.
74 Treatment of Knee Ankylosis with a Shaffer Semilunar Cartilage Brace Modified by a Stromeyer Screw and a Congdon Catch. J. M. Spellissy, Philadelphia.
75 Cubitus Varus, Showing Deformity of Lateral Curvature of the Spine. Corrected by Osteotomy. F. E. Peckham, Providence, R. I.
76 Treatment of Paralytic Club Foot by Arthrodesis. W. R. Townsend, New York.
77 Observations on Broken Necks. R. H. Sayre, New York.

68. **Non-tubercular Joint Inflammation.**—Sayre urges the importance of rest and quiet in the early stages of arthritis deformans and tuberculous joint affections in giving freedom from pain, shortening the time of treatment, and lessening the amount of destruction in the joint. Instrumental protection is not to be employed to the exclusion of the many details of diet and hygiene so essential in the treatment of these cases, but simply added to them as a most helpful assistant.

73. **Passive Motion of Elbow.**—In several cases of excision of the elbow Davis succeeded in hastening restoration of motion by the use of the following apparatus: A leather sleeve was made, extending from the wrist to the elbow and laced up in front. To the under side was riveted a flat bar which extended six or eight inches (15 to 20 cm.) beyond the elbow and bent at a slightly obtuse angle. To this bar was fastened a weight of about one pound. It could be moved along the bar and fixed in any desired position by a screw. As the patient moves around the arm is continually jogging up and down in pendulum fashion. The weight on the lever should be so adjusted as to counterbalance the weight of the arm and hand. If the apparatus becomes irksome it can be left off for several hours and its use again resumed.

The Postgraduate, New York.

May.

78 Case of Raynaud's Disease. R. Abrahams, New York.
79 Case of Pyemia. G. H. Cocks, New York.
80 Case of Malignant Endocarditis. G. H. Cocks, New York.
81 Scope of Local Anesthesia in General Surgery. J. A. Bodine, New York.
82 Cholelithiasis and Its Treatment from the Practitioner's Standpoint. L. Weber, New York.
83 *Dermo Scale for the More Accurate Description of Skin Lesions. C. W. Allen, New York.
84 Case of Double Optic Neuritis Which Illustrated the Sometime Value of Agnosticism in Medicine. D. B. St. John Roosa, New York.

83. **Dermo Scale.** The scheme proposed by Allen is based on the metric system, the unit of the dermo scale being one-quarter of a millimeter. In order to designate a given lesion by the proper scale number it is necessary only to know its diameter in mm. or cm., multiplying the mm. by 4 and the cm. by 40; thus a lesion having a diameter of 5 mm. would number 20 of the scale, or the size of the French pea. Number 40 would correspond to 10 mm. diameters, or dividing it by 10 would give 1 cm. Number 100, corresponding to lesions the size of a shilling, quarter-dollar, sou, krone, etc., would be known at once to be of 2½ cm. diameter, while number 400, whose exact diameter is 100 mm. or 10 cm., corresponds to palm-sized lesions or tumors of adult fist-size. Allen says that if these few points be borne in mind and the scale numbers 1, 40 and 400 be remembered, it becomes an easy matter to think of all the sizes now designated by seeds and small objects as numbering from 1 to 40, and those designated by coins from 40 to 100, while beyond this the larger fruits, vegetables and anatomic parts of the body which have usually been brought into service would correspond to multiples of 100 indefinitely.

Physician and Surgeon, Detroit and Ann Arbor.

April.

85 Pathologic Physiology of the Tractus Genitalis. B. Robinson, Chicago.
86 Some Medical Mistakes. M. F. Porter, Ft. Wayne, Ind.
87 Tonsillitis and Its Complications. C. F. Kuhn, Detroit.

Journal of Nervous and Mental Disease, New York.

May.

88 Contribution to the Study of Cerebellar Tumors and Their Treatment. J. J. Putnam and G. A. Waterman, Boston.
89 Hyperesthesia and Hypalgesia and Their Significance in Functional Nervous Disturbances. E. B. Angell, Rochester, N. Y.
90 Coming of Psychasthenia. G. A. Blumer, Providence, R. I.

Virginia Medical Semi-Monthly, Richmond, Va.

May 25.

91 Production and Therapeutic Value of Roentgen Rays. (To be continued). J. C. McGuire, Washington, D. C.
92 Treatment in Infancy. W. H. Birchmore, Brooklyn, N. Y.
93 Alkaloids in Practice. M. G. Price, Mosheim, Tenn.
94 Acute Nephritis—with Special Reference to Diagnosis and Treatment. O. C. Wright, Jarratt, Va.
95 My Experience with Downes' Electrothermic Angiotribe in Pelvic and Abdominal Surgery. J. W. Bovée, Washington, D. C.
96 Pathology, Diagnosis and Treatment of Diphtheria. P. A. Irving, Richmond.

Medical Fortnightly, St. Louis.

May 10.

97 Lymphoid Hypertrophy in the Pharyngeal Vault. W. W. Bulette, Pueblo, Colo.
98 Pathology and Diagnosis of Lesions of the Spinal Cord and Peripheral Nerves. F. N. Norbury, Jacksonville, Ill.
99 Vaginal Tampon. B. Robinson, Chicago.
100 Relation of Man to Nature (A Study Prompted by "Testimonies of the Sepulchres"). A. S. Ashmead, New York.

The Medical Fortnightly, St. Louis.

May 25.

101 The Newer Neurology. L. H. Mettler, Chicago.
102 Treatment of Gallstones with Chologen. C. D. Aaron, Detroit, Mich.
103 Relation of Man to Nature (A Study Prompted by "Testimonies of the Sepulchres"). A. S. Ashmead, New York.
104 Educational Influence and Significance of Sanatoriums for Cases of Incipient Tuberculosis. G. Homan, St. Louis.

Brooklyn Medical Journal.

May.

105 Honors that Have Come to the Medical Profession in America. W. Schroeder, Brooklyn, N. Y.
106 Are Tuberculosis Clinics Dangerous to the Public Health? J. H. Raymond, Brooklyn.
107 The Long Island Open Air Sanatorium. H. Greeley, New York.
108 Liability of Physicians and Surgeons in Civil Actions for Malpractice. E. L. Prentiss, New York.

Chicago Medical Recorder.

May 15.

109 Indications for Operative Interference in Mastoiditis Associated with Acute Suppurative Otitis Media. T. M. Hardie, Chicago.
110 Tuberculosis as It Affects the Eye. W. H. Wilder, Chicago.
111 Etiology and Symptomatology of Scarlet Fever. J. L. Fleming, Chicago.
112 An Enormous Semi-Submerged Tonsil. E. Pynchon, Chicago.
113 Standard of Government Meat Inspection. W. K. Jaques, Chicago.
114 Treatment of Impotency by Resection of the Vena Dorsalis Penis. G. F. Lydston, Chicago.
115 Cure of So-called Laryngeal Vertigo (Bronchial Syncope). C. J. Whalen, Chicago.

Texas Medical Journal, Austin.

May.

116 Mosquito Extermination and Its Bearing on the Yellow Fever and Modern Quarantines. C. W. Truehart, Galveston City.

Medical Sentinel, Portland, Ore.

May.

117 Surgeon in Relation to the Dentist. J. A. Donovan, Butte, Montana.
118 Rational Treatment of the Communicable Diseases. R. J. Smith, Smithfield, Utah.
119 Nasal Obstruction. J. P. Goray, Portland.
120 Endocarditis as a Result of Gonorrheal Infection. E. R. Northrop, Spokane, Wash.

Colorado Medicine, Denver.

May.

121 Immunity. W. C. Mitchell, Denver.
122 Case of Heart Disease. G. H. Cattermole, Boulder.
123 The Mexican from the Viewpoint of the Medical Practitioner. J. McFadzean, Denver.
124 Avoidable Mortality of Surgery. J. G. Sheldon, Telluride.

Journal of Experimental Medicine, New York.

May 25.

125 Influence of Temperature on the Rate of Reaction (Hemolysis, Agglutination, Precipitation). M. H. Noguchi and L. Walbum, Copenhagen.
126 Formation of True Bone with Cellular (Red) Marrow in a Sclerotic Aorta. C. H. Bunting, Baltimore.
127 Relation of Types of Diarrhea in Children to Strains of Bacillus Dysenteric. J. H. M. Knox, Jr., and E. H. Schorer, Baltimore.
128 Studies on the Influence of Tension in the Degeneration of Elastic Fibers of Buried Aortæ. W. H. Harvey, Toronto.
129 Experimental Myocarditis; A Study of the Histologic Changes Following Intravenous Injections of Adrenalin. R. M. Pearce, Albany, N. Y.
130 Enzymes in Phagocytic Cells of Inflammatory Exudates. E. L. Opie, New York.
131 Toxicologic Constitution of Amanita Phalloides. W. W. Ford, Baltimore.
132 Morphology and Reproduction of the Spirochæta Pallida and a Rapid Method for Staining the Organism. L. B. Goldhorn, New York.
133 Glycylprolin Anhydride Obtained on Tryptic Digestion of Gelatine. P. A. Levene and W. A. Beatty, New York.
134 Phosphotungstates of Certain Aminoacids. P. A. Levene and W. A. Beatty, New York.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

May 19.

1 *Lung Complications-After Operations with Anesthesia. G. E. Armstrong.
2 *Postanesthetic acetonuria. L. Beesly.
3 Subphrenic Abscess Complicating Empyema; Resection of Ribs; Cure. E. W. Archibald.
4 *An Improved Method of Performing the Pancreatic Reaction in the Urine. P. J. Cammidge.
5 *Extroversion of the Bladder. C. J. Bond.
6 Tonsillitis in Convalescence from Diphtheria. J. D. Rolleston

1. **Lung Complications After Anesthesia.** — Armstrong studied 2,500 cases of ether anesthesia, the anesthetic being administered in nearly all cases by means of the Clover inhaler. Among the 2,500 cases, 55, or 2.2 per cent., developed some lung complications; 32, or 1.28 per cent., came to autopsy. The youngest patient was 1 year of age and the oldest 78. There were 40 males and 15 females, that being about the proportion in which the sexes are represented in the operations. Out of 55 cases that developed lung complications, 35 occurred during the cold months of the year, from November to March inclusive. Not one instance of lung complication occurred in the last 500 cases. The lung complications all developed within forty-eight hours after the administration of the anesthetic. Of the 55 cases, 37 had some septic focus before the development of the lung complications. In 8 cases the presence of emphysema was noted before the administration of the anesthetic. In one case the patient suffered from chronic bronchial asthma, and in 9 cases chronic nephritis was present.

The 55 cases are again divided as follows: 1. Among the 14 cases of lobar pneumonia there were 10 of sepsis of some form. In 8 of these there was peritonitis, 3 being due to typhoid perforation; 3 patients had chronic nephritis, 1 aspirated vomitus, 1 suffered from fractured ribs, and 1 from diabetes. 2. There were 16 cases of bronchopneumonia, among them being 12 cases of sepsis of some form, including 6 cases of peritonitis, 1 of which was secondary to typhoid perforation; 3 had nephritis, 4 aspirated food or vomitus, 3 were trephining cases, and in 6 there was pre-existing emphysema. 3. Among the 19 cases of bronchitis there were 5 of trephining, in 7 there was peritonitis, in 3 nephritis; in 2 there was pre-existing emphysema, 1 with chronic bronchitis; in 1 there was typhoid perforation, and another patient had tracheotomy performed; this one aspirated blood. 4. Of the 3 cases of plastic pleurisy 2 were associated with tuberculous cervical adenitis, and 1 with cancer of the sternum; all these recovered. 5. There was 1 case of pleural effusion occurring in a patient suffering from suppurative mastitis with pleurisy on the same side. 6. There were 2 cases of empyema, 1 following excision of an epithelioma from the lower lip. There was no history of pneumonia preceding the empyema. One followed an operation for appendicitis with abscess and generalized peritonitis.

Armstrong reviews the causes for the occurrence of these complications which seem to show that the administration of ether *per se* was not a very active cause. In nearly all instances other more highly probable etiologic factors were pres-

ent, such as aspiration from the mouth and pharynx, and the operation performed, the abdominal operations predisposing markedly to the occurrence of these complications.

2. **Post-Anesthetic Acetonuria.**—Beesly summarizes his paper as follows: 1. Two separate conditions should be recognized—acute and chronic acetonuria. 2. Ether and chloroform invariably induce a temporary acute acetonuria which may be very detrimental even to an apparently healthy organism. 3. This acute anesthetic acetonuria is accompanied by symptoms of acid intoxication, sometimes ending in death, when the kidneys are unable to cope with the increased formation of acetone by a corresponding capability of excretion. 4. Although ether may produce a greater acetonuria, this is less harmful than that produced by chloroform, because ether is less injurious to the cells of the liver and kidneys, and thus does not hinder their power of elimination. 5. The more plentifully and rapidly excretion is carried on the less serious is the poisoning. 6. The effects of the poisoning are mitigated by the administration of alkalies, which may also be given with advantage before operation if poisoning be anticipated. 7. The usual risks of anesthesia are not increased by pre-exisent chronic acetonuria. 8. Anesthesia is dangerous with pre-existent acute acetonuria, especially if the anesthetic is chloroform. 9. A guarded prognosis must always be given when acute acetonuria is present with symptoms of poisoning. 10. Death following the administration of chloroform with symptoms of poisoning may be due to the idiosyncrasy of the patient.

4. **Pancreatic Reaction in the Urine.**—The details of Cammidge's improved method of examining the urine in suspected cases of pancreatic diseases are as follows: A specimen of the twenty-four hours' urine, or of the mixed morning and evening secretions, is filtered several times through the same filter paper and examined for albumin, sugar, bile, urobilin and indican. A quantitative estimation of the chlorids, phosphates and urea is also made, and the centrifugalized deposit from the urine examined microscopically for calcium oxalate crystals. If the urine is found to be free from sugar and albumin, and of an acid reaction, 1 c.c. of strong hydrochloric acid (specific gravity 1.16) is mixed with 20 c.c. of the clear filtrate, and the mixture gently boiled on the sandbath in a small flask, having a long-stemmed funnel in the neck to act as a condenser. After ten minutes' boiling the flask is well cooled in a stream of water, and the contents made up to 20 c.c. with cold distilled water. The excess of acid present is neutralized by slowly adding 4 grams of lead carbonate. After standing for a few minutes the flask is again cooled in running water and the contents filtered through a well-moistened, close-grained filter-paper until a perfectly clear filtrate is secured. The filtrate is then well shaken with 4 grams of powdered tribasic lead acetate and the resulting precipitate removed by filtration, an absolutely clear filtrate being obtained by repeating the filtration several times if necessary. The large amount of lead in solution is removed either by treatment with a stream of sulphuretted hydrogen or by precipitating the lead as a sulphate. For this purpose the clear filtrate is well shaken with 2 grams of finely-powdered sodium sulphate, the mixture heated to the boiling point, then cooled to as low a temperature as possible in a stream of cold water, and the white precipitate removed by careful filtration; 10 c.c. of the perfectly clear transparent filtrate is made up to 18 c.c. with distilled water and added to 0.8 gram of phenylhydrazin hydrochlorate, 2 grams of powdered sodium acetate and 1 c.c. of 50 per cent. acetic acid contained in a small flask fitted with a funnel condenser. The mixture is boiled on a sandbath for ten minutes, and then filtered hot through a filter paper moistened with hot water into a test-tube provided with a 15 c.c. mark. Should the filtrate fail to reach the mark, it is made up to 15 c.c. with hot distilled water. In well-marked cases of pancreatic inflammation a light yellow, flocculent precipitate should form in a few hours, but it may be necessary to leave the preparation to stand over night before a deposit occurs. Under the microscope the precipitate is seen to consist of long, light yellow, flexible, hair-like crystals, arranged in sheaves which, when irrigated with 33 per cent. sulphuric acid, melt away and disappear in from ten to fifteen seconds after the acid first touches them.

The urine employed for the experiment should be fresh, and not have undergone fermentative changes. If alkaline in reaction it should be made acid with hydrochloric acid before the test is commenced; any glucose that may be present should be removed by fermentation after the urine has been boiled with the acid, and the excess neutralized.

5. **Extroversion of Bladder.**—Bond reports a case of extraperitoneal rectal implantation of the ureters for extroversion of the urinary bladder in a young man 17 years of age. Three years after the operation the patient had practically no difficulty with the urine, which is voided from the bowel four or five times in the twenty-four hours.

The Lancet, London.

May 19.

7 Preservation of Health Among the Personnel of the Japanese Navy and Army. B. Takaki.
8 Autointoxication; Its Relation to Certain Disturbances of Blood Pressure. H. B. Shaw.
9 *Cheyne-Stokes Phenomenon in Acute Cerebral Compression. W. Trotter.
10 *Action on Bacteria of Electrical Discharges of High Potential and Rapid Frequency. A. G. R. Foulerton and A. M. Kellas.
11 *Peculiar Form of Hemoptysis with Presence of Numerous Spirochete in the Expectoration. A. Castellani.
12 Hypertrophy and Dilatation of the Heart in a Child Without Valvular Disease or General Adhesion of the Pericardium. G. Carpenter and T. Fisher.
13 Ossification of the Fontanelles and Closure of Sutures at Birth —a Cause of Difficult Delivery. T. L. Lynch.
14 Note on the Influence of Antitoxic Serum on the Tuberculo-Opsonic Index. T. R. Bradshaw.
15 Extensive Rupture of the Liver Without External Injury. F. S. Lloyd.

9. **Cheyne-Stokes Phenomenon in Cerebral Compression.**—The features of the occurrence of periodic phenomena in cases of cerebral compression on which Trotter lays special stress are as follows: 1. The Cheyne-Stokes phenomenon is in such cases no mere terminal symptom and, therefore, of necessarily slight interest, but one of the most characteristic forms of the vasomotor reaction and one which may be manifest nearly from the onset of compression. 2. Various modified forms of the phenomenon occur and may cause confusion, especially when the respiratory periodicity is absent. 3. Periodic movements are no less frequent and characteristic than when the phenomenon occurs in disease and that they may be of diagnostic importance in rendering manifest a paralysis and in being movements which are to be distinguished from those due to focal irritation.

10. **Action of Electrical Discharges on Bacteria.**—Foulerton and Kellas conducted an elaborate series of experiments with the view of determining the action on bacteria of electrical discharges of high potential and rapid frequency. In all the experiments in which a decided germicidal effect was observed it appeared that this was due entirely to the action of substances formed as the result of electrical action on the atmosphere in which the discharge occurred; and it appeared that under the time conditions of the experiments the electrical force employed was not capable of exercising any injurious action on the bacteria tested. And it is probable that when in medical practice cases of lupus and certain other cases in which there is an exposed ulcerated surface are treated by "high-frequency" discharges, the results produced are due entirely to the action on bacteria of nitrous and nitric acids formed in the neighboring air. From a therapeutic point of view the use of high-frequency discharges in such cases must be looked on mainly as an efficient method for bringing germicidal substances in a nascent and very active condition into contact with the bacteria present in the lesion exposed to the action of the discharge.

11. **Hemorrhagic Bronchitis.**—Castellani reports two cases of hemorrhagic bronchitis, the disease having begun gradually and without any apparent cause. The sputum was examined carefully repeatedly for three weeks, but no tubercle bacilli could be found. Several guinea-pigs were also inoculated with negative results. The expectoration, especially when much blood was present, was teeming with spirochetes. The saliva and superficial scrapings from the gum were also examined; some spirochetes were present, but always in small numbers. The spirochetes were always very numerous and stained well by

the Leishman method, generally taking up a bluish tint; they could be stained also with the ordinary anilin dyes, though not so well. They were generally mixed with some bacteria, but sometimes when the sputum was collected in sterile Petri dishes and preparations made at once they were practically the only germs present. Vincent's fusiform bacilli were never observed. These spirochetes were not all alike. They are divided morphologically into several groups: 1. Very thick individually, from 15 to 30 microns in length, with irregular waves which varied in number but were never very numerous. The parasites, with the Leishman method, stained deep blue; they were ponited at both ends. 2. Spirochetes resembling the *Spirochæta refringens* (Schaudinn) with a few graceful waves and pointed extremities. 3. Thin, delicate spirochetes with numerous small, rather uniform waves and tapering ends. Sometimes one of the extremities was blunt while the other was pointed. 4. Very delicate parasites, though thicker than the *Spirochæta pallida*, with very few waves, generally irregular in shape.

Journal of Tropical Medicine, London.

May 15.

16 *The Puru of the Malay Peninsula. (To be continued). T. D. Gimlette.
17 Anatomy of the Biting Flies of the Genera *Stomoxys* and *Glossina*. G. M. Giles.
18 Rhinopharyngitis Mutilans. C. W. Branch.

16. **Puru.**—Under this name Gimlette describes a specific eruptive disease indigenous in the Malay states and attacking, particularly, young children. The sores are scattered over the face, neck, trunk and extremities. The viscera are not attacked. The affection is one of long standing. One attack confers immunity. It is distinct from syphilis.

Revue de Chirurgie, Paris.

Last indexed, page 1652.

19 (XXVI, No. 5.) Sur 2 cas d'angiomes primitifs des muscles striés. P. Reclus and A. Magitot.
20 Cas de calcul de la glande sous-maxillaire. G. Alexandre.
21 *Les hernies et les accidents de travail (hernia and insurance against industrial accidents). P. Berger. (Commenced in No. 4.)
22 *L'occlusion intestinale par l'hiatus de Winslow. E. Jeanbrau and V. Riche. (Commenced in No. 4.)

21. **Hernia and Insurance Against Industrial Accidents.**—Berger has been making a study of the etiology and origin of hernia, especially with regard to the influence of overstrain or accidents while at work. He outlines the conduct for the examining physician in case of an industrial accident, his conclusions harmonizing with the views adopted at the international congress for workingmen's insurance held in Belgium last year, and also with recently published manuals on industrial accidents. In the great majority of cases the hernia is not a sudden accident; it is an infirmity made imminent by some congenital malformation.

22. **Internal Hernia Through the Foramen of Winslow.**—This article is based on personal clinical experience and 18 cases from the literature. When the patient is examined soon after the occurrence of the hernia, a round, circumscribed tumor is noticed in the epigastrium or at the umbilicus, but it soon blends into the increasing general distension of the entire abdomen. This early tumefaction is important for the diagnosis. It may be directly in the center or more toward the right, and its center may coincide with the umbilicus or lie considerably above it, but always below the costal arch. In none of the cases on record was the trouble correctly diagnosed. In some it was overlooked even at the laparotomy. The small intestine is generally involved. The stomach is forced forward and the afferent loops of intestine are distended and held immovable under the liver, high up to the right. No hernial sac is visible except in the rare cases in which the intestine has slipped between the two sheets of the great omentum. When the finger is able to trace the course of the incarcerated intestine, the pulsations of the large hepatic artery can be perceived. In the 11 cases in which an operation was undertaken it proved to be too late to save the patient in all but four instances. An incision into the intestine should be made to evacuate it, after which reduction of the hernia is easy. There is a sheet of loose cellular tissue, between the vena cava and the duodenum, through which it is easy to expose the lower part of the foramen of Winslow after incising the anterior sheet of the lesser omentum over the upper duodenum, parallel to its longitudinal axis.

Semaine Médicale, Paris.

23 (XXVI, No 20.) Du bruit de galop de l'hypertrophie du coeur gauche (of left heart). L. Bard (Geneva).

Revue de Médecine, Paris.

Last indexed, page 1232.

24 (XXV, Nos. 11-12.) Le coeur dans la maladie de Friedreich (the heart). M. Lamuois and A. Porot.
25 Nouveau cas de myasthénia gravis, suivi d'autopsie. Leclerc and Sarvonat (Lyons).
26 *Des crises épileptiformes d'origine pleurale. M. Roch (Geneva).
27 *Les sciatiques radiculaires. L. Lortat-Jacob and G. Sabareanu.
28 Derniere épidémie de fièvre typhoïde et des fièvres gastro-intestinales par auto-infection à Athènes. S. J. Kanellis (Athens).
29 *Le point épigastrique dans l'emphysème pulmonaire et dans les cardiopathies. H. de Brun (Beyrouth).
30 Etude du cancer massif du foie (of liver). H. Girard (Bordeaux).
31 (XXVI, No. 1.) *Recherches expérimentales sur l'influence du sucre sur le travail (Influence of sugar on working capacity). C. Féré.
32 *Les causes morbides prédisposantes en pathologie mentale. E. Marandon de Montyel.
33 Education de la respiration. Son rôle dans la cure d'air. Résultats de 107 cas. M. Faure and C. Reymond.

26. **Epileptiform Seizures of Pleural Origin.**—Roch reviews 54 cases of convulsions suggesting epilepsy in which the inciting cause was some affection involving the pleura. The pleurisy in some cases favored the development of convulsions primarily due to other causes, but in others the pleurisy was evidently the sole inciting cause. This action is manifestly a reflex phenomenon. It was observed unmistakably in 4 well-defined cases. This assumption is also sustained by the cases on record of severe nervous disturbances in pleuritics, independent of operative trauma, such as coughing, hemiplegia or sudden death.

27. **Radicular Sciatica.**—This article discusses the diagnostic and prognostic importance of the topography of the disturbances in the objective sensibility in the course of sciatica, neuralgic, neuritic or radicular. In the 6 cases of the latter variety reported in detail with diagrams, 3 of the patients were syphilitics, 2 alcoholics and 1 tuberculous. In sciatic neuralgia and neuritis the trunk of the nerve is altered or compressed at some point, and the sensory disturbances are of the segmentary type. In addition there is a type of sciatica due to alteration of one or more of the roots which constitute the sciatic nerve.

29. **"Epigastric Point" in Emphysema of the Lungs.**—De Brun calls attention to the painful point observed in heart affections or with disturbances in the pulmonary circulation. The right ventricle can not become dilated without causing pain, whether the dilatation is due to emphysema of the lung or to a mitral lesion. This tenderness, De Brun states, is thus a valuable, hitherto unappreciated, symptom of something wrong in the right ventricle from disturbances in the pulmonary circulation. Fifty-four case histories are summarized to sustain this view. The first refers to a woman of 67 who had suffered for ten years from a singular and severe gastralgia. All kinds of treatment had been instituted without relief. There was no dyspnea, but there were evidences of pronounced emphysema of the lungs, and the gastralgia was aggravated by everything that would aggravate a cardiac lesion. Under the influence of potassum iodid relief was obtained within twenty-four hours, with a permanent cure of the gastralgia. Sixteen years's experience has confirmed this connection between the pain in the stomach and some disturbance in the pulmonary circulation, and the prompt relief under potassium iodid or heart tonics. The pain is usually in the upper part of the epigastric region. The sensation is sometimes that of oppression, tension and a dull pain, sometimes extremely intense pain, radiating to the lower part of the back. The pain is permanent and is usually aggravated by reclining, and it is always increased by pressure. It is also always accompanied by hypertrophy of the right heart and pulsation visible in the epigastrium. It may accompany or just precede asystolia.

31. **Influence of Sugar on Working Capacity.**—The results of Féré's extensive experiences may be summarized in the

statement that sugar has a stimulating action, but, like all stimulants, its use is followed by a period of depression. Sweets for dessert stimulate digestion and disguise the fatigue of digestion, but it is a question whether there is not a deficit left after this transient stimulation.

32. **Causes of Mental Pathology.**—De Montyel recognizes six conditions alone as able to cause a mental affection, and then only in the predisposed. They form three groups: 1, the infectious group, with typhoid fever and chronic malaria; 2, the toxic group, with chronic alcoholic and lead poisoning, and 3, the physical group, with traumatism of the skull and sunstroke.

Archiv f. klinische Chirurgie, Langenbeck's, Berlin.

Last indexed, page 1568.

34 (LXXVIII, No. 4.) *Infektiöse und krebsige Geschwülste an den äusseren Geschlechtsorganen des Hundes (cancer on external genitals of dogs). A. Sticker.
35 *Zur Kasuistik und Histologie des Hautkrebses (superficial cancer). H. Coenen.
36 *Fall von erworbener Elephantiasis der Kopfschwarte (of scalp). G. v. Saar.
37 Zur Wangen-Plastik (of cheek). T. Meissl.
38 Ueber kongenitale Luxation, sowie angeborenen Defect der Patella, combiniert mit Pes varus congenitus. P. Ewald.
39 *Ueber die experimentelle Pankreas-Erkrankungen. H. Guleke.
40 Ueber intraabdominale Hernien und iliacale Bauchfelltaschen (pockets in omentum). Krumm.
41 *Plastische Operationen an den Ohren (Stellungsverbesserung, Verkleinerung) (to improve shape, etc., of ear). E. Payr (Graz).
42 Die Brüche der Tuberositas ossis metatarsi V. und des Processus posticus tali und ihre Beziehungen zum Os vesalianum und Trigonum (study of fractures). Lilienfeld.
43 *Beitrag zu den Total-Luxationen der unteren Halswirbelsäule (lower cervical vertebræ). F. Steinmann (Berne).
44 (LXXIX, No. 1.) *Tuberculose der Thorax-Wand mit bes. Berücksichtigung der Rippen-Tuberculose auf Grund klinischer Beobachtungen. F. König.
45 *Spät-Resultate nach complicierten Schädelbrüchen (fractures of skull). F. Brewitt (Körte's service, Berlin).
46 Enterokystome und ihre chirurgische Bedeutung. F. Colmers.
47 Versuche ueber Händedesinfection. Schumburg.
48 Die Intermediär-Operation bei acuter Appendicitis. Sprengel.
49 *Zur Technik der Intravesicalen Operations-Methode. B. Klose.
50 *Fall von Enterocele; Resection des Darms nach eigenem Verfahren. I. Antonelli.
51 *Test for Chlorin in Urine.—Einfaches Verfahren zur approximativen Bestimmung des Chlor-Gehalts im Urin. G. Ekehorn.
52 (No. 2.) Die angeborenen Fisteln der Unterlippe und ihre Entstehung (congenital fistulas of lower lip). A. Stieda.
53 Die Lymphunglectasie der Leiste und andere Folgeerscheinungen der Lymphstauung (congestion of lymph in groin and its consequences). H. Gross. (Concluded.
54 *Ueber Myelomatose, Leukämie und Hodgkin'sche Krankheit. R. Hoffmann.
55 *Experimentelle Beiträge zur Lehre des Verbrennungstodes (fatal burns). A. Helsted.
56 *Das hypernephroide Carcinom und Sarkom. Zur Lehre der von versprengten embryonalen Keimen ausgehenden malignen Geschwülste. H. Neuhäuser.
57 *Ueber operativ behandelte subcutane Verletzungen des Magendarmcanals (injuries of stomach or intestines). E. Voswinckel.
58 Zur Behandlung peripherer Aneurysmen. O. v. Frisch (von Elselsberg's clinic, Vienna).
59 Zur Erklärung der Explosions-Schüsse (exploding shots). Hildebrandt.
60 Zur Casuistik des Echinococcus der verschiedenen Organe und Gewebe des menschlichen Körpers. A. Kablukoff (Simferopol).

34. **Cancer on Genitals of Dogs.**—Sticker reviews the literature on the subject of malignant tumors on the external genitals of dogs, and shows that the tumors observed by various writers were all practically of the same type, round-celled sarcomas. While ordinary infectious processes start in the mucosa, as a rule, the sarcoma always develops from the submucosa and is solitary. Several instances are known of transmission of the sarcoma by coitus, but this may have been due to contact transplantation of tissue in some excoriation, and can not be used as an argument in favor of the contagious nature of the affection. Spontaneous transplantation under these circumstances is favored by the superficial location of the sarcoma and its tendency to break through to the surface. Sticker observed several instances of the healing of a transplanted sarcoma, while in the controls the sarcoma progressed to a fatal termination. He affirms that this is the first time that it has been demonstrated experimentally that cancer can heal spontaneously. Animals who thus spontaneously recovered from their malignant growth were not susceptible afterward to further transplantation, but acquired active immunity to cancer. The malignant growth can be transmitted to another animal only by transplantation of the intact cells of the growth, while an infectious process can be transmitted by inoculation with the virus, free from cells. Infectious processes induce metastasis only by way of contact infection, but a sarcoma may develop metastasis in any of the internal organs.

35. **Superficial Cancer.**—In Coenen's first case, the patient, a woman of 79, presented a carcinoma on the right cheek near the nostril, and a second, entirely separate, carcinoma on the left cheek just below the eye. In 6 other cases observed in the clinic, and in several others reported in the literature, multiple carcinomas were observed on the face and neck. Seborrheic eczema of the face seems to favor the development of multiple cancers, as also working in paraffin and in tar. In the second case illustrated an adenocarcinoma had developed on the chest of a man of 69, at about the third rib. The few similar cases of cancer on the trunk are reviewed and the pathogenesis discussed.

36. **Elephantiasis of the Scalp.**—Under the influence of repeated trauma a small tumor developed on the side of the brow and head which gradually assumed the characteristics of acquired elephantiasis.

39. **Experimental Pancreas Affections.**—Guleke has been studying on a large number of dogs the affections of the pancreas induced by injection of oil, bile or blood, in the outlet of the pancreas, or by ligature of its blood vessels. The resulting disturbances closely resembled those of acute pancreatic affections in man. The essential feature in all seemed to be necrosis of the pancreas. The intensity and the extent of this necrosis were the decisive factors for the course of the affection. The hemorrhages, especially the so-called apoplexies, were more or less subordinate features, although of the greatest importance in the etiology. His experiments further demonstrated that in acute necrosis of the pancreas death is due essentially to intoxication with trypsin. In the chronic cases the disturbances are more in the nature of those observed after extirpation of the pancreas, but in the acute cases everything points to trypsin intoxication. This assumption is confirmed by the fact that it proved possible to immunize dogs against trypsin intoxication and against transplantation of pancreas tissue, otherwise fatal.

41. **Cosmetic Operations on Ears.**—Payr has had gratifying results in operations undertaken to reduce the size of overprominent ears. The special features of his technic are the excision of a vertical, sickle-shaped piece of cartilage from the back of the ear, the outer edge parallel to the rim of the ear. The next step is the partial detaching of a broad horizontal strip at right angles to the first, its base being left attached. This strip is turned back and drawn under a bridge flap cut in the periosteum of the mastoid process. By traction on this flap the ear is drawn back more nearly parallel to the head. The cross-shaped defects left in the ear are sutured and the skin over them, thus materially reducing the size of the ear and bringing it back parallel to the head. The pieces of cartilage are easily mobilized and the excess of skin left in front by the reduction in size was soon taken up by the growth of the child in his cases. Fifteen illustrations accompany the article.

43. **Total Luxation of the Spine.**—Steinmann has found records in the literature of 19 cases of total luxation of the spine between the second and seventh cervical vertebræ without irreparable injury to the spinal cord. He gives a summary of each and then describes a case personally observed. There were no signs of paralysis of the limbs, rectum or bladder in his patient, and no disturbances in swallowing or breathing, and yet radiography and the position of the head, etc., indicated total forward luxation of the fifth cervical vertebra with fracture of the sternum. In all the cases the accident had been a fall or blow on the head or back of the neck. In 4 of the cases the paralysis vanished at once when the luxation was reduced. In only one of the 20 cases did partial paralysis persist. In 12 the attempt at reduction proved successful; in one case the luxation was reduced under mere orthopedic measures, and in 7 no attempt at reduction was made. Six of this latter group remained permanently free from paralysis, although much hampered by the abnormal position of the head and restriction to movement, the condition growing constantly

worse instead of better. Steinmann concludes from his analysis of all this material that in all recent cases the dislocation should be reduced whether there are signs that the spinal cord is injured or not. But as it is often impossible to distinguish whether the luxation is accompanied by fracture or not, the technic should be such as to do no harm in case of fracture. The spine should be stretched with lengthwise extension and then a very slight push backward or bending of the upper part of the spine will generally bring the parts into place or they spring into the proper place spontaneously. In no event must the pathologic position of the dislocated vertebra be aggravated, as this is liable to compress the spinal cord still more. Anesthetics are contraindicated when there are disturbances in respiration owing to injury of the roots of the phrenic nerve by a high luxation. On the other hand, anesthesia facilitates palpation and aids in relaxing the muscles for the extension. When the luxation is more than a few days old, the possibility of fibrous adhesions should make the surgeon hesitate about interfering. If, however, the spinal cord is known to be intact, simple extension could scarcely do harm, although no attempt at reduction of an old luxation of the kind is on record. It might be possible to remove the spinous process and part of the dislocated vertebra—a procedure which Steinmann is ready to undertake in his case if conditions become aggravated by callus formation and subsequent compression of the cord. Lengthwise extension can be done with confidence, as the ligaments in these parts stand great traction without laceration; even in children, tearing of the ligaments is the rarest exception. The danger of transportation and of delay impose it as a duty on the attending physician to reduce the dislocation at once, even when there are signs of injury of the cord. The article is illustrated.

44. **Tuberculosis of Thorax Wall.**—König's article is based on 110 cases. No age or sex seemed to predominate. He gives summaries of all the cases and insists on the necessity for removal of the focus into sound tissue, as in treating a malignant growth. Four of the patients succumbed during or soon after operation, but 73 were dismissed cured and known to be in good health for some time afterward. In 33 cases the patients left before the wound had entirely healed. The cases in which the lesion was under the breast sometimes required several operations before a complete cure was finally attained. The breast had to be turned back or amputated. He always dusted the defect with iodoform before closing the wound, with or without drainage or gauze packing. The wire saw was sometimes found useful. Resection of the cartilage generally proceeded more easily when the incision was made with the knife down on an elevator introduced beneath.

45. **Remote Results After Complicated Fractures of the Skull.**—Brewitt studies here the remote results in 72 cases of complicated fracture of the skull in individuals between 2 and 65 years of age. All but 7 were males. Ten of the patients succumbed to their injury, and 2 still had slight symptoms when dismissed, but 60 were freed from all disturbances. Of the latter group 41 have been examined again recently. Of the 38 patients treated by reimplantation 24 are in good health, 2 have slight and 2 such severe disturbances that they are unable to work. None has developed epilepsy. In the 4 patients treated by a secondary plastic operation, 3 are in good health, but 1 has considerable trouble. An open defect in the skull was left in 30 cases, and only 9 of these patients are in good health to-day; 2 have slight and 1 severe disturbances; 1 has epilepsy and 8 have succumbed to the consequences of their injury, while 9—all free from disturbances when dismissed—have been lost from sight. The reimplantation technic here, as in the experience of others, has maintained its supremacy. The aim should be to close a recently acquired defect in the skull as soon as possible, for the remote results in patients thus treated are much better than in those whose defect in the skull healed without attempt at closure. There is grave danger of injury to the exposed tissues from the ordinary trifling accidents of daily life, and the brain in such cases is less resistant to injury than under other conditions. The finest results were attained when the defect was closed with the fragments recently torn out.

49. **Intravesical Operating.**—Klose has modified the Nitze method of removing tumors in the bladder with the electrocautery. His snare is light and larger than the size of the tumor. Being made of steel, it stands traction well. He turns on the current for two or three seconds and then turns it off, repeating this alternately until the tumor has been entirely detached and drops off. The advantage of this rather tedious technic is the avoidance of all hemorrhage. He gives illustrations of his modified instrument and of a large tumor removed with it without the loss of a drop of blood.

50. **Enterocele.**—Antonelli describes his technic, which he styles the "perfecting of the familiar Murphy method." He reports its sucessful application in a case of circumscribed peritonitis with adhesions, the loops of the intestine involved being at the same time confined in an inguino-scrotal hernial sac.

51. **Test for Chlorin in Urine.**—Ekehorn uses a graduated glass tube about 15 mm. in diameter and 22 cm. long. The first line is engraved at the point corresponding to 2 c.c. of urine, and is marked U. Another line above is marked 1 and corresponds to 1 c.c. of the indicator. The third line is marked zero, and corresponds also to 1 c.c. The tube is graduated above this with lines marking the cubic centimeters up to 55 c.c. Two c.c. of the urine are placed in the tube and 1 c.c. of the indicator, up to the line I. The second reagent is then added until the tint changes. The test is a modification of Volhard's titration test.

54. **Myelomatosis, Leukemia and Hodgkin's Disease.**—Hoffmann defines myelomatosis as the multiple development of malignant tumors in the bone marrow, originating in hyperplasia of one of the cellular elements of the mother soil (lymphocyte, myelocyte, plasma cell). The tumor does not show the characteristics of the mother soil. Leukemia he defines as an affection of the blood, the prominent features of which are the increase in the lymphadenoid tissue as well as in certain groups of the white corpuscles. The hyperplasia in the lymph glands and bone marrow maintains the type of the fundamental tissue, and hence the increased output of the round cells in question. The morbific agent is similar to or the same as Flexner's lymph, spleen or myelo-toxin. As the first two or the third predominate there is a lymphocyte or a myelocyte leukemia. The hyperplasia of the lymphadenoid and the myeloid tissue is the expression, he states, of efforts at compensation or formation of antitoxin. Pinkus' pseudoleukemia with relative lymphocytosis and the histologic picture of leukemia must be regarded as a form of lymphocyte leukemia in which the overproduction just covers the loss of lymphocytes. Hodgkin's disease, on the other hand, consists in inflammatory hyperplastic processes in the lymphadenoid tissue, destroying its structure. No specific changes in the blood picture follow. The increase of the round cells, with the partial alteration of their types, eosinophiles, plasma cells, etc., and the profuse formation of connective tissue, may lead to the formation of large tumors.

55. **Prevention of Death from Otherwise Fatal Experimental Burns.**—Helsted announces that preventive artificial anemia of the region of a burn was able to prevent the death of the animal in his numerous experiments, within certain limitations of temperature. His examination of the blood in 30 cases of severe burns showed that determination of the proportion of hemoglobin is an important aid for the prognosis. In all the extensive fatal burns pronounced hemoglobinemia was observed, and it was present in slighter extent in all the cases of extensive burns showing impairment of the general health. In case of extensive burns without much effect on the general health, no hemoglobinemia was apparent. In his experimental work he found that an isolated lesion of the blood caused the same hemoglobinemia, hemoglobinuria and ventricular hemorrhage as in case of extensive cutaneous burns. For this isolated lesion of the blood he withdrew 10 c.c. of blood from the carotid artery of a rabbit and heated it in the water-bath to 60 C., then cooled it to body temperature and reinjected it into the artery. The effect on the rabbit was apparently the same as that of a severe fatal superficial

burn. When an Esmarch tourniquet was applied to the legs of a rabbit and the femoral arteries and veins were ligated, and the legs were then held in water at 60 C. for three minutes, the animals survived, with little disturbance, while all the controls, without the artificial anemia, succumbed in a day or so. The metabolism declines when part of the blood has been heated to the coagulating point of the fibrinogen. Numerous other experiments are related and an extensive bibliography on the subject of death from burns is appended.

56. **Hypernephroid Carcinoma and Sarcoma.**—Neuhäuser has been studying the collection of kidney tumors in the Jewish hospital at Berlin, 103 in all. No less than 69 belong to the group of hypernephromas. In 2 he found unmistakable evidence that true carcinoma had developed out of a hypernephroma. Displaced suprarenal germinal matter had lodged in the kidney in early embryonic existence, a hypernephroma had developed from this, and the carcinoma from the parenchyma of the hypernephroma. Neuhäuser is far from maintaining that embryonal displacement of germinal matter is the only cause of these cancers, but in these cases it was evidently the first embryologic cause, without which these carcinomas would never have developed. The same applies also to some cases of sarcoma developing in a hypernephroma which are in the collection. The sarcoma had developed from the stroma. Clinical details of the 9 cases with hypernephroid malignant growths are given in conclusion. There are three colored plates of the histologic findings.

57. **Operative Treatment of Contusion of Abdomen.**—Voswinekel gives the particulars of 17 cases of subcutaneous injury of the digestive tract in which an operation was done. He declares that the lesson learned from this experience is that operative treatment is imperative at the earliest possible moment when there is a probability that the stomach or intestines have been injured by a contusion. If the shock is too pronounced for immediate operation, every effort must be made to bring the patient out of the shock, with restoratives and saline infusion. Every moment lost adds to the danger of the development or progress of the almost inevitable peritonitis. Besides the signs of shock, the most important indication of a subcutaneous injury of stomach or intestines is the intense painfulness on pressure, generally at the injured point, and the rigid tension of the rectus muscles with the abdominal walls flat or drawn in. In case of small circumscribed injuries, it may be sufficient to suture the wound in the intestine and to reinforce it with serosa drawn up over it, but in case of extensive injury it is better to resect the injured portion. Even if the patient is not seen until after the peritonitis is established, an operation is always justified, although the prospects of saving life are then small. Careful rinsing out of the entire abdominal cavity with large amounts of sterile salt solution should never be omitted, he adds, as this is the only means of cleansing the peritoneal cavity of infectious material. Even if this is not entirely accomplished, yet in the larger proportion of cases the peritoneal cavity can thus be flushed out and the peritoneum left in condition to take care of the rest.

Berliner klinische Wochenschrift.

61 (XLIII, No. 10.) Coincidence of Changes in Size of Heart and Changes in Pulse.—Zusammenfallen von Volum-Veränderungen des Herzens mit Veränderungen des Pulses. M. Heitler.
62 Zur Kenntnis der Spirochæten. W. Loewenthal.
63 Zur Symptomatologie der Paralysis agitans. M. Mosse.
64 Destruction of Both Eyes of a Tramp by Maggots.—Die Zerstörung beider Augen eines Menschen durch Fliegenlarven. Schultz-Zehden.
65 *Blood and Hemorrhages in Case of Affections of Digestive Tract.—Blut und Blutungen bei Verdauungs-Krankheiten. C. A. Ewald. (Concluded).
66 Ueber aktive Lymphocytose und Lymphocyten. (Concluded.) A. Wolff-Eisner.
67 Guide for Introducing Cystoscope.—Eine Leitvorrichtung zu Nitze's Kystoskop. C. Posner.
68 Importance of Infection for Infants.—Die Bedeutung der Infektion für den Neugeborenen und Säugling. H. Salge.

65. **Blood and Hemorrhages in Affections of Digestive Tract.**—Ewald has not been able to detect any characteristic formulas for the blood in diseases of the digestive tract. He states that the discovery of "occult" or invisible hemorrhage, in the stomach contents or in the feces, is a valuable aid in the differentiation of ulcer of the stomach and cancer, and cites a number of instructive examples from his own experience. He has not had very favorable results from the use of gelatin, adrenalin, etc., in treatment of gastric hemorrhage, but reports that he was able to arrest recurring profuse hemorrhage by rinsing out the stomach with ice water. Eight patients thus treated were much debilitated from the hemorrhages and all other measures had failed. As a last resort before calling on the surgeon, a small amount of morphin was injected, the throat was cocainized to prevent retching or vomiting from reflex irritation, and ice water was then poured in through the stomach tube. The tube was introduced only just past the cardia so as not to irritate the walls of the stomach. As more ice water was poured in the tube was pushed in a little farther, until the water flowed out clear from blood. It was astonishing how much blood-stained water was obtained in this way, with numerous clumps of blood, but the hemorrhage was definitely arrested. As blood in these cases passes into the intestines and decomposes there, he flushed out the intestines to prevent irritation from this source. In case of collapse he injects camphorated ether, 1 to 6, with enemas of wine with egg or peptone, and hot compresses to the hands and feet. In case of threatening hemorrhage with small pulse, anemic heart sounds and anemia of the brain, saline infusion is indicated. By introducing the saline solution through two needles at the same time, and massaging away the fluid as it enters, it is possible to inject as much as a liter of water in a very short time. He prefers the subclavicular region for the injection. The blood regenerates quite soon in favorable cases. The results to date of operative treatment of gastric hemorrhage are not very promising. Better prospects are opened by the recent announcement that gastroenterostomy is able to arrest hemorrhage and to prevent its recurrence, even when the actual source of the bleeding is not discovered. This result may be due to postoperative contraction of the dilated stomach. Hemorrhages from the lower rectum, especially hemorrhoidal, are very easily controlled. Cold sitz baths or introduction of pieces of ice or injection of ice water generally arrest them, and the tendency can be combated by astringent injections or applications. External nodules can be treated with an ointment of chrysarobin 0.8 gm.; iodoform, 0.3 gm.; extract of belladonna, 0.6 gm; and vaselin, 15 gm., rubbed in several times a day, the internal nodules with suppositories of the same. Each suppository consists of: Chrysarobin, 0.08 gm.; iodoform, 0.02 gm.; extract of belladonna, 0.01 gm., and cocoa butter to 2 gm. Two such suppositories are used daily. This not only arrests the tendency to hemorrhages, but shrivels and reduces the sensitiveness of the nodules. A frequent source of anemic conditions is afforded by continuous bleeding from unsuspected hemorrhoids high in the rectum. The stools do not show the presence of blood except by microscopic and chemical tests. Ewald has had good results in obstinate hemorrhoidal hemorrhages from the internal use of a mixture of coagulating, astringent and laxative drugs, calcium oxid, bismuth gallate, senna, etc.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

69 (XXXII, No. 14.) *Behandlung des Pleuraempyems. H. Braun.
70 *Praxis und Theorie des Ueberdruck-Verfahrens (over-pressure technic). L. Brauer.
71 *Die operative Behandlung der Hypertrophie und des Carcinoma der Prostata. H. Kümmell.
72 *Zur Radikalbehandlung der Colon-Carcinome. A. Neumann.
73 Erfahrungen ueber Bauchschusswunden (abdominal firearm wounds). A. Brentano.
74 *Zur Frage des ersten Transportes Schwerverwundeter (first transportation of the severely wounded). F. Colmers.
75 2 Bemerkenswerte Fälle von Gehirn-Chirurgie (of brain). Amberger.
76 (No. 15.) *Ein neuer Vorschlag zur Erzielung keim-freier Operationswunden (aseptic operating). A. Döderlein.
77 Ueber Lokalanästhesie in der Otochirurgie. H. Neumann.
78 *Ueber Perforation der Harnblase bei Ausschabung derselben (curetting bladder). C. Stern.
79 *Ueber chirurgische Behandlung der Ischias (sciatica). A. Pers (Copenhagen).
80 Incision in the Esophagus.—Ein Speiseröhrenschnitt. R. Burmeister.
81 Hemolytic Biologic Differentiation of Albumin.—Zur forensischen Eiweiss differenzierung auf Grund der hämolytischen Methode mittels Komplementablenkung, nebst Bemerkungen ueber die Bedeutung des Präzipitates für dieses Phänomen. E. Friedberger.

82 *Die Erbdisposition in der Phthise-Entstehung; ihre Diagnose und Behandlung (inherited predisposition). C. Spengler.
83 Further Experiences with Ultra-violet Light Treatment.—Weitere Erfahrungen ueber Uviolbehandlung, sowie einen neuen Apparat zur Bestrahlung des ganzen Körpers mittels ultra-violetten Lichtes (Uviolbad). Axman (Erfurt).

69. **Treatment of Empyema of the Pleura.**—Braun states in the course of this clinical lecture that he does not believe that puncture and aspiration are sufficient to cure empyema in the pleura, as a rule. An incision with resection of a piece of rib from 4 to 6 cm. long will provide much better conditions for evacuation of the pus and final healing. Ether is contraindicated by the usually coexisting bronchitis. In case of much dyspnea or debility, or if the pulse is weak and bad, general anesthesia must be avoided as it is liable to prove fatal at the time or soon after. Infiltration anesthesia will be found useful in these cases, as also for other adult patients who are not too timorous. None of the valve cannulas to prevent pneumothorax has proved effectual. To promote the expansion of the lung during the healing of the empyema chest gymnastics are needed. Braun urges his patients to blow a trumpet or to blow up an air cushion, or something of the kind, to insure deep expirations. Sometimes healing is delayed by suppuration in narrow passages leading upward, and they should be curetted or have 10 per cent. iodoform glycerin injected. In tuberculous empyema the indications are the same as under other circumstances if the patient is in good condition otherwise. Even in advanced pulmonary tuberculosis repeated tapping will bring great relief. Evacuation of the pus through the back, in the seventh or eighth interspace, with injection of 15 or 20 c.c. of 10 per cent. iodoform glycerin is liable to keep the patient in good condition for a long time. The injection can be repeated when the iodin has disappeared from the urine, which is generally in from two to five weeks. In case of bilateral empyema it is wise to wait until the patient has recovered from the operation on one side and the lung has expanded once more, before attempting intervention on the other side. He has thus treated and cured 2 patients. In case of an old empyema in a child, he advises injection of salt solution or of iodoform or carbolic acid, glycerin or hydrogen dioxid, which may cure without the necessity for more extensive operative measures. When the apex of the pleural cavity is involved, the operation may have to be in several stages with long intervals. The resection of the thorax, however, gradually restored the patient to almost normal health and strength if the empyema was not tuberculous. Such an extensive operation as resection of the thorax should not be attempted in case of a tuberculous process unless the patient is in good general condition.

70. **Practice and Theory of the Overpressure Technic for Operations in the Thorax.**—Brauer describes the mode of action of the underpressure and overpressure methods of maintaining the respiratory functions of the lungs unimpaired when the thorax is opened. The effect on the blood vessels is the same, he shows, whether the lungs are kept expanded by compressed air or by being opened up in rarefied air. The criticisms of one technic apply equally to the other, but the general results, on the whole, he thinks, are more favorable with his overpressure technic than with the Sauerbruch underpressure pneumatic cabinet.

71. **Treatment of Hypertrophied Prostate.**—Kümmel has had extensive experience with various methods of treating enlarged prostate. He has abandoned the operations of castration, resection of the vas and ligation of the afferent vessels, and now operates directly on the prostate by the high cut or perineal route. If these operations are refused or the general condition does not permit, he applies the Bottini technic. He remarks that spinal anesthesia is particularly suited for prostatectomy, and has materially reduced the dangers of the radical operation for hypertrophied or cancerous prostate. Hypertrophy of the prostate is generally progressive, and it soon proves impossible to introduce the small catheter which at first passes readily. For this reason, and also to aid in keeping the pasage open, he commences with quite a stout catheter, leaving it in place for several days in case of retention from enlargement of the prostate. If spontaneous urination does not follow its removal he introduces it again for another trial. If this also fails he advises operative interference. He remarks that the "catheter life" is never a long one, as the patients soon succumb to pyelonephritic and septic processes, as a rule.

72. **Radical Treatment of Carcinoma of Colon.**—Neumann has been much gratified with the results in 6 cases of carcinoma of the colon which he treated by first clearing out the bowel and later resecting the malignant process. He made an opening into the cecum in most cases, evacuated it, and prepared the bowel for the resection by injections and purgatives, the site and movability of the cancer being thus absolutely determined before attempting the secondary resection. The particulars of all his cases are given and also of 2 others treated by a different technic, with the death of one patient. He gives an illustration of the two skin flaps with which he closed the artificial anus when it was no longer needed. In one case the opening into the cecum was made Nov. 1, 1904; the left flexure in the colon was resected November 21, and in January, 1905, the fistula into the cecum was closed by a third laparotomy, and the patient left the hospital in apparently perfect health. In September she returned with a very large metastasis in each ovary and disseminated nodules on the serosa of the intestine. The ovarian tumors were removed by a fourth laparotomy, in October, 1905, and the patient has since been subjectively well. He followed Mickulicz's technic in 3 cases of cancer of the sigmoid flexure, with the complete cure of the patients to date. The results of thus operating in several stages far surpass those obtained by other less tedious technics, even although it may prove impossible in some cases to insure the final healing of the fistula into the intestine.

74. **First Transportation of the Wounded.**—Colmers was at Charbin and soon learned that any attempt to remove the wounded soldiers severely injured in the abdomen was almost certain death. On the other hand, they almost invariably recovered when left undisturbed except for the necessary operative measures. He consequently advises that the wounded of this class should be left on the battle-field after being made as comfortable as possible, the spot where they lie marked with a pennant, or a light tent set up over them. After all the other wounded have been carried off the field these wounded may be collected into one or more central points, and in case the army is retreating, be entrusted to the care of the enemy or left in charge of a physician and nurses. Many of the severely wounded in the late campaign would have recovered if they could have been spared the fatal transportation. He adds that the surgeon's time at first is better employed in tending a large number of slightly and moderately wounded men than in spending the same time in caring for one or two of the very seriously wounded.

76. **To Insure Asepsis in Operations.**—Döderlein has been investigating the bacteriologic findings under the latest improved aseptic technic. He has a number of sterile cotton pledgets ready in test-tubes, and during the course of the operation these pledgets are taken up with forceps and used as a swab to wipe off some part of the wound, instruments or operator's hands. The pledgets are placed at once in liquefied agar, which is then poured out on Petri dishes with the pledgets. In 5,000 such tests he found that even when gloves, masks and other modern devices to insure asepsis had been used, yet the bacteriologic findings were always positive. He advises others to make these tests now and then to verify the asepsis of their technic. The folds in rubber sheeting, rubber rings on vials, etc., are liable to harbor germs in large numbers even after supposed complete disinfection. After eliminating all these sources of germs he discovered that the patient's own skin was the perennial source of germs notwithstanding most careful preliminary disinfection. Asepsis on the part of the operator and instruments always encountered this nest of bacteria on the patient's skin. To prevent trouble from this source he now paints the skin with an impermeable coating of rubber. He found that collodion, celluloid dissolved in acetone, and similar varnishes cracked away from the skin as they dried, and left the edges of the wound exposed. This disadvantage he obviated by using a special mixture of rubber

with formalin, benzine and ether. The skin is cleansed, shaved and painted with tincture of iodin. It dries in a couple of minutes, when the rubber mixture is applied and dusted with talcum powder, which is brushed off again. The skin is then found covered with a very thin, clinging, impermeable membrane. Tests after an operation in which the field is thus protected show that there are no more germs than when the operation was begun. The organism is thus spared the struggle with germs introduced from the skin, while careful technic excludes germs from the exterior.

78. **Perforation of Bladder During Curetting.**—Stern describes a case of perforation of the bladder wall with a catheter curette. The patient was a thin woman of 57; the operation had been undertaken for the removal of a papilloma in the inflamed bladder. The distance had been carefully measured and the curette was introduced very cautiously, under chloroform, but almost at once the tip could be felt close under the abdominal wall. He advises against attempting to curette the bladder without opening the organ above. High incision allows oversight of the field and has direct curative action. It also prevents the bladder from contracting and thus favoring perforation.

79. **Successful Simple Surgical Treatment of Sciatica.**—Pers reports 2 very severe, old and obstinate cases of typical sciatica completely cured by surgical intervention. He exposed the sciatic nerve and found that it appeared red and dull, instead of presenting its usual shiny, ivory aspect. This appearance was due to the presence of a fine network of connective tissue fibers completely encircling the nerve and pinning it down. This network extended down to the junction of the middle and lower thirds. He cautiously removed this network, thus releasing the nerve and restoring its normal aspect. The diagnosis was perineuritis resulting from an extinct or existing neuritis. In both cases the patients were completely freed at once from all their neuralgic troubles.

82. **Diagnosis and Treatment of Inherited Predisposition to Phthisis.**—Spengler styles the inherited syphilitic taint the one important inherited predisposition to consumption. The syphilitic taint may be so slight as not to be recognizable by ordinary diagnostic aids. It may date from the third or fourth preceding generation, he states, but it can be detected by the tendency to interposed harsh breathing (Rauschen). The inspiration begins with vesicular breathing, but this ceases abruptly and is followed by harsh breathing as the inspiration continues, followed by normal or vesico-bronchial expiration. This interposing of the harsh breathing is extremely characteristic. The anatomic basis of the sound is proliferation of the connective tissue or hypertrophy of a cirrhotic lung, similar to the hypertrophic cirrhosis of the syphilitic liver. Another sign of this latent inherited syphilis is the tendency to scaling after injection of his Perlsucht tuberculin. He has noticed further that all persons with a tendency to rachitis exhibit the same harsh breathing and scaling, and this has convinced him that rachitis is the result of syphilis in some preceding generation. Other signs of this special predisposition are a tendency to snoring breathing; the lack of proportion between the extent of the physical signs of tuberculosis and the slight general manifestations; the early and predominant tuberculous involvement of the larynx, especially in case of existing diabetes in comparatively young subjects; the obstinate anemia unexplained by the pulmonary affection, and the intense hyperleucocytosis in the sputa with disintegration of the nuclei. He presents evidence to prove that it is easy to control this predisposition and, by holding it under control, to remove the factors that favor progression of the tuberculous infection. He accomplishes this by means of the percutaneous administration of iodin, rubbing it into the skin in the form of a salve. Iodin internally is ineffectual. The characteristic symptoms rapidly subside under this treatment, supplemented perhaps by inunctions with corrosive sublimate. As these symptoms subside the conditions predisposing to tuberculosis are banished. He has been able to cure 100 per cent. of his patients with tuberculosis in the early stages by combining this iodin with his bovine tuberculosis tuberculin treatment. The leucocytes of these *Erbdispositerter*, as he calls them, are less bactericidal than normal leucocytes, and it is exceptionally hard to confer agglutinating properties on their serum. After adequate iodin treatment, however, these differences from the normal are no longer seen.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE PRACTICAL MEDICINE SERIES, Comprising ten volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. III. The Eye, Ear, Nose and Throat. Edited by C. A. Wood, C.M., M.D., D.C.L., A. H. Andrews, M.D., and T. P. Head, M.D. Series 1906. Cloth. Pp. 368. Price, $1.50. Chicago: The Year-Book Publishers.

INTRODUCTION TO MATERIA MEDICA AND PHARMACOLOGY, Including the Elements of Medical Pharmacy, Prescription Writing, Medical Latin, Toxicology, and Methods of Local Treatment. By O. T. Osborne, M.A., M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the Yale University. Cloth. Pp. 167. Price, $1.00 net. Philadelphia: Lea Brothers & Co., 1906.

HEALTH'S MANUAL OF MINOR SURGERY AND BANDAGING for the Use of House Surgeons, Dressers and Junior Practitioners. Thirteenth Edition. Revised by B. Pollard, F.R.C.S., Surgeon to University College Hospital, and Teacher of Operative Surgery in University College, London. Cloth. Pp. 409. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

COLLECTED STUDIES ON IMMUNITY. By Prof. P. Ehrlich, Privy Councilor and Director of the Royal Institute for Experimental Therapy, Frankfürt, Germany, and by his Collaborators. A Chapter written expressly for this Edition by Professor Ehrlich. Translated by C. Bolduan, First Edition. Cloth. Pp. 586. Price, $6.00. New York: John Wiley & Sons, 1906.

DISEASES OF THE NOSE AND ITS ACCESSORY SINUSES. By H. L. Lack, M.D., F.R.C.S., surgeon to the Throat Department of the London Hospital and Lecturer on Diseases of the Throat to Its Medical College, etc. With 124 Illustrations. Cloth. Pp. 399. Price, $8.50 net. New York: Longmans, Green & Co., 1906.

CONSUMPTION, Its Relation to Man and His Civilization. Its Prevention and Cure. By J. B. Huber, A.M., M.D., Fellow of the New York Academy of Medicine; Member of the National Association for the Study and Prevention of Tuberculosis. Cloth. Pp. 536. Price, $3.00 net. Philadelphia: J. B. Lippincott Co., 1906.

DIE HAMORRHOIDEN, ihre Ursachen, Symptome und Behandlung. Gemeinverständliche Darstellung. By Dr. F. Kuhn dirigierendem Arzt am Elisabeth-Krankenhaus in Kassel. Mit 20 abbildungen in Text. Paper. Pp. 65. Price, 2 marks. Munich: Verlag der Aerztlichen Rundschau, 1906.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY, Seventeenth Session, Held at Hotel Saganmore, Lake George, N. Y., June 19-21, 1905. Edited by L. E. La Fetra, M.D., Vol. XVII. Reprinted from Archives of Pediatrics, 1905-1906. Cloth. Pp. 228. New York: E. B. Treat & Co., 1906.

MODERN SURGICAL TECHNIC IN ITS RELATIONS AND WOUND-TREATMENT. By C. Y. Pearson, M.D., M.Ch., F.R.C.S., Professor of Surgery, Queen's College, Cork. Illustrated, with Two Colored and Other Plates. Cloth. Pp. 392. Price, $3.50 net. New York: William Wood & Co.

NOTES ON SURGERY FOR NURSES. By J. Bell, M.D., F.R.C.S., Edin., Consulting Surgeon to the Royal Infirmary, and to the Royal Edinburgh Hospital for Sick Children. Sixth Edition, thoroughly revised. Cloth. Pp. 187. Price, $1.50 net. New York: William Wood & Co.

SANITARY LEGISLATION IN THE UNITED STATES Enacted During the Year 1905. Special Bulletin of the State Board of Health. Compiled for the State Board of Health by C. V. Chapin, M.D. Cloth. Pp. 318. Providence, R. I.; E. L. Freeman & Sons, 1906.

DIE ZUCKERKRANKHEIT (Diabetes). Ihre Ursachen und Bekämpfung gemeinverständliche dargestellt. Be Dr. O. Burwinkel Kurarzt in Bad Nauheim (Winter San Remo). Paper. Pp. 31. Price, 1.20 mark. Munich: Verlag der Aerztlichen Rundschau, 1906.

STUDY OF THE CAUSE OF SUDDEN DEATH FOLLOWING THE INJECTION OF HORSE SERUM. By M. J. Rosenau and J. F. Anderson. Hygienic Laboratory—Bulletin No. 29. April, 1906. Paper. Pp. 95. Washington: Government Printing Office, 1906.

DER ALKOHOL UND DER ALKOHOLISMUS. Ein Wegweiser zum Verständnis moderner Kulturarbeit. von Dr. med. Kurt Bleibtreu, Waldsanatorium Tannenhof-Friedrichroda. Paper. Pp. 84. Price, 1.40 mark. Munich: Verlag der Aerztlichen Rundschau, 1906.

TWENTIETH ANNUAL REPORT OF THE STATE BOARD OF HEALTH and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted to the Governor, December 1, 1904. Cloth. Pp. 577. Harrisburg, Pa.: Harrisburg Publishing Co., 1906.

HANDBOOK OF SURGERY. By G. R. Buchanan, B.A., M.B., C.M. F.F.P.S., Assistant-Surgeon, Western Infirmary, Glasgow, etc. Cloth. Pp. 547. Price, $2.75 net. New York: William Wood & Co.

PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY IN MEDICINE. Vol. II. 1904-1905. Edited by the Secretary, New York, August 1, 1905. Paper. Pp. 106.

PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE. Vol. I. 1903-1904. Edited by the Secretary. Paper. Pp. 63. New York, June 1, 1904

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

Vol. XLVI. CHICAGO, ILLINOIS, JUNE 23, 1906. No. 25.

Address

WORK OF THE SECTION ON OPHTHALMOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON OPHTHALMOLOGY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

LEWIS H. TAYLOR, M.D.
WILKESBARRE, PA.

To present to you a résumé of the progress of ophthalmology during the past year, if such résumé should contemplate even a brief review of the numerous articles written, would occupy far more time than should properly be allotted to an introductory address. The omission of this formal duty by some of my predecessors has, I am sure, had the approval of the Section. An excellent review of this character by Dr. John Green, Jr., may be found in the *Interstate Medical Journal* for January, 1906, and a still more comprehensive analysis of the work of the year may be found in the excellent "Ophthalmic Year Book," edited by two of our most active workers, Drs. Jackson and de Schweinitz.

A pleasing feature of our last meeting was the presence with us of Professor Hirschberg, of Berlin, who gave an interesting address and who participated in the discussions of the scientific work of the Section. The custom inaugurated a few years ago by Dr. Allport, and since followed by others of my predecessors, of inviting a distinguished foreigner to attend the meeting of our Section and to deliver an address on some special topic is one well worthy to be followed by subsequent officers of the Section.

I regret exceedingly that I do not have the pleasure of introducing to you to-day one whom many of us know and whom we all honor for his scholarly work in ophthalmology. An invitation was extended some months ago to Prof. Carl Hess, of Würzburg, to be present as the guest of the Section and a formal acceptance was received from him. He was looking forward with pleasure to his visit to America, and had even written the address which he expected to deliver before us, when later, much to his regret and ours, he was forced by circumstances which he could not control to cancel his engagement and to postpone his visit indefinitely. It is to be hoped that we may be favored by his presence at some future time. Owing to the late date at which we received his declination it was not possible to secure another in his stead.

It is with sincere regret that I announce the death of one of our prominent workers, Swan M. Burnett, of Washington, D. C., which occurred suddenly on January 18 of the present year.

As late as December 29, in a letter to me, he accepted an appointment for committee work and wrote: "I hope to pull along far enough on the road to 'Wellville' to be able to go to Boston in June and to prepare a paper for you." He was interested in this Section from its inception and was its secretary in 1880-81. His work in our specialty is so well known to you all that it seems scarcely necessary to mention it here. Scholarly, earnest, devoted to his work, he was always ready by voice or pen to advance the science that he loved so well. In his death, ophthalmology has suffered a great loss.

The lack of time for a full discussion of the many interesting papers read before the Section has been a serious detriment in the past, and in order that this detriment may be removed we come before you this year with a new plan, that of having the papers published in advance of the meeting and in the hands of the members of the Section, so that each member may be fully ready for discussion, if he so desire, and that adequate time may be given for full consideration of special papers that may come before us. This plan has been considered for some years by others, and an effort was made by our present secretary to introduce it two years ago, but it failed owing to lack of co-operation in the office of THE JOURNAL. Its successful introduction this year is due to the untiring efforts of our energetic secretary and to the hearty co-operation of the editor of THE JOURNAL as well as of all those whose names appear on the program. It is possible that some of you may not cordially accept this plan. There is always room for honest difference of opinion, but we believe that it is worthy of trial and, with such modifications as your judgment will suggest, is worthy of adoption for subsequent meetings.

The importance of the suggestion made in their inaugural addresses by at least two presidents of the American Medical Association that the secretaries of sections should be, in a measure, permanent is well shown by the good work of our Section during the past three years. The policy of re-electing the secretary for a term of years is certainly a good one for the Section, though rather trying to the member who accepts the arduous duties of the office. Such a one should, at least, be relieved of all expense in connection with his work as secretary. The growing interest in the Section, the valuable volume of Transactions issued to members, together with the increased cost of mailing the copy of papers printed in advance of the meeting, would be grounds for suggesting an increase of assessment to at least $2.00 a member in order that the expenses may be equitably borne by the whole Section. Especially will this be advisable if the plan adopted for this year should be continued.

There are many reasons why this Section should be the true representative Ophthalmological Society of the United States. As the American Medical Association with its new constitution aims to represent the medical profession of the whole country, so this, one of the oldest sections of the general association, should represent the organized ophthalmologic profession of the whole country. It is the only ophthalmological society from

which no reputable oculist can be debarred by the vote of personal prejudice, or his entrance thereto be delayed by the slow-working process of membership committees. If his standing in his community is such as to admit him to membership in his local society, he is thereby entitled to membership in the American Medical Association and, if he so elects, to membership in this Section. Representing thus the entire profession of the country, we have in our ranks the very best workers that are to be found in our specialty; because we may have all of those who are entitled to membership in the most exclusive association of oculists, as well as all reputable younger workers whose reputations as scientific investigators are still to be established.

For the very reason that we represent in this peculiar manner the entire profession, the utterances of this Section, when unanimous, or nearly so, should have greater weight than the expression of any other ophthalmological society in the country, and the time has surely arrived when this Section, as such, should give definite expression of opinion and stamp with its approval certain features of our art on which the majority of us can agree. By no means would we imply that the last word has been said on any procedure or theory in ophthalmology, nor should there be any limit whatever to individual investigation or progress. More than twenty years ago a friend of mine who has since become eminent in his own specialty said to me: "Ophthalmology is finished. You will find nothing new in it." If he could carefully survey the field at present, he might readily conclude that it is not finished yet.

It is possible that there may be some more words to be said on the ocular muscles, their function, their defects, and their treatment before we shall arrive at definite conclusions to which we may all subscribe. One of the masters in this particular field who has spent much time in investigation and has written largely in expression of his views recently said at the close of a most interesting address: "I feel as if I were only on the threshold of this study."

Even cataract operation may be changed. The excellent results as shown in the recent interesting paper of Major Smith, of India, may lead us to think that a going back to old methods may really be a going forward in progress. The subject of bacteriology, which we hope to discuss quite thoroughly at this meeting in the symposium presented in our program, will not be ended this year, nor the management of ocular tumors, nor the use of electricity, nor others of the interesting questions that will be brought to your attention in our present program. There will still remain fields for investigation by the young ophthalmologist and plenty of opportunity for him to help settle the questions that have perplexed the elders. Refraction, as we all know, occupies a large part of the time of every ophthalmologist, and yet very little is said about it at our various meetings. Possibly many feel that so much has been said in the past that this is one of the points on which we are all agreed. I fear, however, that there is considerable divergence of opinion, and I wonder that so little attention is paid in our meetings to the various phases of this important subject.

There are some matters, however, about which we should be ready to give definite expression. For instance, the amount of instruction in ophthalmology that should be given in our medical colleges. This expression should be either by the appointment of a committee to formulate a course of instruction or by stamping with our approval the work already done by leaders in this line. The ignorance which treats a glaucoma by instillation of atropia or regards this or iritis as merely a form of neuralgia should not be tolerated in coming medical graduates. Only two years ago a resident physician, standing by me at the performance of a cataract operation, asked what the black stuff was that I removed from the eye when the iridectomy was made. He had spent four years in an excellent medical school, and yet he had never seen a cataract operation and did not know the difference between the cornea and iris, and he was a good resident, too, and better qualified to enter on practice than many others.

The subject of ventilation of school buildings, in its bearing on health and eyesight, as so ably presented by my immediate predecessor, as well as the general hygiene of school life in its bearing on eyesight, might well receive our consideration and definite approval.

Especially should we stamp with our disapproval certain pernicious forms of kindergarten work which demand excessive use of the eyes at close work at an age when eyes should not be subjected to such strain.

Above all, may we not hope at an early date for a still more definite expression from the Section on the subject of preventive blindness? Much excellent work has been done in this direction, and I think in the general principles involved we are fairly unanimous. I trust you will be ready to vote favorably on the resolutions that will be presented later, prepared by Dr. Park Lewis, of Buffalo, asking for the appointment of a committee by the Association to work out the details of a plan that may give us definite and uniform legislation throughout the country, and definite instruction to the general profession and laity, and thus supplement the excellent work already done by Massachusetts and a number of other states of our Union. These are a few of the questions that would seem to me to be worthy of your notice.

I welcome you most heartily to this twenty-seventh annual session of the Section on Ophthalmology. We come before you with a full program of interesting and varied papers, and I cordially invite you all to participate in a full discussion of the same.

Before entering on our stated program, I want to express my sincere appreciation of the honor you have conferred on me in electing me chairman of this flourishing Section and to thank you most heartily for the same.

Original Articles

A MORE UNIFORM STANDARD FOR THE ILLUMINATION OF VISUAL TEST-TYPES.*

CHARLES H. WILLIAMS, M.D.
BOSTON.

At our last session in Portland, Oregon, the illumination of some test-types which I showed was criticised, and justly so, on account of being too intense. If the light reflected from the test-type card is too bright the retina soon becomes fatigued, there is more irradiation, and the results obtained are less reliable than where a weaker illumination is used; on the other hand, if the light is too weak, we do not get a proper measure of the acuteness of vision under the conditions of ordinary use. We need some standard which will come between

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

these two extremes, which will be constant, so that the acuteness of vision of any individual to-day can be properly compared with his record of any previous time, and which will allow the reported records of one examiner to be compared with those of another.

It is easy to measure with great accuracy small differences in heat, or in the amount of an electric current, but with light these measurements can not be made with anything like the same accuracy, and for the purpose of measuring the amount of light reflected from a card of test-types, and of noting the point where the light reflected from the card becomes so much reduced in comparison to that reflected from the surface of the letters that the letters can no longer be read, it has been necessary to devise two special forms of photometer, which will be explained later.

STANDARD ILLUMINATION.

For practical purposes it will be best to state first the conclusions which have been reached after many trials and then to describe some of the tests. The most satisfactory results have been obtained by hanging the card of test-types in a cabinet painted a dull black, the opening being three feet wide by four feet high. On each side of this rectangular opening, right and left, is arranged a vertical column of small incandescent lamps of 5 candle power each, eight on each side, made to burn four in series on a current of 110 volts. These lamps are arranged at equal intervals, the highest and lowest being as near the top and bottom of the cabinet as possible, and are so placed that the lamps of one side come opposite the intervals between the lamps of the opposite side, thus making a more even distribution of the light. This vertical column of eight lamps on each side is protected by a blackened tin screen so that no light will pass direct from them to the observer, but so that the full amount of light will be thrown on the test card. The lights are one foot in front of the plane of the test-types, and about fourteen inches from the nearest edge of the card, and "frosted" bulbs are used.

With the lights arranged in this way, an even and constant illumination will be obtained over the whole surface of the card, the light will not be too intense, especially if the test-types are printed on paper of a light brownish tint, or, which is the same thing, if the paper has become darkened with age.

The above arrangement supposes that the office is supplied with an electric current, which is almost a necessity at the present day, but in many cases this is not available, and we need some measure of the amount of light reflected from a series of test-types at the ordinary distance of five meters, and some means of comparing this light with the amount reflected from such a standard as above described.

THE SIMPLEX PHOTOMETER.

A "simplex" photometer, which I devised last summer for measuring the relative brightness of signal lights at a distance of half a mile or more, seems to answer also for the comparison of the light reflected from different test cards, or from the same card under varying illumination.

This photometer consists of two developed glass negatives cut in strips about six inches long by three-quarters of an inch wide, placed face to face and mounted in a metal case. The film on each negative increases in density in a geometrical ratio from the clear end toward the dense end. These negatives are made at the Observatory of Harvard College with the same apparatus which is used for making photometric films for astronomical work and they give a very even and regular gradation.

To measure the brightness of a light, the photometer is held in front of the eye so that the light to be measured is seen through the clear end of the photometer film, the glass is then slowly moved so as to bring the denser portions of the film in line with the light until a point is found where the light is just extinguished by the absorption of the film. The amount of light cut off by the film at this point measures the intensity of the light tested, and can be read off on a scale attached to the glass photometric negative. It has been found most convenient to mount the negative in a metal case

Figure 1 shows the instrument closed, as it is carried in the pocket.

Figure 2 shows the instrument open ready for use. The cap is removed, the wire at the end of the cap is slipped over the end of the instrument to make a shield for the observer's eye.

shaped like a razor case, a sighting hole is punched in both sides of the case through which the light to be tested is observed, and directly below this is another hole in one side of the case through which the scale of the instrument can be read (Fig. 2).

Figure 3 shows the position in which the photometer is held when in use, resting firmly on the nose with the hole in the case before the eye.

The accurate marking of the scale on these instruments was rather difficult. The developed negatives

Figure 3 shows the position in which the photometer is held when in use, resting firmly on the nose, with the hole in the case before the eye.

giving a gradually increasing density of film were made with the greatest care, so far as selection of plates, time of exposure, developer, etc., were concerned; yet with the greatest attention to details the films could not all come out alike, and, although there was very little trou-

ble as to the gradually increasing density of the film, yet some films would be denser throughout than others, and a certain point, say at 10 cm. from the clear end of the film, would not, in all cases, cut off the same amount of light. In order to have a uniform scale for all the instruments, it was found necessary to have a series of standard shade glasses prepared. Each photometer was then compared with this set of glasses, and the scale of each instrument was marked from the result of this comparison. These standard shade glasses were made under the direction of Mr. E. S. King, of the Observatory staff, who has been very helpful

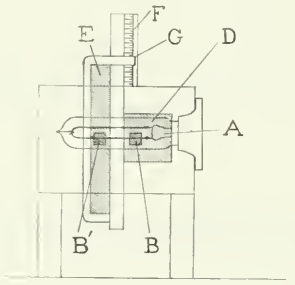


Fig. 4.—Front plan.

throughout these investigations, and a series of standard shade glasses was finally obtained which did not vary more than 1/10 of a stellar magnitude from the calculated amount in the quantity of light they cut off. This series of glasses consisted of six pieces which cut off an amount of light equal to 1, 2, 3, 4, 5 and 10 stellar magnitudes, respectively, and by comparing each photometer with this series of glasses, used either singly or in combination, a series of points was established where the instrument cut off an amount of light equal to 1, 2, 3, etc., stellar magnitudes up to 15, and the scales were established uniformly in this way.

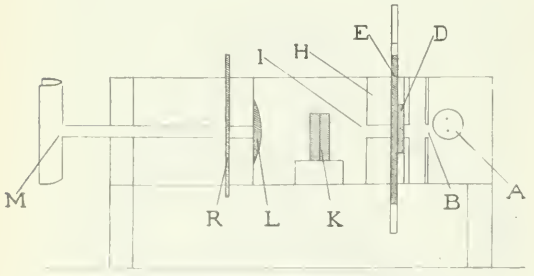


Fig. 5.—Side plan.

The amount of light to be measured, especially in the tests of distant signal lights, was in many cases so much less than a candle power that a scale based on the unit of a stellar magnitude was adopted as being the best. A scale of stellar magnitudes may be stated as a scale of brightness proceeding in geometrical ratio, each magnitude being about 2.5 times as bright as the magnitude next fainter, a difference of five magnitudes being equal to a difference of brightness of the lights in the ratio of 1 to 100. The pole star has a brightness of about 2.12 magnitudes. The ratio of 1 to 2.5 as representing one stellar magnitude has been determined by astronomers by taking the lists of stars which the older astronomers had constructed as giving an estimate of their brightness, as of the first, second, etc., magnitude, and on careful remeasurement finding that a difference of one magnitude between one star and another corresponded on the average to the ratio of 1 to 2.5.

In order to make an accurate comparison of the photometric films with the standard shade glasses, I made a new photometer. The problem was to have an intense light, equal to about 17 stellar magnitudes, placed before each of two openings so that each would receive an equal amount of light; behind one of these openings was the standard shade glass, behind the other opening was the photometer film to be measured, and, the light having passed through them, was to be so directed that when seen in the field of the eyepiece part of the field would be lighted by the rays which came through the film, and the other part by the rays which came through the standard shade glass, these two areas just touching along one edge so that their brightness could be compared. By moving the film, a point is quickly found where the light of the two areas is equal, and this shows the point where the film absorbs the same amount of light as the standard glass with which it is being compared.

The comparison photometer is arranged thus: In a box (Figs. 4 and 5) about 16 inches long, 4.5 high and 6.5 wide, at one end is a candelabra incandescent lamp

Figure 6.

ARRANGEMENT OF COMPARISON PHOTOMETER.

with a long straight film, A, which gives an intense and equal light for each of the openings B and B′ in a metal screen, the standard glass D being placed behind B and the photometer film E behind the opening B′. The photometer film E was held in a movable frame so that it could be easily moved up and down vertically to bring any part of the film behind the opening, and a scale F was fixed to the stationary part of the frame so that a pointer G on the movable part would give a reading showing the distance of the point on the film behind the opening B′ from the clear upper end of the film. A partition H in the box cut off any stray light and had an opening I in line with the openings B and B′ in the screen. A prism of twenty degrees K was placed with its apex vertical and 4.25 inches from the openings B and B′ in a line midway between them, and the prism was arranged to move horizontally on the bottom of the box so as to be capable of such adjustment as would bring the edge of the lighted area from one of the openings B in juxtaposition to the other B′ when seen in the eyepiece M. At 2.5 inches from the prism was a convex cylindrical lens L of ten diopters with the axis horizontal, and in the end of the box a tube with a small hole, 1/10 inch in diameter as an eyepiece at the end M, through which the light from the two openings could be seen and compared. The result of this arrangement was to give at the eyepiece M the picture shown

in Figure 6. Two light areas O and P are seen, the light of O coming through the opening B′ and the movable photometric film E, the light of P coming from the opening B through the standard shade glass D. If the film is lowered the field O will appear lighter than P, and if the film is raised the field O will become darker than P, and a point can quickly be found where, by moving the film, these two lighted areas appear to be of the same brightness, and at this point the scale F is read, giving the distance from the end of the film to the point where the density of the film behind the opening B is just equal to that of the standard shade glass, placed behind the opening B.

In order to act as a regulator and keep the intensity of the light about the same, and at a point where the retina is more sensitive, no matter whether the film E is being compared with lighter shades, of 1 or 2 magnitudes, or with a denser shade of 12 or 13 magnitudes, a second film R covering the whole field as seen in the eyepiece M, is placed behind the cylindrical lens L, and is arranged to move vertically. When the lighter shades are being tested the film R is raised so as to cut off more light, and when the darker shades are tested the film R is lowered so as to cut off less light.

Five readings were taken with the film and shade glass in the first position, then the frame holding the standard glass and film was reversed and another set of five readings was taken in the reversed position. In this way any inequalities in the instrument, such as the light absorbed by the prism, any inequalities in the light from the two openings, etc., were neutralized. The mean of these ten readings was taken to fix the desired points on the paper scale pasted on the glass of the photometric film.

The result of careful measurement of 62 of these photometers has shown that these points when laid off on co-ordinate paper form a practically straight line and, instead of measuring a point on the film for each stellar magnitude from 1 to 15, it is sufficient to measure the position of three points, say 2, 7 and 12 magnitudes, a straight line is then drawn through these three points when laid off, using the stellar magnitudes for ordinates, and the distance from the end of the photometer to the point where the lights are equal for the abscissas, and this will give a line from which the intervening points of the scale can be found with great accuracy.

TESTS AND RESULTS.

With a "simplex" photometer constructed as above, if we look at the letters on the test-types which represent a vision of 5/50 or 6/60, through the opening in the photometer case, and gradually withdraw the film, we shall find at from 9 to 10 on the scale the form of these largest letters on the test-types has become indistinguishable; in other words, by reducing the light reflected from the test-type card by an amount equal to about ten stellar magnitudes we just cause the largest letters to disappear when the test-types are illuminated by the standard light mentioned at the beginning of this paper. If we find that the largest letters are extinguished before we reach the ten-magnitude point on the photometer, it shows that the illumination of the test-types is more feeble than the standard, but if the photometer scale gives more than ten magnitudes it shows that the illumination is too bright, and by how much.

With the above standard of illumination if we test the point where the line of letters representing average normal vision of 5/5 or 6/6 disappears, we shall find that this corresponds to about 4 or 5 magnitudes on the photometer scale. This would seem to indicate that if we require a certain intensity of light, viz., the standard amount reduced by ten magnitudes, to read the largest letters, V. = 1/10 or 5/50, we require one hundred times as much, or the standard reduced by only five magnitudes, to read the smallest letters, V. = 1 or 5/5. This proportion also seems to hold good for other amounts of acuteness of vision. The distance being, as before, at five meters, and the illumination of standard brightness, the photometer readings for one observer showed normal vision, V. = 1 at 4 magnitudes, V. = 0.5 at 6.5 magnitudes, V. = 0.25 at 7.75 magnitudes. Another observer gave 5, 7 and 8 magnitudes, respectively.

If we reduce the amount of illumination by introducing a given amount of resistance into the circuit of our lamps, say 10 and 20 ohms, we find that for the largest letters, V. = 0.1, or 5/50, we get the results as given in Table 1.

TABLE 1.

	Full Current.	10 ohms.	20 ohms.	
Observer A...	10.0 mag.	8.8 mag.	8.0 mag.	Right eye.
	10.0 mag.	9.0 mag.	8.0 mag.	Left eye.
Observer B...	9.5 mag.	8.25 mag.	7.25 mag.	Right eye.
	9.75 mag.	8.5 mag.	7.5 mag.	Left eye.
Observer C.....	10.0 mag.	9.0 mag.	8.0 mag.	Both eyes.

This seems to show that as the strength of the current in these lamps is reduced there is a falling off in the amount of light reflected from the test-type card equal to about one magnitude for each 10 ohms. That is to say, for these resistances the reflected light is reduced two and one-half times for each step, and, as the ratio of the intensity of the light increases in geometrical ratio, we find that with the full current the light reflected from our test-type card is two and one-half times as bright as when a resistance of 10 ohms is placed in the circuit and is six and three-tenths times as bright as when a resistance of 20 ohms is placed in the circuit.

The differences in magnitudes and the brightness of the lights are shown in Table 2.

TABLE 2.

Difference in magnitude.....	0.	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
Ratio of brightness.....	1.	1.6	2.5	4.0	6.3	10.0	16.0	25.0	40.0	63.0	100.0

According to this table, if we examine two lights with the photometer and find that one light is just cut off at 3 on the scale, and the other at 5, it shows that there is a difference between these lights of two magnitudes in their intrinsic brightness, and that one light is 6.3 times as bright as the other. If we find that one light cuts off at 5 and the other at 9 on the scale, there is a difference of four magnitudes, and one light is 40 times as bright as the other.

DISCUSSION.

DR. O. F. WADSWORTH, Boston, said that he had tested Dr. Williams' arrangement in comparison with other methods. It seemed to him that this illumination is practically as good as a good North light, but there is, particularly if a white background is used, a little too much intensity. Even the yellow tint that he has given these cards might be improved on. There is no question that on very dark days one can not satisfactorily use daylight, no matter how good it may be under ordinary circumstances, and then artificial light must be employed. Within certain limits, Dr. Wadsworth thinks, there is no practical difference in the amount of vision, but there is no question that a standard illumination which every one is to use must be secured by artificial light. Dr. Wadsworth

thought the photometer very simple, very easily used, very accurate and very practical. With a standard determination of light we must have also a standard test type. These types of Dr. Williams are uniform. All the letters are to be made out with about the same ease. There is the disadvantage that there are comparatively few letters that can be used and the patient can readily become familiar with the letters. We gain an advantage in one way and lose it in another.

Dr. Nelson M. Black, Milwaukee, Wis., said that one of the main objects of the Section on Ophthalmology of the American Medical Association should be to standardize the various methods and apparatus used in testing the eyes. This has been done along some lines. We understand when a case is reported as having V. equals 6/vi or 20/20 that it represents the visual acuity measured by the Snellen standard test types at a standard distance. Dr. Black said that he had devised, and for the past five years had used, a luminous test-type cabinet (*Ophth. Record*, April, 1904), in which the letters are engraved on porcelain and transillumined with three incandescent lamps of eight candlepower each. This gives perfect and constant illumination and is less tiring to the retina than reflected light. Dr. Black remarked that Dr. Williams opened his paper with the statement that the illumination of his charts was justly criticised at Portland last year as being too intense. He asked, why shouldn't Dr. Williams be in error again? He thought that the first need is to adopt a definite standard of illumination for charts expressed in units of candlepower or some such definite standard. Then by the use of Dr. Williams' neat little phorometer one can see that the adopted standard is maintained.

Dr. Myles Standish, Boston, thought that Dr. Williams' method is radically wrong. To put a light card in a black box and have a patient look at it for the length of time necessary for an examination is wrong physiologically. To look at this card very long will tire sensitive eyes. In order to use the eyes physiologically the light must be arranged physiologically, with an even illumination. If one goes into a dark chamber and bores a hole through the shutter into the broad light and looks at it, no matter how strong the eyes are, one will have to relieve them by turning the head. The amount of fatigue that comes from looking at letters on a light background when the eyes are adjusted to a dark area is great. If the walls were constructed of some material that would not make a brilliant contrast the ability of a patient to read 20/20 after looking at it for some time would be improved. I have tried some experiments in this direction and am sure this is a just criticism. The excellent photometer I hope every one will try. It is a most beautiful little instrument.

Dr. H. V. Würdemann, Milwaukee, agreed that there is a necessity for a uniform illumination for test types. Many ophthalmologists use charts many years of age, dark-brown in color and the black of the letters hardly distinguishable in the rows of small type. Such charts can not get the full visual acuity of the eye. A chart such as Dr. Williams has presented may bring out a good visual acuity, but after looking at it for a few minutes secondary images of the chart appear on looking up at the ceiling, showing retinal fatigue, due to too great a contrast between the background and the chart. This also occurred in using the Nelson M. Black charts, which are a modification of the Moorfield charts. Therefore the background of Dr. Würdemann's room, which was painted black, had to be changed to a dark gray. With a modification of a gray background he thought the charts quite as good as the Nelson M. Black charts and much better than others.

Dr. Lucien Howe, Buffalo, suggested that there was confusion of two things: one, the illumination, and, quite a different thing, the letters. Dr. Howe called attention to the fact that twenty years ago he discussed this subject, referring to the Crooks radiometer as a very good optometer, the little thing seen revolving in the opticians' windows. It is a very excellent optometer and as a rough method will still find its use, though it is not to be compared with the very excellent method of Dr. Williams. Dr. Howe thought that this has a better scientific basis and he expects to use it a great deal. As to the letters, Dr. Howe said that Dr. Williams has been working on this subject for a number of years. Very few have given such attention to the subject as he has, and so Dr. Howe felt inclined to accept his views in the matter.

Dr. Charles H. Williams, Boston, explained that this amount of light on the card is equal to a good fair summer day's light, diffused daylight, and is equal to ten magnitudes of a photometer. That is the standard. In regard to Dr. Würdemann's criticism as to the secondary images, Dr. Williams said that one can not get any letters that are visible that will not do that after the eyes are fixed constantly on one of the letters. Dr. Williams said that as to the criticism made by Dr. Standish of the background, that would be very easily remedied by simply painting the background another color, and he sees no objection to doing that.

A NEW SUPPLEMENTARY TEST FOR COLOR VISION.*

NELSON MILES BLACK, M.D.
MILWAUKEE, WIS.

The dissatisfaction expressed by those who are required to undergo examinations for color vision is general and in railway service it even extends to the officials. This has created a demand for some test supplementary to the Holmgren wool test which is universally used.

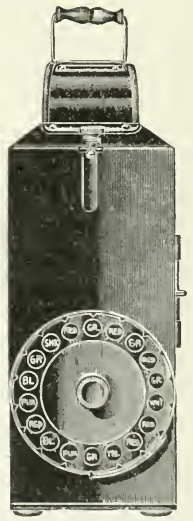


Fig. 1.—Dr. Charles H. Williams' lantern for testing color vision.

The fact that, in practice, railway men and pilots are dependent at night on light transmitted through colored glass has caused an endeavor to devise a test which shall, as nearly as possible, approximate the actual conditions; hence the lanterns. Many are in general use on a number of our largest railway systems. Dr. Charles H. Williams' lantern is probably the best in this country (Fig. 1).

It is conceded that the worsted test of Holmgren will not detect all kinds of color defects, but it must be also granted that no other known test will, and that the Holmgren test is equal, if not superior, to any yet de-

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

• The semaphore lamps used in railway service being the source of illumination.

vised.[1] "An exact test can only be made by the spectroscope by determining the limits of the spectrum and the places of the neutral lines." This, however, is not practical for use in examining railway employés.

The value of the Holmgren test lies in its requirement of a comparison of colors. This is exactly what must be done in practical work; an engineman must draw comparisons between lights of different colors at greater or less distances, with their intensity reduced by atmos-

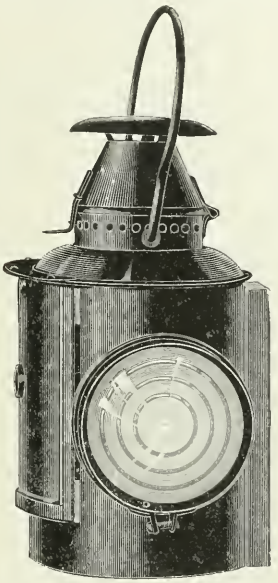


Fig. 2.—Adams, Westlake & Co.'s non-sweating ventilation semaphore lamp.

pheric conditions, by the interference of smoke or steam or by poorly trimmed lamps and dirty lenses and roundels; consequently to meet the demands a supplementary test must conform to several principles which Prof. E. W. Scripture[2] (director of the psychological laboratory of Yale) outlined in his address on "Color Blindness and Its Tests" before the New York Railroad Club:

1. The test must "fit exactly the conditions found in practice."
2. "The person tested should be required to name the objects, for that is what he does inaudibly when he is at work."
3. "The objects for testing should resemble the objects in actual use."
4. "A comparison of colors must be required."

Two more principles should be added and emphasized:

5. The test must give the impression of a signal seen at a distance.
6. The test must be such as may be conducted indoors.

The various lanterns in use fulfill the above requirements to a greater or less degree, but fail in many particulars. "To fit exactly the conditions found in practice," which really includes the fifth principle, "a signal light must be recognized by the engineman at sufficient distance in which to control his train." Mr. R. Quayle, superintendent of motive power of the Chicago & Northwestern Railway, kindly furnishes the following data, which are the result of some recent experiments in controling fast trains: "With the ordinary brake, 70 pounds train-line pressure, a six-car train running 70 miles an hour can be stopped inside of 2,000 feet, approximately 1,900 feet, and when the high-speed brake, 110 pounds pressure, is used on the same train running at the same speed the train can be stopped in 1,450 feet.[3] It will be seen that a signal must be read at not much less than one-half mile (2,640 feet), as a few seconds are necessary for the engineman to shut off his steam and apply his air, and in each one of these seconds a train traveling 70 miles an hour is covering 88 feet."

The suggestion of distance is attempted in the various lanterns by reducing the size of the opening transmitting the light, but this does not by any means meet "the conditions found in practice," as the intensity of the illumination through the small opening is the same as through the large, the source being identical; the only difference is the area of illumination. When the opening is small there are a great many radiating lines of light which give the appearance of a larger opening than really exists.

On account of the distance remaining the same with the worsted and lantern tests, there is a certain class of color defectives and *a class most to be feared* that the Holmgren test and any lantern test so far devised will not detect. These are known as chromic myopes.[2] [4] Up to a certain distance their color vision is normal; beyond they can only determine that one color is darker or lighter than another. Such cases the Holmgren worsted test will not detect, nor will the lantern, even with the small opening to simulate distance, unless they are re-

Fig. 3.—Combination disc and semaphore block.

moved beyond the far point for such individual's color sense. Dr. Charles A. Oliver[4] has called especial attention to this fault in the tests now in vogue. The effect

1. Van Marle, F. C.: (doctorate thesis) "The Practical Value of Some Method of Examining Color Blindness." Abstract in Ophthalmology, April, 1905.
2. Scripture, Prof. E. W.: "Color Blindness and Its Tests." Transactions, New York Railroad Club, November, 1899.
3. Black, Nelson M.: "Vision of Enginemen and Firemen in Railway Service. Some Factors Affecting Same." Official Proceedings Western Railway Club, November, 1904; also, "The Environment and Visual Requirements of Railway Enginemen and Firemen." Transaction of Section on Ophthalmology, A. M. A., 1904, and THE JOURNAL A. M. A., Feb. 18, 1905.
4. Wilson, George: "Researches on Color Blindness"; also Oliver, Charles A.: "A Case Illustrating the Inadequacies of the Present Methods for Recognition of Distant Color Signals." Annals of Ophthalmology, April, 1904; also Frank, M.: "Normal and Subnormal Color Perception," Ophthalmic Record, August, 1904; also Eldridge-Green: "Color Blindness"; also Jennings, J. Ellis; "Color Vision and Color Blindness."

on a signal light from atmospheric conditions, smoke, and steam is simulated by using smoke glass of various shades for lessening the intensity, ground glass to represent fog or mist and ribbed glass to simulate rain. These produce the desired effects very well.

"The person tested should be required to name the objects"; it is unnecessary in the test for him to name the color. If the indication is recognized, that is sufficient; for instance, "stop" for red, "clear" for white or green as the case may be and "caution" for green or yellow depending on meaning of colors used. The

Fig. 4.—Diagram of first formula.

Fig. 5.—Diagram of second formula.

ignorance of color nomenclature is well known and has many times been mistaken by an inexperienced examiner for color defect.[5]

"The objects for testing should resemble the objects in actual use." The lanterns do, to a certain extent, but many of those examined are suspicious and imagine there is some trick about the lanterns.

"A comparison of colors must be required." Professor Scripture[2] calls especial attention to this important factor in the paper above referred to and suggests: "Three colors at a time is a number agreeable to the subject. It is a fact well established by experimental psychology that under ordinary circumstances the mind can not attend to more than five objects at a time; the number three is well within the limit."

Professor Scripture's[2] "color sense tester" carries out this idea of comparison. None of the lanterns I am familiar with do. One or, at the most, two lights are exhibited simultaneously. This does not carry out the fourth principle, but is a fault easily remedied. The color sense tester is not constructed to suggest the impression of distance.

In the test about to be described the optical laws are brought into operation which reduce the apparent size of an object when looking through the wrong end of an opera or field glass. The idea of utilizing this as a supplement to the worsted test was suggested while making comparative range tests of various makes of roundels.[6] This was done with the so-called "reducing lens test" used by Dr. William Churchill[7] of the Corning Glass Works, and it is through his courtesy I am enabled to adapt it for a color test.

The apparatus consists of a brass tube with a dead black lining, about 150 cm. long and 4 cm. in diameter, mounting a combination of biconcave lenses. One end is fitted with a hood similar to that used on the ordinary stereoscope, tapered to size of tube. The tube should be mounted in a screen to prevent the person being examined from seeing the source of illumination. The illumination consists of three Adams, Westlake & Co.'s non-sweating ventilation, standard semaphore lamps (Fig. 2). These are placed 400 cm. from the lens farthest from the eye-piece in the tube and form a right angle triangle, whose base is 225.8 cm. and one side 198.12 cm. from center to center of lenses in the lamps. This conforms to the arrangement of signals on one post in practice according to Mr. L. R. Clausen, signal engineer C., M. & St. Paul R. R., and Mr. J. A. Peabody, signal engineer C. & N. W. R. R. (Fig. 3).

The lenses used in the lamps are the latest pattern corrugated semaphore lens manufactured by the Corning Glass Company. This lens collects the divergent rays into a nearly parallel beam; it is 5⅜ inches in diameter and has a 3½-inch focus. The fronts of the lamps are fitted with cells very much like those in a trial frame into which the colored glass or roundels used in service may be placed. The colors used in railway service are red, green, white and yellow, but in the test these are used in darker and lighter shades to determine if the candidate can discriminate between different shades of a color.

An attempt to produce the effect of fog, mist, smoke, steam, rain and lowered intensity, due to different atmospheric conditions, is made by interposing ground glass, yellow glass and different shades of smoke glass which produce the desired effect.

The apparent reduction secured may be deduced from the following formula:[8]

$$d' = d + \frac{e\,(p)}{f}$$

d = the real distance from the light
d' = the imaginary distance from the light to the eye.
e = distance from the lens to the eye.
p = distance from the lens to the light.
f = focal distance of the lens.
The maximum reducing effect would be obtained if e = p.

As every lens reduces the intensity of a beam of light

5. Dibble, L.: "Color Blindness vs. Color Ignorance." Railway Surg. vol. x, 1903-4.

6. Black, Nelson M.: "Report of Comparative Tests of Roundels from an Ophthalmologist's Standpoint." Proceedings of the Railway Signal Association, vol. vii, November, 1904.

7. Churchill, Wm.: "The Roundel Problem." Proceedings of the Railway Signal Association, vol. viii, November, 1905.

8. Palaz: "Industrial Photometry."

10 per cent. by reflection, and every reflection in a mirror reduces the intensity 15 per cent., allowance must be made for the loss by the following formula:

$$d^1 = 105.4 \text{ per cent. } d + \frac{e\,(p)}{f}$$

When a second lens (Fig. 5) is used, it is necessary to calculate the distance (p_1^1) from the lens to the apparent position of the object or light behind it; this is obtained from the formula:

$$p_1^1 = \frac{p^1(f)}{p^1 - f}$$

Then p^{11} of the second lens becomes p^1 of first lens + e^1 of first lens and d^{11} becomes ($p_1^1 + e^1$) + e^{11} as indicated in the calculation following:

To ascertain the effect produced by two lenses get the apparent distance given by one, then multiply by factor $\frac{d^{11}}{d^{11}}$ for second lenses as indicated in the calculation.

The following example will illustrate using two — 20 D. lenses, with object 400 cm. from first lens, the lenses 75 cm. from each other and the eye 75 cm. from the second lens. The formula becomes (Fig. 5):

Lens 1. $d_2^1 = p^1 + e^1 + \frac{e^1 p^{11}}{f}$

$d_2^1 = (400 + 75 + \frac{75(400)}{5}) 105.4\%$

$d_2^1 = 475 + 15 \times (400)$

$(6475)\ 105.4\% = 6824.65$ cm.

Lens 2. $p^{11} = p_1^1 + e^1$ $\qquad p_1^1 = \frac{p^1(f)}{p^1 - f}$

$p_1^1 = \frac{400(5)}{400+5} = 4.94$ cm

$d_1^1 = p_1^1 + e^1 + e^{11} + \frac{e^{11}(p^{11})}{f}$

$d_2^1 = 4.94 + 75 + 75 + \frac{75\ (79.94)}{5}$

$d_2^1 = 154.94 + 15(79.94)$

$d_2^1 = (1354c \text{ or } 8.74d^*) 105.4\%$

$d_2^1 = 9.21d^1$

But Lens 1 gives apparent distance of 6,824.65 cm.; therefore, combined effect of the lenses is:

6.824.65 cm. +9.21 cm. = 62,855 cm.
62,855 cm. = 628.55 m. or 2,055 feet.

The test is conducted as follows and may precede or follow the Holmgren wool test, as is desired. If it precedes, it will often indicate what to look out for in the wool test. The person to be examined is shown the semaphore lamps arranged in the triangle with the roundels in place; a clear, red and green or any combination that is used on his road, and is informed he is to state what the signals indicate; he is then seated behind the screen and the lenses placed in the telescope tube to give the lights the appearance of being about one half-mile distance. Several combinations are made which are recorded: Signal No. 1, "danger." "stop" or red; No. 2, "caution," "clear" or green or white; No. 3, "danger" or red, as the case may be. If the candidate wishes to give the name of the color or its indication, it makes no difference. The intensity of the lights may now be varied with smoke, ground or ribbed glass, or one or more of the lights may be blocked out by placing a blank in the cell. If there is some difficulty in interpreting the signals with the apparent reduction equal to one-half mile, arrange the lens to give the apparent reduction of less than one-half of a mile and try same. Other candidates may watch the proceedings, but are not allowed to communicate with the person being examined.

The main reason assigned by Dr. Charles H. Williams[9] for a supplementary lantern test is that "some cases are able to pass the wool test correctly and without hesitation, who when examined with the lights from a distant signal may be unable to distinguish the red or green with any reasonable degree of certainty, and, in fact, often confuse these colors. This occurs most frequently in cases of acquired defect in color vision caused by excessive use of tobacco or alcohol or by a combination of the two. In such cases there is often a small defect in the central part of the retina so small that the retinal image of the skein of worsted is large enough to be formed partly within the affected area, and partly beyond it, and if any part of it falls on healthy retina its color can be at once recognized. If the object is small, like a distant signal light, the retinal image is formed wholly within the affected area, and the color is not recognized. At night there is often no other means of distinguishing between safety and danger, except by the quick and accurate recognition of the color of a railway signal or the side light of a ship, and it is of a special importance that the test for color perception should include a test resembling as nearly as possible the conditions of service and of such a kind as to show conclusively, after the test has been made, whether the person can be relied on to recognize quickly and accurately the color of a distant signal light."

Such cases are rare and it would be natural to suppose that with a relative or absolute scotoma sufficiently large to cause confusion in the recognition of a distant signal, or blot it out entirely, the form vision would be so diminished as to throw out the candidate at once. The reducing lens test will meet the demand in such a case even better than the lanterns will, because of the radiating rays from the small opening. If three lights are displayed and only two seen, or the color not recognized of the third, or the two lights displayed and only one seen, it would lead one to suspect a condition as above described, and further tests should be made to ascertain the condition.

To summarize: The test fits exactly the conditions found in practice. The objects used in testing are the same used in actual practice, the person tested is required to designate what he sees either by name or to indicate its meaning, which he does in practice. The fault of all lantern tests is overcome by simulating distance, by a relative reduction in the size of the image. The factor which gives the success to the Holmgren worsted test, that of comparison, is followed, the impression of distance is maintained, and the test may be used as an office test. The only thing we can do is to produce a gale of wind or a rainstorm or the roar and noise of the engine for the benefit of the candidate while being examined.

128 Wisconsin Street.

DISCUSSION.

DR. CHARLES H. WILLIAMS, Boston, thought that a practical difficulty is that the men can give the names to the impressions which they receive from the two lights, although they may be extremely defective in color perception. They learn to give the name of green or red to a certain stimuli which they receive, where the choice is simply between the colors they have been in the habit of using, but on testing them with different shades of red or green the defect is discovered. It comes out clearly with the worsteds and with the testing lantern Dr. Williams devised some years ago. Dr. Gardner, of

9. Williams, Charles H.: "The Need of a Supplementary Lantern Test for the Proper Examination of Color Perception." Boston Medical and Surgical Journal, July 30, 1903.

Chicago, had a bright man who was decidedly defective in his color sense and Dr. Gardner told him that it was incurable. The man said he would cure himself and in a year's time came back and Dr. Gardner could not catch him. At the end of the test, however, the man happened to pick up a piece of glass from the table, saying, "Why, doctor, where did you get that beautiful green glass?" The glass was a ruby red, but a different shade of red from that with which he had been training.

Dr. O. P. Frank, Chicago, said that the formula given by Dr. Black does not take into account that the light varies according to the square of the distance. The focal length of the lens, the thickness of the glass and the source and kind of light must also be taken into account. Dr. Frank asked the source of the value of 105.4 per cent. He quoted Dr. Black as saying that the intensity of light loses 10 per cent. by reflection. Dr. Frank thought absorption was meant. The angle of incidence, too, must be taken into account, for the absorption varies according to the angle of incidence.

Dr. W. R. Parker, Detroit, reported that he had had patients who passed perfect examinations with the worsted who afterward failed with the lantern. One man had a miniature set of skeins with which he had spent hours practicing. He had so trained himself that he could tell all of the colors, and it was only by the comparative tests, two shades of the same color, that his color blindness could be detected.

Dr. Nelson M. Black, Milwaukee, said that a change of shades can be had by slipping into the lantern any of the various shades of glass used in railroad work. This instrument is only in the experimental stage and the working out of the formula may be far from being perfect. It has been proven photometrically that 10 to 15 per cent. is lost by reflection and an additional amount by absorption. This can be seen when riding in a car at night and seeing the reflection of the whole interior of the car.

AN ANALYSIS OF FORTY CASES OF MENINGITIS IN INFANCY.*

JOHN LOVETT MORSE, A.M., M.D.

Assistant Professor of Pediatrics, Harvard Medical School; Assistant Physician at the Children's Hospital and at the Infants' Hospital; Visiting Physician at the Floating Hospital.

BOSTON.

These cases, equally divided between the tubercular and cerebrospinal forms, were all patients in the wards of the Infants' Hospital. The diagnosis was made in every case by autopsy or lumbar puncture. A marked predominance of mononuclear cells in the spinal fluid was considered diagnostic of the tubercular form, and of polynuclear cells of the cerebrospinal form. In all but three of the cerebrospinal cases the meningococcus was also found. This study was undertaken to determine, if possible, something as to the symptomatology of meningitis in infancy and as to the differential diagnosis between tubercular and cerebrospinal meningitis at this age.

GENERAL SUMMARY OF CASES.

Onset.—The onset was sudden in four of the tubercular cases, the first symptom being convulsions in three and coma in one. In the other tubercular cases the onset was slow. The onset was also sudden in four of the cerebrospinal cases, the first symptom being convulsions in three and high fever and vomiting in one. The onset was slow in seven of the cerebrospinal cases, definite symptoms pointing to the brain not developing until after from four days to two weeks. There was some vomiting in four, but no more than would be expected in any slight disturbance at this age. All had more or less fever, while in two the symptoms were those of a "cold." In the other cerebrospinal cases there were mild meningeal symptoms from the first. They were, however, not at all severe or rapid in their movement.

Duration.—The duration in the eighteen tubercular cases with complete records varied between one and forty-four days, being respectively, 1 day, 6 days, 7 days, 8 days, 9 days, 9 days, 11 days, 12 days, 13 days, 13 days, 14 days, 14 days, 15 days, 17 days, 19 days, 31 days, 31 days and 44 days. The duration in the 18 cerebrospinal cases with complete records was 7 days, 10 days, 14 days, 15 days, 18 days, 3 weeks, 4 weeks, 40 days, 7 weeks, 7 weeks, 7 weeks, 10 weeks and 6 months in the cases which died, and 4 weeks, 4 weeks, 5 weeks, 9 weeks and 3 months in those which recovered.

One of the patients who recovered developed internal hydrocephalus later and probably died. Two, at least, of the others were left paralyzed and blind.

Temperature.—The temperature was normal, or nearly so, in five tubercular cases which were under observation from 4 to 6 days at or near the end of the disease. It was also normal in four of the cerebrospinal cases during periods varying from 4 to 16 days in the midst of the disease, after which they passed from observation. It was always under 101° F. in three of each class, and went over 101° F. in 10 of the tubercular and 13 of the cerebrospinal cases. The temperature was markedly irregular in 6 of the tubercular and 14 of the cerebrospinal cases. A terminal rise was frequent in both series.

Pulse.—A slow pulse was unusual in both classes. It was under 100 in but 4 of the tubercular and 2 of the cerebrospinal cases. The lowest points reached were 70 in one case, 80 in two cases and 90 in three cases. A slow pulse was never constant, was never present at two consecutive observations and never lasted, even intermittently, more than a few days. The rate was usually rapid and was over 140 some or most of the time in 13 of the tubercular and in all of the cerebrospinal cases, in several instances being as high as 200. The pulse rate was almost always irregular in both classes and there was always a terminal rise.

Respiration.—A low respiratory rate was also very unusual. It was under 20 in only three of each class, and when low, never persisted any length of time. It went over 50 in 14 of each class. The rate of the respiration was almost always irregular and there was usually a terminal rise. Cheyne-Stokes respiration was noted in 7 of the tubercular cases and in none of the cerebrospinal. It probably occurred much more frequently than appears from these figures, however, as it was undoubtedly not recorded in many instances.

Nutrition.—The nutrition of the babies with cerebrospinal meningitis was on the whole much better at entrance than that of the tubercular cases. Emaciation was usually very rapid in both classes, although in rare instances the nutrition was wonderfully maintained in the cerebrospinal form.

Mental Condition.—In most of the cases of both types the patients were stupid or unconscious throughout the greater part of the disease. One of the tubercular patients, however, was conscious up to the last two days, and another up to the last three days of life. Stupor did not come on in two of the fatal cerebrospinal cases until after twelve days and four weeks, respectively, and three patients who recovered were conscious throughout the whole course of the disease.

Vomiting.—All the patients with cerebrospinal men-

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ingitis vomited at some time. In five the vomiting occurred early and in seven late in the disease, while in the others it was present throughout. There was no vomiting in seven of the tubercular cases; in four it occurred only in the beginning and in four only late; in the others throughout the disease. Vomiting was explosive in only three of the cerebrospinal cases and in none of the tubercular.

Constipation.—Constipation was present in seven of the tubercular and six of the cerebrospinal cases, but was absent in the others. It was not marked in any case.

Restlessness.—Restlessness was noted in three of the tubercular and in none of the cerebrospinal cases.

Pain.—Pain was evident in five cases of each class.

Twitching.—This symptom occurred in six of the tubercular and in one of the cerebrospinal cases.

Convulsions.—Eight of the tubercular and nine of the cerebrospinal patients had convulsions. Nine of each class had none, while three of the tubercular and two of the cerebrospinal had none, unless they occurred after the patients passed from observation.

Neck Symptoms.—The neck symptoms, retraction, rigidity and tenderness, were much more marked in the cerebrospinal cases than in the tubercular, two or more of them being present in every case but one. They were all present in all but three cases, while in these there was either retraction or rigidity, or rigidity and tenderness. Retraction was noted in but six of the tubercular cases, rigidity in nine and tenderness in three, there being no neck symptoms whatever in eight. When they were present, moreover, they usually appeared late in the disease and were very inconstant. In the cerebrospinal cases, however, the neck symptoms usually appeared early and persisted throughout the disease, although they varied a great deal from time to time, not only in degree but in their combinations.

Paralysis.—There was no paralysis in any case in which there was no spasm. When there was spasm it was very difficult to determine whether there was or was not paralysis also, although in four of the cerebrospinal cases it was almost certainly present.

Spasm.—There was definite spasm of the extremities in thirteen of the tubercular and in fifteen of the cerebrospinal cases. It was absent in three of each class during the whole course of the disease, and in four of the tubercular and one of the cerebrospinal as long as they were under observation. Both upper and lower extremities were generally affected, but when only one was involved it was usually the legs.

Kernig's Sign.—Kernig's sign was present in three of the tubercular cases and in nine of the cerebrospinal. In three of the latter it was very marked. It was absent in eight of the tubercular and in six of the cerebrospinal cases throughout the whole course of the disease, and in four of the tubercular as long as the patients were under observation. In the cases in which it occurred it was usually inconstant and often present on but one side, the side also varying from day to day.

Knee Jerks.—The knee jerks varied from day to day in both series, being normal at one time and increased or diminished at another. They were almost always alike on both sides. They were increased at some time in eleven of the tubercular and in ten of the cerebrospinal cases; diminished in three of the tubercular and in five of the cerebrospinal and were absent in two of the cerebrospinal.

Ankle Clonus.—This was noted in but one case, which was of the tubercular type.

Strabismus.—Strabismus was noted in eight of the tubercular and in nine of the cerebrospinal cases. It is possible, however, that it may have been present in other cases and not noted.

Pupils.—Inequality of the pupils was noticed in but one case of each class. Failure of the pupils to react to light was noted in five of the tubercular and in six of the cerebrospinal cases. In most of these, however, the pupils at other times reacted to light. In the rest the reaction was always present.

The fundi were not examined in any of the tubercular cases, but were normal in five of the cerebrospinal cases, in several of which apparently the patients could not see. In one other, changes were found in the optic nerve.

Fontanelle.—The fontanelle was closed in three of the tubercular and in two of the cerebrospinal cases. It was level throughout the whole course of the disease in four of the tubercular and in two of the cerebrospinal cases, while in one of the tubercular it was level as long as the case was under observation. It was always elevated in seven of the tubercular and in eight of the cerebrospinal cases, and always depressed in one of each class. In the rest the condition of the fontanelle varied from time to time.

Abdomen.—The condition of the abdomen varied from time to time in most cases. It was always sunken in eight and always distended in two of each class. Spasm of the abdominal muscles was noted in but one case of each class. In the others the walls were always lax.

Spleen.—The spleen was palpable in three of the tubercular cases and in one of the cerebrospinal.

Leucocytosis.—The blood was examined in only four cases, two of each class. Both of the cerebrospinal cases showed a marked leucocytosis. One of the tubercular showed 9,000 leucocytes and the other 23,200.

Urine.—The urine was normal in the nine cases of the cerebrospinal form in which it was examined. It was normal in nine of the tubercular cases, while in three of the others there were evidences of slight irritation of the kidneys.

Eruptions.—There were no eruptions in any of the tubercular cases and in only one of the cerebrospinal. In this case there was a general herpetic eruption.

Lumbar Puncture.—One or more lumbar punctures were done in eighteen of the tubercular and in nineteen of the cerebrospinal cases. The pressure varied from time to time in the same case. It was designated as low in three of the tubercular and in seven of the cerebrospinal, normal in five of the tubercular and in two of the cerebrospinal, high in nine of the tubercular and in seven of the cerebrospinal, while it was not noted in three of each class. The character of the fluid varied from time to time in both classes. It was noted as slightly turbid in thirteen of the tubercular and eleven of the cerebrospinal, very turbid in two of each class and purulent in four of the cerebrospinal cases. The fluid was clear in three of the tubercular and in one of the cerebrospinal cases.

SYMPTOMATOLOGY OF MENINGITIS IN INFANCY.

It is evident from the figures just given that the picture of meningitis in infancy may differ materially from that which is given in most text-books as characteristic of the disease. Certain points of difference brought out by the analysis of these cases are especially

worthy of note. These are: the usual rapidity of the pulse and respiration; the infrequency and inconstancy of a slow pulse and respiration; the frequency of vomiting, both as an early and late symptom and the infrequency of explosive vomiting; the infrequency of constipation; the infrequency of manifestation of pain; the relative infrequency of convulsions and of Kernig's sign; the variability of the knee jerk; the absence of ankle clonus; the absence of bulging or even the presence of depression of the fontanelle throughout the whole or a part of the course of the disease in certain cases; the almost constant absence of retraction and spasm of the abdominal muscles; and the frequent diminution or absence of increase in the spinal pressure as shown during lumbar puncture. (It is probable, however, that the pressure shown by lumbar puncture often does not correctly represent the cerebral pressure.)

COMPARATIVE SYMPTOMATOLOGY OF TUBERCULAR AND CEREBROSPINAL MENINGITIS.

These figures also show certain points with regard to the comparative symptomatology of the two types of the disease which differ from the usual conception. It is noteworthy that the onset was sudden with convulsions or stupor in four of the tubercular cases, and that it was slow with no symptoms pointing directly to the nervous system until after several days or two weeks in seven of the cerebrospinal cases, while in only four of this type was there the sudden onset usually considered typical. The short duration of the disease in many of the tubercular case is very striking, being but a week or less in three and two weeks or less in twelve of the eighteen cases with complete data. The long duration in many of the cerebrospinal cases is also noteworthy, many lasting weeks or months.

The marked similarity in the degree of the symptoms in the two types is most striking. The behavior of the temperature, pulse and respiration was practically the same in both classes, as were also the mental condition, the vomiting and condition of the bowels. Convulsions and pain were about equally common. There was no essential difference in the behavior of the eye muscles. Spasm of the abdominal muscles was absent in both classes. Restlessness and twitching were rather more marked in the tubercular cases. These symptoms, however, are comparatively unimportant. The neck symptoms were much more marked and more constant in the cerebrospinal cases, while paralysis, spasm of the extremities and Kernig's sign were also, on the whole, more marked and more constant. The tendency to increased cerebral pressure, as shown by the level of the fontanelle, was also greater in the cerebrospinal form. The general condition of the babies was also rather better in this type. The spleen was enlarged rather more frequently in the tuberculous cases, but, as splenic enlargement is so common in infancy and arises from so many causes, it is probably of no importance in the diagnosis between these two conditions. The spinal pressure, as shown by lumbar puncture, was so variable and inconstant that no conclusions can be drawn from it. The character of the fluid, however, showed in a general way certain differences, the degree of turbidity being, on the whole, decidedly greater in the cerebrospinal cases.

The value of the presence of a reasonable cause for tubercular meningitis in differential diagnosis is shown by the frequency with which such a cause was present in these cases. There was a history of direct exposure to an adult with tuberculosis, usually a parent, in six. In another it followed a tuberculous knee and in two others tuberculosis of the lungs. In one it was subsequent to a bronchopneumonia and in another to whooping cough. In five cases, however, there was not only no known exposure to tuberculosis and no previous illness, but the babies were entirely breast-fed.

The examinations of the blood were too few to be of value in differential diagnosis. They showed the usual leucocytosis in the cerebrospinal form. The high count of 23,000 in a tubercular case, however, shows that the presence of a high leucocytosis does not justify the diagnosis of cerebrospinal meningitis.

Repeated lumbar punctures were done in a number of cases of both forms for the relief of pressure, the fluid being withdrawn until the fontanelle was level or slightly depressed. Improvement in the symptoms and in the patient's comfort was noticeable after each withdrawal of fluid, the symptoms returning again with the increase of the fluid. In no case, however, was any effect on the course of the disease noted.

CONCLUSIONS.

The picture of meningitis in infancy is materially different from that of meningitis in childhood and from that given in most text-books. The tubercular form has a more sudden onset and a shorter course than in later life. The symptomatology of the tubercular and cerebrospinal forms is essentially the same at this age, although the symptoms of spinal and, to a less extent, of cerebral irritation are, on the whole, more marked in the cerebrospinal. These differences, however, are insufficient to justify a differential diagnosis. The history or presence of a reasonable cause for the tuberculous form points strongly to this disease, but such evidence is frequently entirely wanting. A positive diagnosis between the two forms is impossible on the symptomatology and can only be made by an examination of the cerebrospinal fluid obtained in lumbar puncture. Lumbar puncture has no curative value in cerebrospinal meningitis, but is very useful for the relief of symptoms in both forms.

DISCUSSION.

DR. F. S. CHURCHILL, Chicago, said that Dr. Morse's experience coincides exactly with his and emphasized his remarks about the value of blood cultures. All physicians know how difficult it is to make a diagnosis of meningitis and how the blood cultures will often clear up the situation. The examination of the sediment of the spinal fluid is very important. Almost invariably it will show the character of the cells—the excess of lymphocytes, especially in tuberculosis. He asked Dr. Morse whether any differential blood count was made and if so if there was any difference in the lymphocyte count. Dr. Churchill stated that he saw an interesting case a year or two ago in which lumbar puncture was done; not, however, for diagnosis, but as a matter of scientific interest. The first puncture showed this excess of lymphocytes, but no tubercle bacilli. The diagnosis was confirmed at autopsy by finding the characteristic lesions. He also asked how many times a day examination was made for Kernig's sign. His observations show that sometimes one will find it and at other times it will not be possible to get it. At the autopsy of the case referred to one of the best pathologists in Chicago found no evidence of tuberculosis, except in the meninges.

DR. W. P. NORTHRUP, New York City, said that he thinks that there is no standard of psychical symptoms in meningitis. In the last epidemic of meningitis in New York it fell to his lot to classify and group the symptoms observed by the medical inspectors, and he came very close to the same hard rock that Dr. Morse struck. It seemed to him that the cases did not present the symptoms which would be expected. Dr. Northrup asked if there is a slow pulse in the onset of the disease. He indorsed what Dr. Morse and Dr. Churchill said

in regard to the lumbar puncture. Lumbar puncture ought to settle the diagnosis as to tuberculous meningitis. He mentioned one case in which practically no fluid could be obtained in the lower portion of the spine; on making the puncture from the upper portion as much as two ounces was withdrawn and this was repeated to take off the pressure. He said that Dr. Morse's paper is interesting in showing the variations from the standard set by the text-books. This has been observed in commission work. It seemed impossible in putting on a number of new inspectors to direct them to judge a case by a certain standard.

The lumbar puncture is also good for another purpose; for instance, in the case referred to an abscess developed in the vault of the pharynx. It seems to Dr. Northrup a good routine plan to do lumbar puncture to give some knowledge of the prognosis.

He said that during the epidemic in New York he had one patient who was sick for 155 days. She was a girl in splendid physical condition, a basket-ball player, and weighed about 120 pounds. In the last days of her illness she scarcely weighed forty pounds. This emaciation seems to Dr. Northrup to be one of the marked features.

DR. C. G. KERLEY, New York City, stated that Dr. Morse's observations coincide with his own. He agrees with Dr. Morse in regard to the value of lumbar puncture in the differential diagnosis of tubercular and spinal meningitis. Routine lumbar puncture is also valuable in another respect; for instance, it is very embarrassing for a man to make a diagnosis of tubercular meningitis, cerebral or spinal meningitis, and have the child get well after the administration of a dose of castor oil. It is bad for the practitioner and worse for the consultant. In recent examinations for the tubercle bacillus twelve cases have shown this bacillus in the meshwork of fibrin which sometimes forms in the spinal fluid.

DR. ARTHUR W. FAIRBANKS, Boston, mentioned two cases, one on account of the peculiar character of the onset, the other because of the peculiar postmortem condition. Both were cases of tuberculous meningitis in children 6 years of age. The first patient was a girl, brought to him because of uncontrollable disobedience, formerly having been a docile child. The condition began with having a temperature of about 101. The mind was perfectly clear, there being nothing but the lack of the former docility. On attempting to examine her the nearest approach was resisted with the greatest ill temper and attempts to scratch and bite. In striking contrast to this was the change which occurred eight days before death, when all resistance ceased and she allowed him to examine her with perfect freedom. Sensation was diminished. Her expression was that of having just wakened from a dream, and this same expression Dr. Fairbanks has seen in two or three other cases. She had internal strabismus in the right eye and had previously had it in the left. The pulse was at first irregular, but became normal. There was sinking away of the abdomen. There was no motor paralysis, except that of the abdominal muscles. On spinal puncture the clot in clear fluid did not reveal tubercle bacilli. She had some weakness in one extremity. The other case had been received in the ear ward of the hospital for otitis. There was improvement and transference was made to the medical ward. Tremor was noticed in each extremity. The discharge from the ear ceased completely. There was no twitching or other motor disturbance. This condition was promptly followed by ataxia and the child became unable to walk. The first thought was of an abscess in the cerebellum from the trouble in the ear, but the trouble had cleared up. During the last twenty-four hours the psychical condition changed. Dullness came over the child and it could not be prevented from falling asleep. The pulse suddenly dropped from 150 to 75, while the temperature steadily rose. Puncture of the spinal canal was made and the fluid showed a fine clot in the clear fluid. This illustrates Dr. Morse's point relative to the relief of symptoms. The child immediately brightened up, though it died soon after. The entire surface of the cerebellum was covered with tubercles and section of the vermiform showed complete caseation. The chief symptoms were ataxia and tremor, dullness of intellect, rise of temperature and lowered pulse.

DR. EDWIN E. GRAHAM, Philadelphia, said that in the differential diagnosis of tubercular and spinal meningitis he thinks almost all physicians are agreed on the value of lumbar puncture. Of course, the non-tubercular form may become the tubercular form. Recently he saw that occur in the wards of the Philadelphia Hospital. The child had been in the hospital for a non-tubercular meningitis for several months, and had been under observation in another institution for about four months. A few weeks before death, fluid removed by lumbar puncture showed the condition to have become tubercular and this was proved at autopsy. There must be a borderline where these two conditions meet, where the non-tubercular variety may become tubercular.

DR. WILLIAM J. BUTLER, Chicago, said that Dr. Morse's careful clinical study has presented the differences between a meningitis of infancy and that of later childhood so clearly that it hardly needs discussion. In the diagnosis of meningitis in infancy, however, the rigid neck, retracted neck, Kernig's sign and Babinski's sign all seem to have a minor place, whereas they are almost essential in the diagnosis of meningitis in adult life. Concerning the differentiation of tubercular and cerebrospinal meningitis, the diagnosis seems practically impossible, unless the meningococcus is found in the spinal fluid. In so far as the blood findings are concerned, Dr. Butler's experience is that they are practically valueless so far as leucocytosis is concerned, although he is in favor of the lumbar puncture because in the tubercular form one will find as high as 30,000 leucocytes present.

DR. J. L. MORSE said that no differential count of white corpuscles was made in the blood. Kernig's sign was only examined for daily; it may have been present at other times of the day when not tested. He feels that it is of comparatively little consequence. Concerning the leucocyte count and a differential diagnosis, of course, a high leucocyte count does not rule out tubercular meningitis, but he thinks that a leucocyte count almost rules it out. In regard to meningitis and the lumbar puncture, he said that at the clinic at the Infants' Hospital lumbar puncture will be done and the various fluids of spinal meningitis will be shown.

THERAPEUTIC VALUE OF CHRYSOPHANIC ACID IN DERMATOLOGY.*

CHARLES JAMES FOX, M.D.

HARTFORD, CONN.

I desire to present in this paper some clinical observations and suggestions as to the value of chrysophanic acid as an effectual therapeutic remedy locally in certain superficial parasitic skin diseases.

Chrysophanic acid is obtained from "Goa powder" which is found in the heart wood or cavities formed by decay in the wood of *"Andira Araroba,"* a tree found in Brazil. It is also found in Rhein, U. S. P., and is produced by the oxidation of Chrysarobinum, U. S. P., a constituent of Goa powder. Lieberman proved that in the latter the acid was very largely present and easily transformed by oxidation. It is a pale orange yellow microcrystallin powder, odorless and tasteless and which, on exposure, to air, turns a brownish yellow color. The remedy has long been used in Brazil, and has spread through Portuguese commerce to India and the East, while its general European and American employment is comparatively recent in certain varieties of skin disease.

It was first noticed in 1876, in London, England, in Fox's "Skin Diseases of India," and then since then it has at times been favorably endorsed as a dermatological remedy.

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

In some 65 cases of psoriasis it exerts a specific power and is therapeutically of great value. The following case reports illustrate its potency:

CASE 1.—Mr. A., aged 28, an active business man, a native of Connecticut, consulted me Jan. 28, 1906.

Family History.—Negative, except that two cousins had had erysipelas.

Personal History.—He had had no illness since childhood, except some infantile disease, but four years ago he noticed a series of patches over the extensor surface of both limbs, the tips of both elbows and both knees, and a few weeks later patches were found on the scalp and trunk. These were dry, red, primarily rounded in character, and covered with imbricated silvery adherent scales, much more copious on the scalp and forehead, but to a lesser extent on the extremities. He gave a history of treatment internally, but with little results, from arsenic, mercury and other special remedies.

Physical Examination.—Height, 5 feet, 10¾ inches; weight, 119 lbs.; temperature was 98.5; pulse, 74; respiration, 17. Lungs, liver, heart, spleen and kidneys were normal.

Treatment.—Believing that local remedies would be more effectual by removing and preventing the renewal of the scales, on January 28, I placed him on internally Pil. phosphori 1/30 grain, three times a day, and locally Unguentum chrysarobini, U. S. P., applied twice a day (10 per cent.) continued with semi-weekly observations until March 1, when pain in the epigastrium with copious diarrhea became constant, showing the maximum effect of the phosphorus, and this was discontinued. Then an ointment containing 20 grains of chrysarobin to the ounce of benzoated lard, was ordered.

Course of the Disease.—On March 8 there was some improvement. Treatment was continued. March 15: There was marked improvement, only traces of the eruption were found on the abdomen and lower extremities. Treatment was continued. March 22: He had now steadily used the ointment since March 1. There were no traces of the eruption found in any portion of the body except faint stains on the right knee. March 29: There were no traces whatever of the eruption and he had no further trouble. The dark, yellow stains had disappeared, following the application locally of weak solutions of chlorinated lime, morning and night.

My conclusions were that after a certain time the antagonism of phosphorus of psoriasis finds its equilibrium, and that the antagonism in question, although real, nevertheless had a limit which falls short of a complete cure, but that the specific value of the acid in psoriasis seems to be now unquestioned. The following will illustrate its value in 114 cases of *eczema:*

CASE 2.—Mr. B., aged 18, a native of France, consulted me Nov. 28, 1905.

Family History.—Negative, except that two sisters had the same eczema.

Personal History.—The patient has always been well since childhood, but has suffered from eczema for the past nine years with no benefit from any plan of treatment.

Physicial Examination.—Lungs, liver, heart, spleen and kidneys were normal; height 5 ft. 8¾ inches; weight, 117 lbs.; pulse was 69; temperature, 98.5; respiration, 17. Eruptions were present on the scalp, face, trunk and lower limbs.

Treatment.—The patient was placed on proper diet and the bowels were kept freely open with tonics, which constituted the only internal remedy. Unguentum chrysarobini, xx grains to the ounce of benzoated lard, was ordered applied locally twice a day.

Course of Disease.—On December 1 there was some improvement, but I ordered the ointment applied morning, noon and night. December 15: The eruption had almost disappeared; treatment was continued. December 20: The patient presented himself with all eruption absent.

It is remarkable that what seems to be no more than a common irritant should possess so peculiar specific a value. Some who are opposed to its use say that it produces an eczema, and indeed it does, but in this very fact resides its virtue. I have used it in children with excellent results.

In Herpes circinatus it is also of value. The remedy was effectual in some 35 cases.

CASE 3.—Mr. C., aged 28, came to my office Nov. 30, 1905.

Family History.—Negative.

Personal History.—He had had no illness except pneumonia, eight years ago, from which he fully recovered.

Physical Examination.—Lungs, liver, heart, spleen and kidneys were normal. He is well-nourished; height, 5 ft., 11 inches; weight, 119 lbs.; temperature was 98.5; pulse, 71; respiration, 18. The eruption was extensive. There was a cluster of vesicles near the spine of the neck extending over the scapula, then to the shoulder and axilla, whence the main line ran along the outer side of the arm until it reached the elbow when it turned inward, followed the inner side of the forearm and went across the palm of the hand, terminating by several patches on the palmar and inner side of the ring finger.

Treatment.—The chrysarobin ointment was applied (20 grains to the ounce) morning, noon and night, with the necessary tonics and laxatives in the form of aperient waters.

Course of the Disease.—On December 5 the eruption had almost disappeared. Treatment was continued. December 15: The patient had no eruption and was apparently cured. December 22: The patient called and reported no return of the affection.

In sycosis I regard chrysophanic acid highly, as seen in the report of the following (one of eleven cases):

CASE 4.—Mr. D., aged 23, a native of Massachusetts, consulted me Nov. 20, 1905.

Family History.—This was excellent, except that one cousin on his mother's side had erysipelas.

Personal History.—He had pneumonia when 10 years old with full recovery; he had no other illness until the present, which was contracted some three months ago while away on a southern trip. Prompt treatment ever since had failed to give any except temporary relief.

Examination.—Papules and pustules were present involving the beard, whiskers and moustache, also to some extent the vertex, accompanied by inflammation and suppuration especially. When the hairs were extracted they seemed to be covered with a whitish powder. The patient was very nervous and had suffered from insomnia for nearly two weeks. Lungs, liver, heart, spleen and kidneys were found normal. Pulse was 68; temperature, 98.5; respiration, 17. There was general emaciation; he was about 22 lbs. lighter than when first taken ill.

Treatment.—Epilation was ordered and 20 grains of chrysarobin to the ounce of benzoated lard twice a day with needed tonics.

Course of Disease.—On November 30 there was some improvement along the sides of the face. I ordered the ointment applied morning, noon and night, and continued epilation regularly. December 3: There was marked improvement. December 7: The patient had fully recovered. December 15: There was no return of the disease and all the affected parts had become normal.

After epilation, the application of the acid seemed to enter the pustules and to strike at the root of the disease, the contents of the pustules being converted into a white substance, doubtless effectually destroying the offending parasite. This opens a new field for favorable observation.

DERMATITIS VENENATA.

Externally the application is liable to produce a peculiar deep, almost copper-red erythema, but after a few days the skin returns to its normal appearance. This shows the detergent properties of the acid, and all stains are soon removed by using a weak chlorinated lime solution. When the application of the drug is discontinued the bright red hue gradually changes to an Indian red; then in a few days desquamation occurs, and very soon the normal white skin is the result. The

best way to apply the ointment is to rub it thoroughly into the scaly patches with a swab or tooth-brush. As it stains the nails badly, I prefer, sometimes in order to confine the ointment to the diseased tract, to rub it into a soft paste with water and to rub it over the patches, especially in psoriasis from which the scales have been removed. When this is dried, a layer of thin collodion should be applied over each patch and allowed to harden as a protective coating. Subsequently the patches are removed and the white skin appears. My favorite formula is: ℞ Chrysarobini, 10 parts; acidi salicylici, 10 parts; etheris, 15 parts; collodii flexilis add 100 parts.

Paint over the patches every day until they disappear and smooth skin appears. This preparation should be used with great caution, however, and when the skin is irritable and the congested patches are increasing in numbers it is then contraindicated, like arsenic internally. When the eruption is disappearing, or when chronic-thickened patches remain unchanged for a long time, an ointment of varying strength will effectually and speedily remove the scales and lessen the infiltration. I am not in favor of using the remedy on the scalp or face ordinarily, because it discolors the hair and conjunctivitis may follow.

706 Connecticut Mutual Building.

DISCUSSION.

DR. HENRY G. PIFFARD, New York City, gave a brief review of the early history of chrysarobin, which is made from the goa powder, and comes from Bahia, a Brazilian port. The speaker said that there is a vast difference in the various preparations of the drug that are on the market; some are slightly inert, some have very little effect, and some are very active.

DR. WILLIAM S. GOTTHEIL, New York City, said that in using chrysarobin he did not expect to get the proper effect from the drug unless the preparation was sufficiently strong to produce a decided reaction of the skin. He frequently used a 30, 40, or 50 per cent. ointment, which in that strength made a semi-solid mass, his object being to produce an inflammatory reaction in the skin. Most of the poor results from the use of the drug could be attributed to the weak or inert preparations that were applied.

DR. JAMES C. WHITE, Boston, said that he did not agree with Dr. Gottheil that it was necessary to produce a dermatitis in order to get the beneficial effects of chrysarobin. Personally, he preferred to use it strong enough to get its curative effects only, without producing a dermatitis. The latter was largely a matter of individual idiosyncrasy; in some persons a dermatitis would develop from its use, while in others such a result would never follow. The same is true of certain other drugs.

DR. R. A. MCDONNELL, New Haven, Conn., in referring to the objection to the use of chrysarobin on the scalp for fear of causing a conjunctivitis, said that he had applied it in many cases of fungous disease of the scalp with very satisfactory results, and without producing a conjunctivitis. He regards it as one of the most reliable remedies, particularly in parasitic diseases of the scalp.

DR. EDMUND L. COCKS, New York City, said that about a year ago he treated ten cases of parasitic disease of the scalp with chrysarobin with undoubted success, and without any resulting conjunctivitis or dermatitis. The scalp was first shaved, and then a solution of chrysarobin, one dram to two ounces of collodion, was painted on every second or third day, and reapplied as often as the application cracked.

DR. HENRY C. BAUM, Syracuse, N. Y., said that he thought the chrysarobin should only be used on the scalp in exceptional cases. Kaposi himself had warned his pupils regarding the possible dangers of applying the drug in that locality. Dr. Baum said that he had seen a number of cases of violent dermatitis follow the use of chrysarobin on the scalp. He recalled one instance where a physician had applied a small amount of chrysarobin to a ringworm of the nose in a young woman. It produced a violent dermatitis which extended to the eyes, and culminated in complete blindness. In every instance in which the drug was applied to the face or scalp, the case should be watched with the greatest care, and only a small area treated at a time until the individual idiosyncrasy of the patient could be determined.

DR. L. WEISS, New York, said that in using chrysarobin on the face or scalp, the possible resulting dermatitis could be prevented from spreading by the application of zinc gelatin, which acts as a compress.

GENERALIZED MULTIPLE PIGMENTED SARCOMA ORIGINATING IN THE SKIN.*

WILLIAM FRICK, A.M., M.D.
AND
FRANK J. HALL, M.D.
KANSAS CITY, MO.

The subject of this paper is generally recognized as presenting a distinct clinical picture, differing from all other sarcomata. The metastases may invade all the soft tissues. The distribution of the metastases appears to be by way of the blood stream and the lymphatics. There is always pigmentation, sometimes much, at other times little. In the same case we may find one nodule black and another white. The pigment is unevenly distributed. Some of the metastatic tumors appear entirely without pigment, while others in the same case are deeply pigmented. This pigment is the dark-brown, granular material known as melanin and is the same material that we find in normal skin and in pigmented moles. The disease is one of the most fatal of malignant tumors, and after metastases take place the case is practically hopeless.

The cases of multiple pigmented growths which are recorded as recovering either spontaneously or by arsenical treatment are evidently not of this variety, but probably can be placed in another class, described by Boeck[1] as "multiple benign sarcoid of the skin." Boeck has still further studied this disease in more recent cases and concludes that it is allied to tuberculosis, and therefore suggests the name *benignes miliar lupoid*[2] as a suitable one.

The beginning of this very malignant disease is most frequently in a pigmented mole, but not always so, as one would be led to believe by Unna's statement.[3] Crocker[4] reports a case which began as a blister, apparently due to friction on the outer side of the right foot. In the course of five months it became a fungating mass, slightly pigmented. The primary tumor was excised and followed promptly by metastatic tumors distributed through the body generally, which proved fatal in four months from the removal of the first tumor. In his report of a series of cases, J. C. Johnson[5] says of Case 7: "A most careful search failed to reveal any nevus or other melanotic growth of the skin or mucous membrane. There was no scar resulting from the removal of such tumor." In the body of his paper he intimates that the origin of this case may have been in the cortical por-

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Jour. of Cutaneous and Genitourinary Diseases, vol. xvii, p. 543.
2. Archiv. für Dermat. und Syph., vol. lxxiii, p. 332.
3. "Histopathology of Diseases of the Skin," p. 745 (Walker's Translation).
4. Crocker: "Diseases of the Skin," third edition, p. 102.
5. "Melanoma," Jour of Cutaneous Diseases, vol. xxiii, p. 59.

tion of the adrenal, and cites another case in which the origin was claimed to have been from the same structure. In one of the cases reported in this paper the first tumor observed was on the glans, at the edge of the meatus. In a few months this became a fungating mass, involving the entire glans penis, on account of which the penis was amputated.

Melanotic whitlow is also mentioned by Crocker and by Johnson. It was first described by Hutchinson and begins at the nail fold without the appearance of a nevus.

We must also recognize the fact that pigmented sarcomata originate in the eye, and if not early removed give rise to the same generalized metastatic tumors. There seems to be no attempt on the part of oculists to call these by any other name than sarcomata. Johnson, in his work on "Melanoma,"[6] gives statistics gathered by Eves, which indicate that of 261 cases of generalized melanotic tumors 84, or about 32 per cent., originated in the eye, while 177, or about 68 per cent., originated in the skin.

Before 1893 the disease was recognized as "multiple pigmented sarcoma." In that year Unna published his work on the origin of pigmented moles[7] or soft nevi. In this work he tries to show that these are derived from epithelium, and hence that tumors originating in them are carcinomata. To these he gives the name "nevocarcinoma," a name which he considers expressive of the character and also of the origin of the disease. The work and the opinions this great investigator gives to the world always demand consideration. His opinion on this subject gave a new impetus to the original work and caused a difference of opinion among investigators. Some agree with Unna, while others do not. In this country Gilchrist,[7] Schalek[8] and Ravogli[9] are advocates of Unna's theory. The recent work of J. C. Johnson on "Melanoma" is intended to prove that the tumor cells of pigmented moles are derived from the endothelium of superficial lymphatics.

This investigator has gone thoroughly into the histology of "soft nævi" and also of malignant melanotic tumors and his opinion is certainly entitled to careful consideration. In this work, however, he also records other melanotic growths which he unhesitatingly pronounces carcinomatous. There are also other cases of undoubted melanotic carcinomata on record. Prof. Eduard Lang[10], February 17, 1905, reported to a Vienna medical organization, (*K. K. Gesellschaft der Aerzte in Wien*) a case of very extensive growths in a man 52 years old. The duration of the disease was 23 years and very many pigmented lesions were present, which proved on histological examination, to be carcinomatous.

In 1904, Dr. W. W. Keen read before the surgical section of this Association a paper entitled: "The Danger of Allowing Warts and Moles to Remain Lest They Become Malignant."[11] This paper is of great clinical interest. It gives the clinical histories of 25 cases of malignant tumors originating in these apparently innocent growths. Some of these were sarcomata while others were carcinomata. From case histories the carcinomatous melanotic tumors appear much less rapid in their fatal effect.

Prognosis in these cases is of the very worst. Treatment seems to accomplish nothing. Arsenic and other tonics are of no avail. Coley's toxins do no good, and even the wonderful *x*-ray seems of no value whatever. The only thing that offers any encouragement is complete excision of the primary tumor. Even this fails many times, either because the operation is not radical enough, or because the tumor cells have already been carried some distance from the original site of the disease. In the first case of this series, the original growth was apparently completely excised and yet it was only a few months before metastatic tumors made their appearance. In a number of Dr. Keen's cases the original tumor was completely excised, but the operation was followed in a short time with generalized distribution and death. Yet if these tumors are excised, with a wide margin, quite early in their development, a few days after growth can be observed, we believe a fatal termination can often be avoided. The patient in the first of the following reported cases was observed rather closely by me during the last three months of his life. The development and multiplication of tumors were rapid.

Case I.—Male, aged 65. He has been married 42 years and has raised a family of four children, all of whom are living and well. His wife is also living and moderately healthy.

Family History.—His father died with pulmonary hemorrhage (tuberculosis) at 55. His mother died at 35 with some acute puerperal disease shortly after the birth of a child. One sister is living and healthy at the age of 68. One brother died in infancy; one with acute paralysis when 63 years old; one was a "hard drinker" and died at 66 directly following a spree, from some cause not known; and the last brother died at 65 with "nervous prostration." This last brother had a hard lump on one hand in the last years of his life.

Personal History.—The patient states that eczema was a family inheritance, and that most members of the family suffered more or less with this disease in youth. The patient had "scald head" from babyhood until about 20 years old. Aside from this he was a healthy man all his life until about July, 1903. His occupation was farming until 1897, first in Minnesota, then in Nebraska and Oklahoma. He served one year in the Army, under Thomas in the Civil War. In 1897 he moved to Salt Lake City and engaged in mission work—keeping rooms and providing food for the poverty-stricken class of people there.

For many years (he does not know how long) he had a mole of a brown color on his back between the shoulders. He first noticed this begin to grow in July, 1903. About a month previous to this he had a pleurisy on the right side. The mole seemed to become inflamed and painful and continued to grow. He sought medical advice and was advised to have the tumor excised, which he did perhaps two months after first observing the increase in size. A few months later he observed a growth in the right axilla and another on the right side of the neck. These were entirely subcutaneous.

Examination.—I first examined this patient in July, 1904. He came to see me because his general health seemed to be below par, and because instead of one tumor on his back a group of six or eight had made their appearance. The one in the axilla was becoming uncomfortable on account of its size. It was at that time about the size of a hen's egg and quite hard. Those grouped on the back varied in size from a pea to an ordinary marble; some were almost entirely subcutaneous while others quite decidedly involved the skin. Some were bluish in color while others seemed simply red, no pigment apparent through the skin. One of the most prominent of the skin tumors was excised for histologic examination. It was quite firm to the touch, and alveolar in structure, with a moderate amount of pigmentation.

Subsequent History.—After this he went to the sanitarium at Battle Creek, Mich., where another nodule was excised, and he was advised to return home since chances for successful treatment were practically nil. Arsenical treatment was given

6. Jour. of Cutaneous Diseases, vol. xxiii, pp. 1-49.
7. Jour. of Cutaneous und Genitourinary Diseases, vol. xvii, p. 117.
8. Jour. of Cutaneous and Genitourinary Diseases, vol. xvii, p. 145.
9. Jour. of Cutaneous and Genitourinary Diseases, vol. xx, p. 510.
10. Wiener klin. Wochft., Feb. 23, 1905.
11. The Journal A. M. A., vol. xliii, p. 96.

a trial without benefit, also tonics such as quinin, iron and strychnin. No improvement followed, but more nodules continued to appear, and they were seen to appear farther from the site of the original tumor. As a last resort hypodermic injections of Coley's toxins were administered. Six injections were given from August 7 to September 2 without any improvement whatever, but instead, new nodules continued to appear almost daily. Since the injections rendered him quite uncomfortable for two or three days, a rise of temperature following each one, we listened to his objections and desisted from its farther use. By this time the nodules were scattered all over the body, back, abdomen, legs, arms and even the backs of the hands. Patient said he felt as though there were some growing in his stomach. As the disease advanced it seemed to progress more rapidly. About the first of October the man was no longer able to retain food, vomiting was frequent, and food taken in the stomach seemed to distress him, so he quit taking any for a week or more. Still the nausea and vomiting were present. A little later his right leg became cold and numb —due to pressure of a large tumor as ascertained at autopsy. October 26, at 10 p. m., he died, and at 9 a. m. October 27, an autopsy was held.

Autopsy Report.—Man, 6 feet 2 inches in length, emaciated. Tumors distributed over the surface of the body generally. Small on abdominal surface and purple blue. Over back, larger and black in color, elevated mushroom-like. Subcutaneous fat practically nil. Abdominal cavity contains small quantity of gas. Pericardium full of fluid. Whitish-red tumor nodules on the surface of pleura and liver, in mesentery and in the epiploica of colon. They vary in color from pinkish white to dark liver color. Small amount of serous fluid in abdominal cavity. Dilated gall bladder filled with bile and reaching to crest of ileum. Thoracic duct full of nodules. Large white nodule situated at the bifurcation of the iliac artery. The stomach presents a large dilatation at the cardiac end and appears diminished in size at the pyloric end. Stomach is slightly adherent at spleen. Large masses of tumors cover a diphragmatic hernia at the cardiac end of the stomach. Half pint of bile-stained fluid in stomach. No nodules in the stomach. Pancreas contains tumor nodules throughout its length. Large tumor masses at head of pancreas occlude common duct, causing dilatation of gall bladder. Left adrenal gland much enlarged and full of tumor nodules. Left kidney normal in size and contains a few subcapsular tumors and many in the perinephritic tissue. Large quantities of clear fluid in left pleural cavity. Left lung small and flabby. Peribronchial portion contains tumor masses. The upper portion of lower lobe is emphysematous. Section into this region reveals a quantity of greenish-yellow pus. Right lung normal in upper portion, but presents consolidation in lower half and over the surface is scattered a small number of white nodules. The consolidated portion when cut discharges quantities of bloody fluid. No deep-seated nodules discovered. Pericardium full of nodules greatly thickened and distended by straw-colored fluid. The heart presents innumerable tumor elevations over its entire surface, destroying the landmarks of the organ. Nodules are all firm and vary in color from white to a deeply pigmented—almost black. Liver is normal in size, of a dark brownish color, mottled with lighter areas and presents on its surface several nodules.

The most striking thing in this case is the great tumor development on and through the heart, and next to this the number developed in the thoracic duct.

We are indebted to Dr. Geo. M. Gray of Kansas City, Kans., for the history of this case.

CASE 2.—Male, aged 33, was admitted to St. Margaret's Hospital, Nov. 17, 1904. Nationality Irish, single, occupation, stone-cutter. Residence, Kansas City, Mo.

Previous History.—He had what was supposed to be a chancre 18 months ago, and after treatment for a period of six months the penis was amputated. (The surgeon who amputated the penis writes that the growth was cauliflower-like and involved the entire glans. He saw the case first Dec. 11, 1903, and performed amputation Dec. 22, 1903. He supposed it a case of syphilis and gave antisyphilitic treatment. The enlarged glands in the groin diminished in size after the amputation. The patient disappeared from his observation about three weeks after operation.) At the time the penis was amputated the inguinal glands were enlarged and one in either groin above Poupart's ligament was as large as the end of the index finger. These continued to grow after the penis had healed, and one on the right side broke down, discharging a very offensive fluid, and on account of this condition he applied to St. Margaret's Hospital.

Family History.—His father is dead; his mother is living and in good health. One brother and three sisters are living and in good health.

Present Illness.—The trouble began 18 months ago with a sore on the penis near the meatus, which persisted in spite of all treatment for six months, when the penis was amputated. This sore made its appearance about three weeks after venereal exposure and was supposed to be venereal. Before the penis was amputated the glands in both groins began to enlarge, but following the amputation he thinks they diminished somewhat except the larger ones. During the past 11 months they have been steadily enlarging until two weeks ago, when the mass on the right side broke down, discharging a bloody fluid of very bad odor.

Examination.—This revealed a large mass on each side of median line well above Poupart's ligament. One on right side was ulcerated. These masses were excised Nov. 21, 1904. At the time of operation I could make out nodular masses extending down into the pelvis on either side supposed to be glands.

Postoperative History.—He left the hospital Jan. 26, 1905. Before he left it was observed that something was not right mentally; and he left the hospital without permission or advice from the doctor. After this date we lost track of him for 18 days, but we can readily understand that during these days there was continued development of tumors with more evidences of brain disturbance. On February 13 the ambulance of the Kansas City General Hospital was sent to move him from a rooming house to the hospital. It seems the driver or those in charge of the ambulance did not fully appreciate the man's condition and he was permitted to fall down a flight of stairs. He was picked up in an unconscious condition and taken to the hospital, where he died the next day without regaining consciousness. The autopsy was made about 24 hours after death. The development of the sarcomatous tumors in the brain was considered sufficient to account for the mental disturbances noticed in the last few weeks of his life and for the unconscious condition 24 hours before death.

Autopsy Report.—Male, aged 33, length 5 feet 7 inches, weight 140 pounds.

External Appearance: The whole anterior surface of the body is covered with dark, smooth nodules varying in size from a wheat grain to a walnut and having a pale blue color through the skin. The glans penis has been amputated and there are operative scars in both inguinal spaces.

Brain: On removing skull the brain is found to contain several deeply pigmented nodules about an inch in diameter that adhere to the dura.

Abdomen: On opening the abdomen the intestines are found to be collapsed and the great omentum crumpled up under the stomach. Abdominal cavity free from fluid. Mesentery of small intestine full of blood. Duodenum bound down by adhesions.

Stomach lies well to the left of body and contains fluid; surface is smooth. From cut surface tarry blood exudes.

Liver is somewhat large, right lobe dark prune color. Right adrenal taken away with liver. Liver contains no nodules, but cut surface is a dark mahogany brown and blood exudes from it. Gall bladder is normal—free from stones.

Spleen normal in size, olive-shaped, anterior portion contains chestnut-sized nodule which is soft in consistency and contains cystic center.

Pancreas normal in size and position. Splenic end enveloped in adhesions containing tumor nodules.

Sigmoid flexure shows large lymphatics.

Left kidney possesses no perinephritic fat and lies in normal position. Adrenal attached to kidney. Kidney surrounded by a

mass of tumors which lie external to the gland. Section of organ shows reddish-brown surface, uniform in color except at tips of pyramids, which are whitish. No nodules in kidney. Right kidney surrounded with a quantity of clotted blood. Organ similar to left except that there is a large nodule within the pelvis. Retroperitoneum full of nodules along the line of great vessels especially. Some tumor masses in the anterior peritoneum.

Thoracic Cavity: Lungs collapsed, left free and right adherent in upper portion where the apex is tightly fixed and contains many calcareous deposits. Lungs present hypostatic condition in posterior part. Anterior portions crepitate throughout. Nodules of various sizes all through the lungs. Pericardium covered with nodules up to the size of a pea. Pericardium contains small quantity of fluid. Two dark corn-grain sized nodules situated at base of heart near pulmonary artery. Small quantity of thin blood in right heart. Left heart contains tarry blood. Valves of the heart normal and muscles also normal.

Within the urethra near where the glans was amputated is a small, black, pea-sized tumor. It is situated in the mucosa

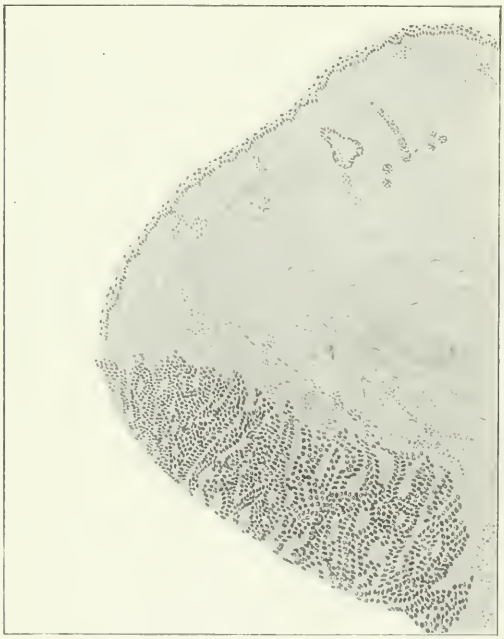


Fig. 1.—Low power drawing from a small, cutaneous nodule from Case 1.

and tends to obstruct the lumen of the urethra. The tunica vaginalis of the right testicle contains fluid. A few pea-sized tumors are found beneath the tunica. Within the testicle substance one small nodule. Left testicle contains no palpable tumor.

The point of greatest interest in this autopsy was the discovery of the tumor in the urethra. It was very dark, in fact the blackest one found and involved only the mucous membrane. We were led to speculate on the possibility of this being the real primary tumor in this case. I have not been able to find, in the literature, another case of the original tumor developing on or in the penis. Cases of sarcoma of the penis have been reported, but not of this variety, so far as I have been able to ascertain.

CASE 3.—This case was in the practice of Dr. George W. Davis. Dr. Reyling made the histologic examinations and sent specimens to various other pathologists. It has been reported as Case 3 in Dr. Johnson's[12] series of cases. The photographs are of this case and show the distribution of the tumors over trunk, arms and face. Tumors were also on the other parts of the body. The photographs were taken and kindly furnished me by Dr. J. W. Perkins, who saw the case in consultation. The history of this case was difficult to obtain, but the origin was supposed to be in a pigmented mole. The tumors were extraordinarily numerous and very dark. Dr. Johnson says, in his report, that the very dark color was due partially to minute hemorrhages into the tissue.

We wish to place case 4 on record as it is one of the infrequently observed cases of melanoma occurring in the black race.

Patient.—This was a colored woman who came to the Kansas City General Hospital about two years ago because of a decline in health and the general development of tumors all over her body. She was about 30 years of age and of good muscular development. No family history was obtained by me.

Examination.—Her skin was a dark brown, but the tumors were much darker than the other skin. They varied in size from a pinhead to a good-sized marble, and some of them stood out very prominently, in shape resembling very much an or-

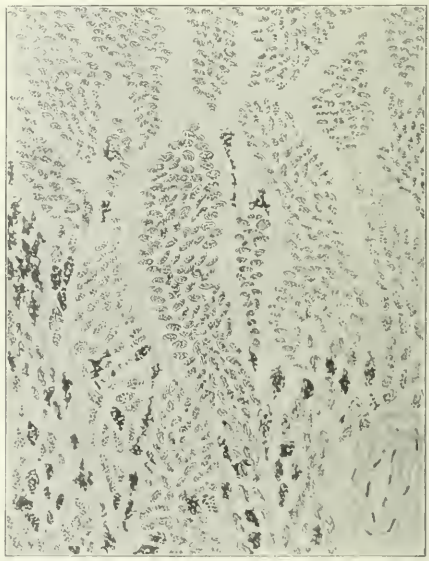


Fig. 2.—High power drawing from the same, showing alveolar structure, distribution of pigment and type of cell.

dinary, smooth doorknob. Many of these tumors left no doubt of the involvement of the skin in the growth, while others seemed to be subcutaneous. The origin was said to be in a mole. In the week that this patient was at the hospital many new tumors were observed springing up. The case was certainly one of this character.

Dr. T. C. Gilchrist[13] reports a case in a negro man, with microscopic report of tumors, and remarks that he could find but two other cases recorded in colored people. We intended securing a nodule for histologic examination and also a photograph of the patient, but she escaped from the hospital before either could be done, and was not heard from afterwards.

12. Jour. of Cutaneous Diseases, February, 1906.
13. Jour. of Cutaneous and Genitourinary Diseases, vol. xvii, p. 118.

DISCUSSION.

DR. DAVID LIEBERTHAL, Chicago, said that he thought the title of the paper presented by Dr. Hall was misleading. Instead of multiple pigmented sarcoma, it should have been melanosarcoma. The name multiple pigmented sarcoma should be limited to the type first described by Kaposi in 1879, of which there are over a hundred cases recorded. This type differs from melanosarcoma in its clinical aspects and course. It usually first develops on the dorsal surface of the hands and feet, and gradually spreads upward, at last invading the internal organs, such as the liver and intestines, especially the large intestine, terminating fatally in six, seven or even twenty years. It never develops from warts, but has its origin in apparently normal skin. In its histologic appearance it differs markedly from melanosarcoma in the arrangement of the cellular elements. The pigment in melanosarcoma is mostly melanin, while in the multiple pigmented form hemosiderin is prevalent. Both of these forms of sarcoma, Dr. Lieberthal said, are ultimately fatal. With melanosarcoma the course is usually a brief one. As regarded treatment, nothing seemed to have any influence but the *x*-ray, which, according to latest reports, benefits materially the lesions of the multiple pigmented type.

DR. A. RAVOGLI, Cincinnati, said that he agreed entirely with Dr. Lieberthal regarding the distinction between multiple pigmented sarcoma and melanosarcoma. He recalled a case of the latter affection which proved fatal in the course of four or five months. It first appeared as a small, warty growth on the foot, and was followed in a short time by an enormous enlargement of the glands in the groin, and the case rapidly progressed to a fatal issue. Dr. Ravogli also mentioned a case of multiple pigmented sarcoma of the Kaposi type, consisting of smooth, brownish spots on the leg, and which ran a course extending over a period of five years. These cases, he said, must also be differentiated from melanosarcoma, of which affection he saw an instance in a woman who presented herself with an apparently simple lesion which was regarded as a nevus. Starting from this lesion, the disease rapidly spread over the chest, the breasts also becoming involved, and the patient died in the course of four or five years, in spite of the use of the *x*-ray. Large doses of arsenic were also given without avail. It is important to differentiate between these three affections, he said, especially on account of the different prognosis that is attached to each.

DR. ALEXANDER J. ANDERSON, Newport, R. I., reported a case that came under his observation about 18 months ago. The patient was a woman who had had some glands removed from the left groin about five years before, which were supposed to be carcinomatous. When Dr. Anderson first saw her, about 18 months ago, she had a pigmented lesion about the vulva, which was removed by a surgeon. It had the appearance of a melanotic growth, but the pathologist pronounced it a lymphoma. A year later, when Dr. Anderson again saw the woman, the pigmentation at the site of the previous lesion was well marked and she had a new growth, about the size of a duck's egg, in the right groin, which proved to be a melanosarcoma. The patient recovered from that operation, but before she could receive further treatment, metastatic growths developed in the breast and elsewhere, which proved fatal in the course of a few months.

DR. B. W. STEARNS, Binghamton, N. Y., stated that he had given the subject considerable attention for the past six years, and he is inclined to believe that too much emphasis is laid on the classification of malignant growth and too little on the treatment. He also referred to the fact that the course and development of these growths seems to be influenced by the constitution of the patient. Their locality and other factors should be borne in mind in diagnosis. Thus far the only treatment accepted by the profession generally is the early removal either by the knife or by caustic pastes. If all the physicians of a city or certain locality would place all cases of malignant growths under the care of one physician who is interested in the subject, perhaps in the future some more successful line of treatment might be developed. He referred to a case of epithelioma of the temple which was excised. At the same time there was some enlargement of a section of the parotid gland, which was not interfered with, the reason given by the surgeon being that it would have destroyed the duct. After three years the growth returned at the site of the original lesion and gradually extended over the face. A fatal issue is expected, and all that can be done for the patient now is to keep her comfortable by the application of a dressing which relieves the pain and removes the offensive odor. The dressing in this case is:

R.	Thiosinamin	gr. xx	1 | 3
	Atropini	gr. i	06
	Adrenalin, chl. solut.		
	Ergotini		
	Fld. ext. thuja, āā	ʒss	2
	Cocainæ hydrochlor	gr. x	6
	Alcoholis dil. q. s.	ʒi	30

This was applied with absorbent cotton and gauze daily.

DR. HALL said that he is not in a position to discuss the subject in a clinical way, as his work is limited to pathology. He agreed essentially with the statements made by Dr. Lieberthal.

THE TREATMENT OF LATERAL CURVATURE OF THE SPINE.*

ROBERT W. LOVETT, M.D.
BOSTON.

The treatment of lateral curvature of the spine presents the most difficult problem in the orthopedic surgery of to-day. This is, in part, because of the intrinsic difficulty of the problem and, in part, because the treatment of this condition has been, in a measure, relegated to the domain of gymnastics and, to a certain extent, set apart from other surgical deformities and considered as an affection outside of the ordinary surgical principles.

The treatment has consisted, in a large measure, of inadequate and irrational gymnastics sanctioned by tradition and often carried out by persons with a very imperfect knowledge of the subject.

The following statistics[1] collected among school children show lateral curvature of the spine in a surprisingly large percentage of all cases:

	Number of Children.	Per cent. of Scoliosis.
Guillaume (Neuchatel) ..	731 (boys and girls)	29
Krug (Dresden)	1,418 (boys and girls)	25
Hagmann (Moscow)	1,664 (girls)	29
Kallbach (Petersburg) ..	2,333 (girls)	26
Scholder (Lausanne) ...	2,314 (boys and girls)	24.67

There is no reason to suppose that American children are any less affected than the children in Germany, Russia and Switzerland.

Any pathologic condition which affects 25 per cent. of the children of a community is worthy of serious consideration. The deformity should be considered as a definite surgical problem to be met by adequate surgical means.

In taking up the treatment of this condition it is of great importance to recognize two distinct types which have not been sufficiently separated. These are (1) the postural or functional and (2) the structural or organic type.

THE POSTURAL OR FUNCTIONAL TYPE.

This type of lateral curvature of the spine has been described as "lateral curvature without rotation," faulty attitude, functional malposition and by similar names,

* Read before the Surgical Section of the Medico-Chirurgical Faculty of Maryland at Baltimore, Dec. 15, 1905.

1. The data on which much of this paper is based are contained in these articles: R. W. Lovett: Boston Med. and Surg. Journal, June 14, 1900; Oct. 31, 1901; March 17, 1904; Sept. 28, 1905. Also Am. Jour. of Anatomy, vol. ii, No. 4, p. 457. Schulthess, Schanz and Lovett: Verhandl. d. Deutsch. Gesellch f. Orth. Chir., vol. iv.

all of which are fairly descriptive. It is characterized by a single curve of the spine of slight degree, the deviation of the most divergent of the vertebræ being rarely more than an inch from the median sagittal plane of the body. This median plane of the body is best recognized by holding a string with a weight on its lower end behind the patient which serves as a plumb line falling below in the cleft of the buttocks. The spinous processes of each of the vertebræ should be marked on the skin by ink or a flesh pencil. In the normal spine each one of the marks should lie under the plumb line, and total scoliosis is recognized by a gradual sweep of the vertebral column, most often to the left, 90 per cent. of all cases of total scoliosis being to the left and 10 per cent. to the right.

Taking this, the most common type of postural curvature, the left total curve, the diagnostic points are four.

1. The spine is involved in a gradual sweep, with the convexity to the left, returning nearly or quite to the median line at the top.

2. The left shoulder is high and the right shoulder is low.

3. In looking down on the child from above, the shoulder girdle is seen to be twisted in its relation to the pelvis and no longer lies in the same plane, the right side of the shoulder girdle being carried back and the left side forward. This is clearly seen by standing above the child and sighting the back of the upper thorax against the buttocks, when it will be seen that the right side of the shoulder girdle is further back than the left. This is an expression of the rule that a spine can not be bent laterally without at the same time twisting.

The attitude is, therefore, a physiologic malposition within the normal movements of the spine and implies no organic change in the vertebræ, ligaments or muscles. Such changes exist, of course, in cases of long standing, but so long as the type described persists there is no evidence of anything further than an exaggerated physiologic position.

4. If the child with a left total scoliosis bends forward until the trunk is horizontal, the right side of the back is generally to be found higher than the left when one glances along the level of the spine from behind or in front. The elevation is very slight and has been the cause of much discussion, having been very imperfectly understood and being described under the names of concave-sided torsion, retro-torsion, etc. It is evidently merely the persistence of the backward twist on the right side described under the previous heading, which is carried over into the position of forward bending. It is to be reproduced with the model or child who stands with the right foot on a book and is within the physiologic limits of the normal movements of the spine. Postural scoliosis is, therefore, best described by the name "faulty attitude," and its treatment is greatly cleared up by this conception. Such postural curves may persist unchanged as total curves, they may be cured, or they may be changed into compound structural curves.

Transitional cases from the postural curves to structural curves are, therefore, to be expected, and it is well to be on one's guard against apparent cases of postural scoliosis in which one or more of the signs described are wanting, as many of these on investigation will be found to be cases changing from postural to structural types.

STRUCTURAL OR ORGANIC LATERAL CURVATURE.

In this form of lateral curvature there is to be found an organic change in the vertebral column and its attached structures. Structural curves may be either single, involving the whole or a large part of the spine, in a curve convex in one direction, or they may be compound (combined), consisting of two curves in different parts of the spine with their convexities in opposite directions. Even three curves may be seen, one being the principal curve with two curves in the opposite direction, one above and one below. One curve is evidently the primary one and the others are spoken of as secondary or compensatory, although it is not always possible in severe cases to identify the original curve.

The characteristic feature of structural scoliosis is the presence of a backward prominence of the chest or loin on the convex side of the lateral curve, that is the side toward which the spine yields. In the postural scoliosis described above it has been seen that the backward prominence is on the concave side of the lateral curve, that is to say, in a left curve it is on the right side. In structural scoliosis this prominence, on the other hand, is always on the left side in left curves and on the right side in right curves. In extreme cases it forms a very great deformity and can be clearly seen when the patient stands erect. In mild cases the patient must bend forward with the trunk in the horizontal position to enable this so-called rotation to be clearly evident when it is noted in a difference of level of the two sides of the thorax or of the two sides of the lumbar region. This convex-sided rotation is not within the normal mechanism of the spine and is to be regarded as a superadded pathologic phenomenon due to the yielding of the structures forming the vertebral column. In many cases we can assign no better cause for it than to assume an abnormal plasticity of bone in the individual case which has led the vertebræ, under the influence of unequally distributed weight, to yield to one side and in yielding to twist.

In case of every structural lateral curvature, therefore, we have two elements to consider: (1) the lateral curve and (2) the twisting of the vertebræ toward the convexity of the lateral curve (the rotation). The curved region in structural lateral curvature becomes stiff and loses much of its mobility, while distortion of the body outline, prominence of one hip, elevation of one shoulder and a lack of symmetry in various directions are the expression of the condition. The vertebræ are changed in shape, the ligaments and muscles on the convex side shortened, and a very decided resistance to the restoration of symmetry exists in the column and its attached structures. It is evident, therefore, that the same treatment is not required for the postural and structural cases, and the two varieties of treatment will be discussed separately.

TREATMENT OF POSTURAL SCOLIOSIS.

Defining postural scoliosis as faulty attitude, it is evident that the treatment consists in the substitution of a correct attitude for the faulty one. The prognosis is good for a complete recovery and efficient treatment is satisfactory. The correct attitude is to be obtained by restoring flexibility to the column if it is limited on one side, by exercises consisting of bending to one side, hanging, circumduction of the trunk and similar simple exercises. Having a column flexible in all directions to work on, the patient is then given what amounts to the "setting up drill" of the recruit in the American

army. In other words, he is taught to stand correctly by a series of exercises maintaining the erect position. The treatment lies within the range of any good teacher of gymnastics who will carry out the instructions of the surgeon.

The causes of failure are to be found in the fact that such children are generally in poor muscular condition and are often overworked at school or under unfavorable conditions at home. Having placed the patient under the most favorable conditions obtainable and having corrected errors of vision if they exist, having built up a short leg if it is present, having removed the entire weight of the clothing from the tips of the shoulders (where it ordinarily is carried by the child's waist), the patient should work on the exercises described for from half an hour to two hours a day for a period of some weeks. The exercises should not be pushed beyond the limit of fatigue, and after the active period has ceased the child should do home gymnastics and be kept under supervision for at least a year. The length of treatment, the period of the exercises and the extent to which they can be pushed will depend on the vigor of the child, as half-way measures are not likely to be successful and exercises done at home under the supervision of careless parents are less efficient than those given by persons trained in the art of gymnastics.

THE TREATMENT OF STRUCTURAL LATERAL CURVATURE.

The treatment of structural lateral curvature presents a much more serious and much less encouraging problem than the treatment of postural cases, for reasons which must be self-evident. It must be repeated that there are two elements to be attacked, the lateral curve and the rotation. The spine is stiff in the curved portions, the vertebræ are, to a certain extent, distorted, gravity is at work many hours of the day to continue the deformity, and measures must be vigorous, adequate and surgically sound to produce a permanently satisfactory result. Under good conditions and adequate treatment structural lateral curvature in young children of a moderate grade should be cured, in older children it should be permanently improved, and in adolescents and adults very great improvement in symmetry of a permanent character is to be obtained under efficient treatment.

The causes of failure lie in the unwillingness of the parents or the patient to submit to sufficiently long-continued and effective treatment to remedy a condition which, on the slightest consideration, can be seen to be one which is necessarily difficult and resistant.

The gymnastic treatment has fallen into great disrepute by its careless and indiscriminate use in cases of this class, and the treatment by braces or jackets alone, on the face of it, is unsurgical and inadequate. Merely to hold a stiff column in a position of deformity by a brace or jacket, as is so often done, is no treatment at all and is a detriment rather than a help, because it leads to atrophy of the muscles which are always trying to maintain as erect a position as possible.

The surgical treatment of structural lateral curvature, therefore, must consist of two divisions: First, to loosen up the stiffened parts of the spine to make an improved position possible, and, second, to hold the improved position when it has been rendered possible. These two elements are not sufficiently separated as a rule in treatment; they frequently go hand in hand and treatment must often be simultaneous for both, but it adds very much in a clear formulation of treatment to keep the two things perfectly separate. They will, therefore, be discussed separately.

A. TREATMENT TO LOOSEN UP THE SPINE AND MAKE AN IMPROVED POSITION POSSIBLE.

1. Gymnastics.—The object of free standing gymnastics is, by side bendings of the spine to increase the flexibility of the stiffened portions and to cultivate the muscles which aid in maintaining the erect position. The method is open to the objection that the force exerted is not sufficiently localized, but is distributed over the spine. It is essential that the pelvis should be fixed during such exercises as otherwise the pelvis is displaced and the movement becomes a general and not a local one. So far as lessening the curves in cases of even moderate severity goes, the treatment can not be regarded as wholly efficient and, although perhaps the commonest type of treatment in general use, it is not, as a rule, accompanied by satisfactory results in any but the slighter cases.

Such exercises should be simple and corrective in the strict sense; that is to say, an exercise which is of use should be seen to straighten the spine visibly. Complicated exercises are dangerous and unsurgical. This part of the work lies within the capabilities of any competent, properly educated teacher of gymnastics who will observe the case carefully and will be satisfied to give only exercises which can be seen to secure an improved position. Such work to obtain results must be given by a competent gymnast for a period of from one to three hours a day, according to the vigor of the patient, and must be continued under personal supervision for a period of some weeks to obtain satisfactory results. After this exercises at home can be substituted for part of the personal work.

2. Gymnastics Given in Apparatus. — By means of apparatus constructed on the pendulum principle, gymnastic exercises can be very much more correctly localized and the work of loosening the spine and of strengthening the desired muscles can go hand in hand. This method, which is in general use in Germany, has never found a foothold in this country on account of the complicated and expensive apparatus. It is suited to all cases, except the severest, and used for a proper period of time is capable of producing most excellent results.

3. Passive Stretching of the Spine.—Passive stretching of the spine with a view to restoring mobility and making an improved position possible in the curved portion is generally secured by hanging by the arms and by traction on the head by means of a Sayre sling. A pull in the length of the vertebral column is not, however, an economical use of force. The hardest way to straighten a bent stick is to pull the two ends apart, and the easiest way is to press the point of the curve against the knee, while the two ends of the stick are held with the hands. The advantage of traction made on the head in this way lies in the fact that the corrective force is distributed through the whole column.

Apparatus for the purpose has been devised and is known as the Weigel-Hoffa frame in which the patient is suspended by the head, while pads are run in from the sides of the frame, making lateral pressure in various directions. Here, again, the use of force is not economical, as traction in the length of the spine tends to stiffen it against side pressure. In other words, more displacement is possible in a slack than in a stretched spine. Some experiments were made on the cadaver,

with a normal spine, where a side pull with twenty-five pounds was made, the pelvis and shoulders being fixed. A traction force of seventy-five pounds was put on the head and a side pull of twenty-five pounds made. Under these conditions it was possible to secure only half as much side displacement of the spine as when traction was not used. A confirmatory experiment was made with a healthy boy of 15, using seventy-five pounds of head traction and fifteen pounds of side pull, and the result was the same.

Traction on the head is, therefore, not an economical application of corrective force, and when traction is used, lateral corrective force displaces the spine less than when traction is not used.

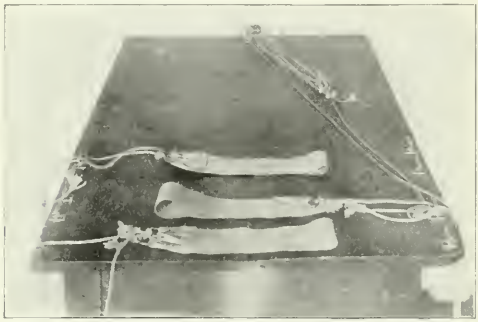


Fig. 1.—Stretching board with loops, ready for application.

Stretching of the lateral curve of the spine is, therefore, to be obtained most economically by pressure on the slack spine, which is most easily secured by having the patient lie prone, and the corrective force should be divided into two elements, the force to correct the rotation and the force to correct the side deviation. A simple apparatus for this is as follows (Fig. 1):

Fig. 2.—Stretching board with loops applied to patient.

The patient lies face downward, with the knees flexed, on a board three feet wide by four feet long. Assuming the case to be of a right dorsal curve, a broad canvas strap is passed around the left upper thorax, over and under the patient, and fastened to a cleat on the right side of the board. This furnishes a point of pressure to the left against the upper thorax at the level of the axilla. A broad canvas strap is then passed around the pelvis of the patient above and below and is fastened to a cleat at the right side of the board. This furnishes a point of pressure to the left at the level of the pelvis. A broad canvas strap is then passed around the thorax at the level of the greatest point of curve; it passes above and below the thorax and its upper end is fastened to a cleat at the left side of the board (Fig. 2). Its lower end is fastened by means of a string into a compound pulley attached to a cleat at the left side of the board. By means of this pulley any reasonable degree of force may be exerted against the right side of the thorax, pulling it to the left and

Fig. 3.—Machine for intermittent correction applied to patient.

at the same time that it pulls it tends to reduce the rotation from the fact that its upper end is fastened and its lower end moving toward the pulley.

A better and much more efficient appliance has been made by Dr. Z. B. Adams of Boston.

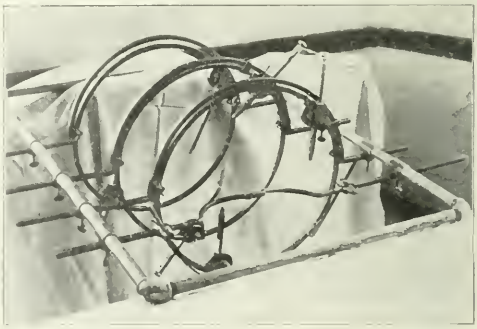


Fig. 4.—Apparatus for forcible correction by plaster jackets.

In this a patient lies prone, with the knees flexed, on a table which is split transversely into five parts. The lower one, on which the pelvis rests, is furnished with two sliding wooden horns which hold the pelvis firm. The next three pieces are provided with a pad sliding in from the side and a pad coming down from the top. These three movable pieces slide from side to side and also rotate on a gas pipe running the length of the table longitudinally. The patient is placed in the apparatus, the pads are adjusted to the side and back of the loin or thorax, or both, and by side pressure and a twisting of each arm, both rotation and lateral deviation are corrected separately at each level. In this way it is possible to correct both lateral deviation and

rotation at one, two, or three levels for the purposes of stretching the spine by directly applied pressure. The top part of the table farthest away from the pelvis of the patient is fixed, and on it rest the arms and head.

The patients are stretched daily in this apparatus and left in the corrected position for as long a time as can be borne comfortably, generally from fifteen minutes to half an hour.

4. Stretching by Means of Plaster-of-Paris Jackets (Forcible Correction).—In severe cases of structural lateral curvature no means of treatment is so efficient as continuous stretching by means of plaster jackets applied under force. This method is spoken of as "forcible correction." Such jackets are applied in the hope of stretching the contracted structure and of inducing an improvement in the curve. By virtue of their being at work day and night they accomplish much better results than are to be obtained in any other way.

Corrective jackets should be applied to the patients prone, and preferably with the legs flexed, as this diminishes the physiologic curves of the spine and further simplifies the problem. With a patient thus lying prone,

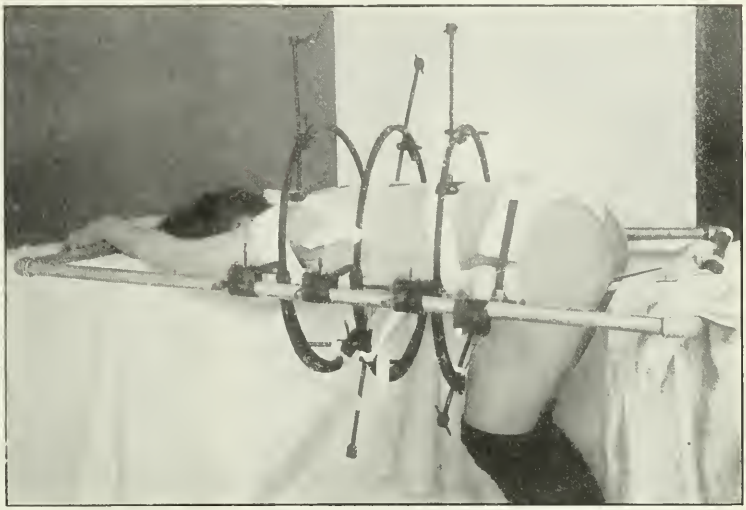


Fig. 5.—Apparatus for forcible correction by plaster jackets applied.

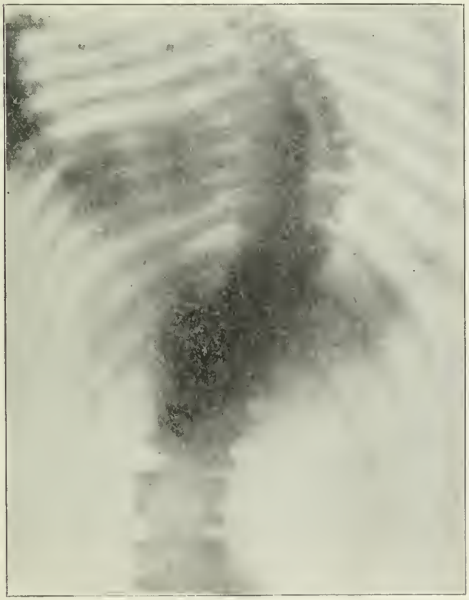


Fig. 6.—Radiogram of patient 17 years old lying on the back before application of jacket.

Fig. 7.—Radiogram of same patient taken after application of plaster jacket through windows cut in front and back of jacket.

They have been applied, as a rule, to the patients suspended by the head, but the reasons already stated as to the mechanics of this position apply here also.

the spine is in the most favorable condition for side correction both as regards side deviation and rotation, and by an intelligent application of force to correct

both of these elements at different levels, in the case of compound curves, great improvement is to be obtained. In this improved position the jacket is applied.

A correct application of this method is to be found by having the patient lie prone in a gas-pipe frame on two straps of webbing running from end to end, cross straps supporting the pelvis and shoulders. By means of webbing straps attached to the side of the frame, in a right dorsal curve, one going around the left side of the pelvis and another around the left upper thorax, while a third pulls on the right side of the thorax against these as points of resistance, great improvement in the position may be obtained, which is secured by the application of a plaster jacket.

A thoroughly efficient apparatus has been devised by Dr. Z. B. Adams as follows:

The apparatus consists of a heavy gas-pipe frame three by four feet. The patient lies face downward on two webbing strips running from end to end of the frame with the legs flexed. Near the bottom of the frame is an adjustable cross-bar bent to fit into the flexure between the thigh and the pelvis on which the patient rests the lower part of the body. Sliding on this bar are two arms, which slide in and clamp down on the buttocks, holding the pelvis steady on the cross-bar. This bar is movable from side to side in order to induce or correct curvature in the lumbar region when necessary. There are three vertical transverse rings two feet in diameter fastened to pieces on the sides of the frame so that they can be moved to any desired point along the frame. These rings are also movable from side to side and by an independent movement they can also be rotated through a half circle. Any one of these movements can be checked at any point by turning a screw. The shoulders are held by a pair of axillary straps fastened together by a strap across the chest in front. These straps are suspended from the ring nearest to the top of the frame and can be made to hold the shoulders in any desired degree of twist by a rotation of the ring (Fig. 3).

Each ring is provided with two long rods at the two poles of the ring. These rods are adjustable on the ring and can be set at any desired angle to it. They can be pushed up or down and are controlled by a ratchet. By rotating the ring and adjusting the angle of the rods they can be made to press down or up on any part of the back or chest.

For the application of the jacket the patient lies on the face on the two webbing strips, the lower part of the trunk resting on the cross rod and the bars clamping the buttocks; the feet rest on the floor and the arms are extended above the head. The rings are then adjusted at the two levels where it is desired to make correction (Fig. 4). For side correction a bandage is fastened to one side of the ring, carried around the patient's side over a heavy pad of felt, and back to the ring. The same is done to the other ring at the other level where side correction is desired, while the top ring controls the shoulders. The rings are then pulled to one side, the bandages around the patient tighten, and any endurable degree of side correction obtained.

When the side correction is made the ring is rotated till the rods are opposite the points where it is desired to correct rotation. They are then pushed down on to the patient, their points being protected by sheet-iron pads two by three inches, which are covered with heavy felt. These pads are incorporated in the jacket (Fig. 5).

A plaster jacket is applied to the patient held in this way. It is easy to see that the method is perfectly definite and that the amount of force at the operator's disposal is very great.

That a practical gain in the curved part of the spine may be secured by this method is demonstrated by the two *x*-rays shown in the illustrations (Fig. 6). The patient was a girl of 17, with a severe right dorsal curve, who was extremely rigid and had never been treated. The first *x*-ray was taken with the patient lying on the back. A corrective jacket was applied in the Adams apparatus, the front and back of the jacket were cut away to permit another *x*-ray, and the improvement in position is evident (Fig. 7).

It seems reasonable to hope that the maintenance of such an improved position may be expected in time to produce a change in the shape of the vertebræ, and such jackets are worn for a period of from one to three weeks. They are then removed and others applied so long as it seems possible to obtain any further correction (Figs. 8 and 10). This short period is adopted in order to prevent as much as possible the atrophy of the muscles incident to the fixation of the trunk.

The treatment after removal of these jackets will be considered in the next section.

B. TREATMENT TO RETAIN THE IMPROVED POSITION.

Although it may be possible to secure a very great improvement in position by means of the measures described, it has been demonstrated clinically that such results are not permanent, and that to become permanent such improved position must be maintained for a long time, and that the ultimate cure must rest in the development of the muscles which maintain the improved position. The intelligent use of gymnastics in this connection is, therefore, of great importance. This consideration of gymnastics is entirely independent of those mentioned before, where they were spoken of merely as measures to secure flexibility. In this connection they are spoken of as measures to maintain the improved position.

It is impossible to go into the individual exercises, but for practical consideration they may be divided into four types:

1. Self-Correction Gymnastics.—With the hands on the head or the hips, the patient lifts herself into a corrected position, which she maintains as long as possible, while the arms are taken away from the supporting point. A second type of this exercise is to be found in the so-called "Hoffa self-correction," in which the patient with a right dorsal curve places the right hand on the thorax and the left hand on the left hip, and by a side pressure presses the right side of the thorax to the left.

2. Gymnastics for the Contraction of the Muscles on the Convex Side of the Lateral Curve.—A distinctive group of exercises intended to maintain the correct position consists in the repeated contraction of the muscles on the convex side of the lateral curve. Such exercises consist of side bendings against resistance and active exercises which are as heavy as they can be made. In a left lumbar curve, for instance, the patient hangs by the hands from a bar and lifts both legs sideways to the left, contracting the left lumbar muscles and straightening the curve.

3. Backward Bending Gymnastics.—Backward bendings have been found to have a beneficial effect in maintaining the corrected position. Simple symmetrical backward bendings can be carried out by having the patient lie on the floor, with the feet held, and raising the head and chest with the arms behind the head or on the hips.

4. Symmetrical Heavy Gymnastics.—The raising of heavy bars and weights calling for simultaneous muscular contraction of the two sides is distinctly beneficial in maintaining an improved position of the spine, and, of all the exercises mentioned, is perhaps the safest in inexperienced hands. Dumb bells of from five to ten or twenty to thirty pounds and bars weighing from ten

to thirty pounds. Examples of the exercises are as follows: A heavy bell is taken from the floor and raised above the head alternately by each arm, a heavy bar is raised above the head with both arms, and the patient should reach up and look up at the end of each movement, raising the bar to the highest possible point. The patient lies on the back on the floor and raises a bar from the level of the chest to the full extent of the extended arms. In such exercises the patient should be pushed to the limit of fatigue.

Although the exercises have been divided sharply into four groups, it must be evident that combinations of these groups are likely to be of value, and here again only exercises which can be seen to be corrective should be given. Such work to accomplish results must be carried on from two to four hours a day for a period of at least six months following forcible correction.

The present discredit of gymnastic retentive treatment is due to its use in too small dosage and to a failure to appreciate that a problem so grave as the maintenance of an upright position in a spine, which tends to curve, is to be obtained only by a high degree of muscular development and that this can not be obtained in exercise periods of half an hour, given three times a week, but that treatment must be vigorous and long continued.

Fig. 8.—Patient of whom the radiograms were taken before treatment.

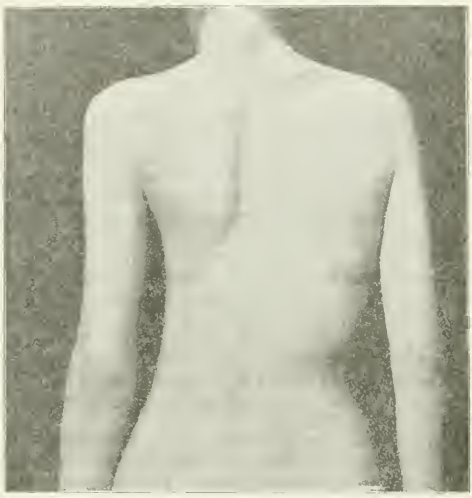


Fig. 10.—Same patient after one corrective jacket.

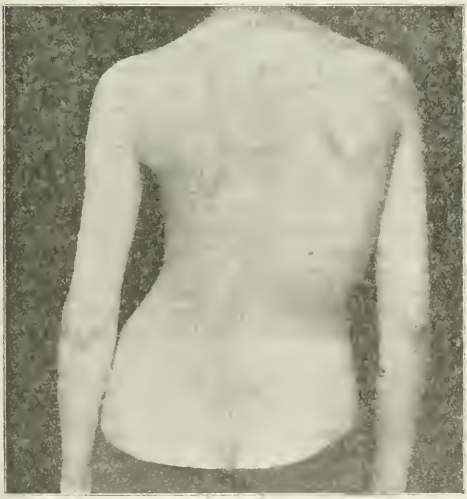


Fig. 9.—Patient 17 years old, never previously treated, before treatment.

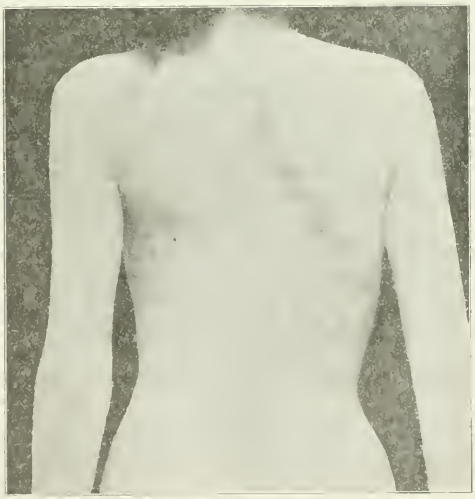


Fig. 11.—Same patient after two jackets. Whole interval three weeks.

5. *Retention by Apparatus.*—After forcible correction either by intermittent means as described or after the removal of jackets furnishing continuous correction, it is desirable that some form of retentive apparatus should be worn for some months (at least, to maintain the corrected position obtained) until the muscles are strong enough to enable the apparatus to be dispensed with.

Braces, as corrective apparatus, have no place in the treatment of severe lateral curvature and should be regarded only as means to retain the gain secured by other measures.

The most easily made and available corset is to be manufactured by removing from the patient the last corrective jacket, filling it with plaster-of-Paris and water, thus securing a torso of the patient. This torso is then further corrected by cutting away the plaster on the convex side and by building up on the concave side so as to secure a symmetrical or overcorrected model, on which a jacket may be applied. It is then shellacked and covered with a layer of stockinet or an undershirt, and a plaster jacket, having been applied on the torso, is cut off, furnished with lacings and supplied to the patient. All plaster jackets applied for forcible correction and retention must embrace the shoulders and even the head should be included, but the disfigurement is so great that most patients are unwilling to submit to it in America.

On the torso obtained as described may be constructed jackets of celluloid, leather or other material, or corsets made of cloth reinforced by steel. Into the construction of these more complicated forms of apparatus and braces there is no space to enter here. Any brace which maintains the corrected position fulfills the requirement. After a forcible correction it is generally necessary that a jacket should be worn from one to two years and gradually discontinued as the corrected position can be maintained for a longer and longer time.

The gravity of the condition to be met in structural lateral curvature must be recognized and a full appreciation of the very difficult problem that treatment presents is necessary. The failures to secure the results which are possible are to be attributed to our not applying sufficiently vigorous and sound surgical means and to not continuing our treatment for a sufficient period of time. When 30 grains of quinin are needed it is of little use to administer 1 grain, and the reluctance of patients to undergo adequate and long-continued treatment for the result of a deformity which does not threaten life is, and always will be, an obstacle to the generally successful treatment of this deformity.

BACTERIOLOGY OF THE BLOOD IN TYPHOID FEVER.*

JOSE L. HIRSH, A.B., M.D.
Professor of Pathology, University of Maryland.
ASSISTED BY E. B. QUILLEN, M.D., AND W. V. S. LEVY, M.D.
Resident Pathologists, University Hospital.
BALTIMORE.

The views regarding the nature of typhoid fever have undergone considerable changes in recent years. While this was formerly considered as an intestinal disease, or as a disease with especial localization in the intestinal tract, the modern conception regards it as a true septicemia. Instead of local lesions in the intestines with subsequent blood infection, the organisms of the disease are first conveyed to the general circulation and the intestinal lesions, when present, are to be regarded as the secondary changes.

His,[1] in his studies of typhoid stools, has demonstrated the fact that in most cases the bacilli appear late in the stools, and are often absent in those cases recognized as the disease without intestinal lesions. Furthermore, the organisms may often be obtained from the blood several days earlier than from the stools. That the infection occurs most often through the gastrointestinal tract is highly probable, and that micro-organisms may penetrate the normal mucosa without leaving any trace of their presence has been amply demonstrated to be the case with the tubercle bacillus and doubtless the same method of general blood invasion occurs in typhoid fever. At the time that we are able to recognize the disease clinically there are usually well-marked lesions in the intestinal and mesenteric lymphatics.

Typhoid bacilli are usually found widely distributed throughout the tissues after death and usually in clumps, a condition probably due to the agglutinating powers of the blood on the bacilli. The work of Mallory[2] seems to show that the lesions of typhoid fever bear no intimate relation to the typhoid bacilli. He concludes that the typhoid bacillus produces a mild, diffusible toxin, partly within the intestinal tract and partly within the blood and organs of the body. This toxin produces a proliferation of the endothelial cells, which are phagocytic. The swelling of the spleen and lymphoid tissue is due almost entirely to the formation of these cells. The necrosis of Peyer's patches is due to the occlusion of the veins and capillaries by thrombi, which owe their origin to degeneration of phagocytic cells beneath the lining endothelium of the vessels.

The occurrence of the typhoid organisms in the fetus was first noted by Ernst.[3] Similar conditions have been described by Eberth,[4] Freund and Levy, Richardson, Lynch[5] and others. A case recently coming under my notice was of interest on account of the pathologic, rather than the bacteriologic findings. A woman aborted in the third week of typhoid fever during the fifth month of pregnancy. Her blood showed a positive Widal reaction in a dilution of 1 to 100, though no bacteriologic examination of her blood was made. Postmortem examination of the fetus showed an enlarged spleen, and the mesenteric glands and Peyer's patches were congested and swollen. Bacteriologic examination of the blood and spleen gave negative results, although the blood gave a positive Widal reaction in dilution of 1 to 50.

In one of the cases reported by Cole,[27] the blood of the mother, examined on three different occasions, gave negative cultures for typhoid bacilli, and after abortion Lynch[5] succeeded in isolating the bacilli from the fetus. Lynch collected 16 undoubted cases in which the typhoid bacilli were isolated from the organs of the fetus. In none of these cases were intestinal lesions found. Probably the cause of the infection of the fetus in these cases is the associated hemorrhagic infarcts of the placenta, which Lynch found in his case.

The occurrence of the *Bacillus typhosus* in the urine of typhoid patients has been demonstrated by various

* From the Pathologic Laboratory of the University of Maryland. Conducted under the Charles Frick Fund.

* Read before the Medical and Chirurgical Faculty of Maryland, March 2, 1906.

1. His: Med. News, May 11, 1900.
2. Mallory: Jour. Exp. Med., 1898, vol. iii, p. 611.
3. Ernst: Beitr. z. Path. Anat., 1890, vol. viii.
4. Eberth: Forts. d. Med., 1899, vol. ii.
5. Lynch: Johns Hopkins Hosp. Reports, 1902, vol. x, Nos. 3, 4, 5.

observers in a large number of cases. In 1881 Bouchard claims to have isolated the organism from the urine in 50 per cent. of cases. In 1890 Neuman[6] isolated the bacillus in 11 out of 48 cases. Horton Smith[7] found them in 3 out of 7 cases which he investigated, and Richardson[8] in 23 out of 104 cases. Gwynn[9] has found as many as 50,000,000 typhoid bacilli in 1 c.c. of urine. In this connection, it is interesting to note that the organism may persist in the urine for a long time after the attack of typhoid fever; Young's[10] case showed the persistence of the organism in the urine for 7 years after the attack of typhoid fever and in Houston's[11] case it remained for 2 years.

The occurrence of the bacilli in the urine in from 25 to 30 per cent. only of the cases and the fact that it has seldom been found before the end of the second week, offers but little aid to the clinical diagnosis of the disease; but its frequent presence and its persistence in the urine is of great practical import in showing the danger of infection from this source. Bacilli of typhoid fever have been isolated from the stools in many cases, and while the method of His[12] and the more recent one of v. Drigalski and Conradi[13] are less complicated than previous methods, yet neither are practical on account of the difficulty of isolating the bacilli in pure cultures.

Isolation of the organism from the spleen *intra vitam* has not proved feasible, even though several investigators have succeeded in so doing. The dangers from hemorrhage from the enlarged and softened spleen is not a negligible quantity. The bacteriologic examination of the rose spots has been more successful, although, as with the urine, the bacilli are obtained at a time when it is practically useless for a clinical diagnosis, as the symptom complex is fairly well established at the time the rose spots appear.

Neuhaus[14] isolated the organism from the rose spots in 9 out of 15 cases. Neufeld[15] cultivated the bacilli from the spots in 13 out of 14 cases. He made incisions into the spots and transferred the blood with the tissue scrapings into bouillon. Curshman[16] made an examination in 20 cases, with positive results in 14 cases. Richardson[17] cultivated the organism in 5 out of 6 cases from the spots. Neufeld assumed that the bacilli found lodgment in the skin outside of the blood and were so protected from the bactericidal action of the blood; accordingly Richardson[17] modified Neufeld's technic by freezing the spots with ethylchlorid and so driving all the blood out of the skin. The skin having been frozen, a small cross incision was made over the spot, the substance of which was immediately curetted out and transferred to a tube of bouillon. In both Neufeld's[15] and Richardson's[17] studies it was possible to obtain the typhoid bacilli several days before the Widal reaction was positive. Neufeld's series 7 out of 8 cases, the diagnosis made from the rose spots was 6 days ahead of that made by the Widal reaction. In all of Richardson's cases the blood cultures were ahead of the Widal.

E. Frankel,[18] by excising the spots, has been able to demonstrate the bacilli in sections, and finds them chiefly outside the blood capillaries in the small interstices of connective tissue.

Although the earliest attempts to isolate the organism from the circulating blood were negative, as early as 1884, Gaffky[19] called attention to the probability of the invasion of the blood by the typhoid bacillus, and in the following years Frankel and Simmonds[20] were successful in isolating the organism in 1 out of 6 cases. The earlier results were very much at variance, some observers claiming to be able to isolate the organism in a large number of cases, while others constantly had negative results. The work of Stern,[21] in calling attention to the germicidal action of the blood, had considerable influence on later investigations, and, although, Thiemach[22] was able to isolate the organism in but 1 out of 7 typhoid patients, he recognized the fact that the cause of his failure was in not making sufficient dilutions of the blood. Kuhnau[23] was able to obtain the organism in 11 out of 41 cases. He used a large quantity of blood, about 10 cc. and diluted it in large quantities of agar, and made plates. Schottmüller[24] in an examination of 220 cases, from 1899 to 1902, found the typhoid bacillus in the circulating blood in 182 cases, 827 per cent. He prefers agar to bouillon, as the colonies are fixed and thereby readily isolated. He collects about 20 cc. of blood from the arm, and adds from 2 to 3 c.c. of blood to 6 c.c. of agar and then pours the plates; he has found from 5 to 2,000 colonies, per 100 c.c. blood.

Auerbach and Unger[25] report a study of 10 cases of typhoid fever, in which 7 gave positive results. The rather large percentage of positive findings is remarkable, considering the fact that they used very small quantities of blood, obtaining a few drops from the finger tips and the lobe of the ear. The majority of workers who have followed this plan have failed to isolate the organisms, as we did ourselves in the first few cases we studied and which we have not included in our statistics. Castellini[26] used large quantities of bouillon, which he inoculated with from 10 to 40 drops of blood, which was obtained from the median vein of the arm; each flask contained about 300 c.c. of bouillon, so that the blood was used in large quantities and sufficiently diluted to lessen the germicidal action. He isolated the *Bacillus typhosus* in 11 out of 14 cases.

In this country, the earliest reports are by Cole,[27] who was able to obtain the organism in 11 out of 15 cases examined. He also made use of large quantities of blood with large dilutions in bouillon. Hewlett[28] found the organism in 20 out of 24 cases, 83 per cent. Kerr and Harris[29] reported 56 cases, 31 of which were positive and 26 negative. Courmant and Lesieur[30] found the bacillus constantly present in all cases examined by them. Warfield[31] found the specific organisms in 33 out of 43 cases examined. Coleman and Buxton[32]

6. Neuman: Berl. klin. Wochft., March 15, 1890.
7. Smith: Brit. Med. Jour., Feb. 13, 1897.
8. Richardson: Jour. Exp. Med., 1898, vol. iii, p. 349, 1899, vol iv, p. 19.
9. Gwynn: Phila. Med. Jour., March 3, 1900.
10. Young: Johns Hopkins Hosp. Reports, 1900, vol. viii, p. 401.
11. Houston: Brit. Med. Jour., Jan. 14, 1899.
12. His: Jour. Exp. Med., 1897, vol. ii.
13. V. Drigalski and Conradi: Zeits. f. Hyg., 1902, vol. xxxix.
14. Neuhaus: Berl. klin. Wochft., 1886, Nos. 6 and 24.
15. Neufeld: Zeitz. f. Hyg., 1899, vol. xxx, p. 499.
16. Curshman: Münch. med. Wochft., Nov. 28, 1899.
17. Richardson: Phil. Med. Jour., March 3, 1900.
18. E. Frankel: Zeits. f. Hyg., 1899, vol. xxxiv.
19. Gaffky: Mittellung a. d. Kaiser. Gesundheitsamt, 1884.
20. Frankel and Simmonds: Cent. f. klin. Med., 1885, p. 737.
21. Stern: Zelts. f. klin. Med., 1890, vol. xviii.
22. Thiemach: Deutsch. med. Wochft., Aug. 22, 1895, No. 34, p. 550.
23. Kuhnau: Zelts. f. Hyg., 1897, vol. xxv.
24. Schottmüller: Deutsch. Med. Wochft., Aug. 9, 1900; also Münch. med. Wochft., 1902, p. 720.
25. Auerbach and Unger: Deutsch. med. Wochft., Dec. 6, 1900.
26. Castellini: Ref. Münch. med. Wochft., 1895, No. 34.
27. Cole: Johns Hopkins Bull., July, 1901, vol. xii.
28. Hewlett: Med. Record, Nov. 30, 1901.
29. Kerr and Harris: Chicago Med. Record, October, 1902.
30. Courmant and Lesieur; Jour. de Phys. et Path. gen., 1903, vol. v.
31. Warfield: John Hopkins Hosp. Bull., 1902, p. 173.
32. Coleman and Buxton: Med. and Surg. Report, Bellevue Hosp., 1904, vol. i.

in a study of 60 cases, have obtained the organism in 34. Trappe[33] in 38 cases had positive results in 25. He attributes his rather low percentage of positive findings to the fact that many of his cases were examined late in the course of the disease, at a time when the organisms had probably disappeared from the blood. Duffy[34] reports his examination of 88 cases with especial reference to the relationship of the temperature to the presence of the organism. In 56 cases in which the temperature was above 102 F. the bacilli were present in the blood in every case, and in 23 cases in which the temperature was 100 or 101 F. the bacilli were cultivated from the blood in 10 cases, or 43 per cent.

Our investigations consist of a study of the blood in 100 cases of typhoid fever. All the cases were from the wards of the University of Maryland Hospital, and as is the case with such patients, it is often impossible to obtain a very exact history as to the beginning of the attack; still in the large majority of cases we think the day of the disease as given is fairly accurate. All of the cases were clinically typhoid fever, although as will be stated, some ran a very mild course.

The technic employed was practically that given by Cole. The skin over the anterior surface of the arm at the bend of the elbow was thoroughly cleansed with soap and hot water, then washed with alcohol and ether, and kept wrapped in a hot towel soaked in bichlorid solution for several hours. A bandage is fixed about the arm just below the shoulder, so as to make the veins stand out prominently. The operation consists in drawing 10 c.c. of blood from one of the superficial veins of the arm. An ordinary hypodermic needle with a syringe holding 10 c.c. is used; needless to say, all aseptic precautions must be used. The 10 c.c. of blood obtained is then divided into four flasks, each flask containing 300 c.c. bouillon. The flasks are then placed in the thermostat and allowed to incubate from 24 to 36 hours.

SUMMARY OF 100 CASES OF TYPHOID FEVER.

Case	Sex.	Age.	Day of Disease.	Widal Reaction.	Rose Spots.	Result of blood examination.	Remarks.
1.	M.	24	16	++	++	++	
2.	M.	326	17	+++	++	++	
3.	M.	32	18	++	++	++	
4.	F.	18	24	—	—	—	
5.	F.	24	8	++	++	++	
6.	M.	32	10	++	++	++	
7.	M.	19	9	++	++	++	
8.	M.	18	4	—	—	—	
9.	M.	26	11	++	—	++	
10.	M.	25	14	+	+	+	Mild. Temp. at no time over 102 F.
11.	F.	22	12	—	—	—	
12.	M.	16	20	—	+	—	
13.	F.	32	16	+	+	—	Delirium. Temp. 105 F. Severe attack.
14.	F	27	4	—	—	—	
15.	M.	24	8	—	—	—	
16.	M.	26	7	—	—	—	
17.	M	19	16	—	—	—	
18.	M.	34	14	++	—	—	Mild attack.
19.	M.	26	22	—	—	—	
20.	M.	40	15	—	—	—	
21.	F.	30	24	—	—	—	
22.	F.	24	5	—	—	+	
23.	M	18	10	—	—	—	
24.	M	19	7	—	—	—	
25.	M.	27	11	—	—	—	
26.	F.	32	14	—	—	—	
27.	M	30	12	—	—	—	Relapse. Culture on 3d day of relapse.
28.	M.	32	26	—	—	—	
29.	F.	45	11	—	+	—	
30.	F.	46	10	—	—	—	
31.	F.	27	11	—	—	—	
32.	M.	26	8	—	+	—	

33. Trappe: Inaug. Dissert. Breslau, 1904.
34. Duffy: THE JOURNAL A. M. A., Nov. 15, 1913.

SUMMARY OF 100 CASES OF TYPHOID FEVER Continued.

Case.	Sex.	Age.	Day of Disease.	Widal Reaction.	Rose Spots.	Result of Blood Examination.	Remarks.
33.	M.	32	6	—	—	+	
34.	M.	18	7	++	—	+	
35.	M.	20	9	++	++	++	
36.	M.	22	14	++	++	++	Severe attack from onset. Died.
37.	M.	19	10	—	+	—	
38.	M.	26	27	—	—	—	Relapse. Culture positive on 35th day. Second day of relapse.
39.	F.	34	14	+	+	+	
40.	F.	37	19	+	—	+	
41.	M.	26	8	+	—	+	
42.	F.	24	21	+	—	+	
43.	F.	18	14	—	+	+	
44.	M.	26	14	—	—	+	Mild attack
45.	M.	19	9	+	—	+	
46.	M.	26	4	—	—	+	
47.	M.	37	16	+	—	+	
48.	M.	42	8	+	—	+	
49.	M.	26	40	—	—	+	Relapse. Culture positive fourth day.
50.	M.	29	24	—	—	—	
51.	F.	21	18	+	+	+	Severe attack Recovery.
52.	F.	19	13	—	+	+	
53.	M.	23	14	+	—	+	
54.	F.	24	12	+	+	+	
55.	F.	38	8	+	—	+	
56.	M.	35	16	+	+	+	
57.	M.	24	9	+	—	+	
58.	M.	18	5	—	—	—	
59.	F.	20	7	+	—	+	
60.	M.	32	18	—	—	+	Mild.
61.	M.	28	20	+	—	+	
62.	F.	39	16	+	—	+	
63.	M.	36	18	+	+	+	
64.	M.	28	35	+	—	+	
65.	M.	37	14	+	—	+	
66.	M.	21	26	+	+	+	
67.	M.	26	17	+	—	+	
68.	M.	48	18	+	—	+	
69.	M.	26	7-14	+	+	—	Delirium. Extreme tympanites. Died. Autopsy.
70.	M.	29	14	+	+	+	
71.	M.	17	13	+	+	+	
72.	F.	26	7	—	—	+	
73.	F.	18	8	+	+	+	
74.	M.	15	10	+	+	+	
75.	F.	22	14	+	+	+	
76.	F.	26	28	—	—	+	
77.	F.	27	15	+	+	+	
78.	M.	24	11	+	+	+	
79.	M.	31	14	—	—	+	
80.	M.	26	20	+	+	+	Severe hemorrhages. Died Autopsy.
81.	M.	27	5	*	—	+	
82.	F.	18	8	—	—	+	
83.	M	21	10	+	—	+	
84.	M.	32	13	+	+	+	
85.	F.	36	7	—	—	+	
86.	F.	18	9	—	—	—	
87.	M.	29	13	+	+	+	
88.	M	32	12	—	—	—	
89.	M.	37	10	+	+	—	Severe attack Hemorrhage. Recovery.
90.	F.	28	8	—	—	+	
91.	F.	18	21	+	—	+	
92.	M.	42	16	+	—	+	
93.	M.	36	6	—	—	+	
94.	M.	33	7	+	—	+	
95.	M.	27	9	+	+	+	
96.	M	18	12	+	—	+	
97.	M	36	14	+	+	+	
98.	F	28	11	+	—	+	
99.	M	26	10	+	+	+	
100	M.	32	6	—	—	+	

* Suggestive.

In our work the identity of the typhoid bacillus was, in many cases, made by cultures and agglutination, but in every case the crucial test was the positive agglutination of the bacilli in a dilution of 1 to 50 within one hour with known human typhoid serum.

A study of our 100 cases shows that the typhoid bacilli were found present in the circulating blood in 78 cases and absent in 22 cases, and as to the time of the disease, were distributed as follows:

First week—16 cases, 12 positive, 75 per cent
Second week—50 cases, 43 positive, 86 per cent

Third week—24 cases, 19 positive, 79.3 per cent.
Fourth week—7 cases, 1 positive, 14.3 per cent.
Relapses, 4 cases, 4 positive, 100 per cent.

As to the stage of the disease in which the bacilli are most apt to be found there seems to be general accord. Our largest number of positive findings were in the second week of the disease, a time when the bacilli are probably present in largest numbers. Our positive results in the first and third week are practically the same. After the third week the positive findings are greatly reduced and in the majority of cases we believe they are absent after the twenty-first day. In an analysis of 604 cases collected from the literature by Coleman and Buxton they find 93 per cent. of positive cases in the first week, 76 per cent. in the second week, 56.5 per cent. in the third week and 32 per cent. in the fourth week.

Our earliest date of positive findings in the original attack was on the fourth day; there were two cases on the fifth day. The latest day on which bacilli were present, exclusive of relapse, was the twenty-eighth. Schottmüller's earliest finding was on the second day and the latest on the forty-second day. Courmant found the organisms present usually as early as the fifth day and present until the end of the third week. Cole's earliest positive result was on the sixth day and the latest on the twenty-seventh day; Hewlett found the bacilli in one case on the third day.

The number of relapses in our series is small, though important in showing the relationship to the original attack. A relapse is undoubtedly a reinfection of the blood with the bacilli. All the relapses gave positive results, one on the second day, one on the third day and two on the fifth day. One of the cases (Case 38) gave negative results in the original attack on the twenty-seventh day, and on the thirty-fifth day of the disease (and the second day of relapse) showed the presence of typhoid organisms. Just why this reinvasion of the blood should occur we are unable to say.

We may conclude, therefore, that the organism is present in a large majority, if not all cases of typhoid fever in the blood, early in the attack and that it disappears by the end of the third week, or soon thereafter, and that a relapse is a second infection, associated with the reinvasion of the blood by the organism. We have not been able to confirm the statement of Kuhnau, that the organisms are found only in the stage of hyperpyrexia, or that of Duffy, who found them present in every case where the temperature was above 102 F. While it is true that the majority of our positive cases occurred in the second and third week, when the temperature was high, we encountered several cases of hyperpyrexia, temperature 104 F., which were negative after several examinations. On the other hand, several mild cases, in which the temperature at no time was above 102 F., gave positive results. While Widal was able to find the organisms present in severe cases only, the majority of authorities have been able to find no relationship between the severity of the attack and the presence of the bacilli.

Case 69 of our series, although of great severity from the onset, death following perforation, failed to show the organisms at any time, although cultures were made on the seventh and fourteenth days. Cases 53 and 89 were likewise negative, the latter case being associated with great tympanites and repeated intestinal hemorrhages. Cases 13, 36 and 80 were also classified as severe infections and gave positive results. Cases 10, 18, 44 and 60 were very mild and showed organisms early in the fever, while cases 34 and 53, of moderate severity, failed to show any organisms.

In 23 of our cases the Widal reaction was negative or merely suggestive at the time the bacilli were obtained. Rose spots were present in 56 cases, and absent in 22 cases at the time of positive findings. The value of a bacteriologic examination as a means of diagnosis in certain obscure cases of typhoid fever can not be questioned. If the bacteriologic examination is positive, the diagnosis is assured. While the Widal reaction is more easily carried out, it is often misleading, as it is occasionally absent or does not appear until late in the attack of typhoid, and is occasionally found in those very diseases which clinically resemble typhoid fever. We have recently encountered 3 cases of acute miliary tuberculosis all of which closely simulated typhoid fever, one of which gave a positive Widal reaction, another a suggestive reaction; negative findings in the bacteriologic examination of the blood was a valuable point in the differential diagnosis.

CONCLUSIONS.

From these studies we conclude:

1. That the *Bacillus typhosus* is present in the circulating blood in every case of typhoid fever at some time during its course.
2. The bacilli invade the blood very early in the disease.
3. The bacilli usually disappear from the blood by the end of the third week.
4. Relapse is associated with the reinvasion of the blood by the organism.
5. The bacteriologic examination of the blood is a valuable adjunct in the diagnosis of obscure cases of typhoid fever.

ATROPIN AND STRYCHNIN COMBINED, A SPECIFIC FOR SEASICKNESS.*

BRIG.-GEN. ALFRED C. GIRARD, U. S. A. RETIRED.
Late Assistant Surgeon General, U. S. A.
SAN FRANCISCO.

It is not the intention of this report to discuss the pathology or symptoms of seasickness, but, since the subject has been taken up by this Congress, to bring again before the profession a remedy which I advocated as long ago as 1888 and again in my "Letters from Europe," published in 1893 in THE JOURNAL of the American Medical Association, to-wit, the combination of atropia and strychnia.

Since then I have privately advised many physicians of my observations and while on duty as Medical Superintendent of the Army Transport Service in San Francisco induced many of the surgeons of the transports to give the remedy a trial. I used the treatment on myself experimentally and gave it to many persons on various ocean trips.

At first I used atropin and strychnin in conjunction with caffein, but after many trials abandoned the latter, because, given hypodermically (which is the safest and most expeditious method), it occasionally gave rise to local inflammation.

For many years I had believed that I was the original discoverer of this treatment, but it seems that other physicians have used it at times independent of my investigations, and I, therefore, do not pretend to absolute originality, but I believe this report represents the views of many observers working under my instructions under various circumstances and more than any individual views will establish the value of the treatment.

* Report presented to the International Medical Congress at Lisbon, April 17, 1906.

My observations show that in almost every instance a hypodermic injection of 1/120 of a grain of atropin sulphate (0.0005 mg.) with 1/60 of a grain of strychnin sulphate (0.001 mg.) is readily borne by adults and, as a rule, causes no disagreeable sensation. This may be taken at the commencement of a voyage, or when the sea commences to be rough, or at the advent of a storm when the motion of the water causes nausea; this dose is at times not sufficient with persons refractory to the action of belladonna, and I have repeated it twice at hourly intervals before incipient dryness of the throat, or disturbance of vision warned me that atropinism had been reached, when in every instance of my observation the symptoms of seasickness disappeared. Other observers found this dose in rare instances too great.

The advantage of hypodermic medication is the rapidity with which the effect is produced, and the certainty that no accumulating action need be feared, as is the case when the remedy is taken *per orem*—perhaps too late to prevent nausea—and possibly remaining in the stomach undissolved, without apparent effect, when it might be followed by a second dose, both operating together and acting in too severe a manner. This happened in an instance when I entrusted the remedy to a lady going from Manila to Hongkong. She encountered a sudden severe storm and treated a number of her lady friends aboard with the uncertainty of medication by the mouth and overdosed them so as to result in severe symptoms of atropinism.

As a rule, one dose is sufficient for a whole voyage, apparently overcoming the disturbance until the voyagers acquire their "sea-legs," but in a long trip with severe weather occasional doses are required to keep up the effect.

The rationale of the treatment may be found in the stimulating effect of the atropin on the circulation in the brain, while the strychnin causes a similar action through the spinal cord in the respiration.

I have a few instances of my own observation and extracts of reports made by medical officers and patients. The general consensus of opinion is that the remedy is a specific. I am satisfied from my own observations that when it failed there must have been some complications which I was always able to meet in my experiments.

On one of my ocean trips, one of the passengers was a surgeon of the army who had occupied a similar position in the navy, but had been compelled to resign because in any kind of weather on board ship he continually suffered from seasickness. I gave him one dose of the remedy when we left the harbor, and for safety's sake repeated it on two subsequent days, and this officer remained free from seasickness.

Another officer suffered from severe headache and attributed it to "biliousness" without being benefited by any treatment. I suggested seasickness as the cause, and by one dose of the remedy the illness was cured.

Letter of M. A. Delaney, first lieutenant and assistant surgeon, U. S. A.:

Office of the Surgeon,
U. S. Army Transport Sheridan,
San Francisco, Cal., Dec. 28, 1904.

Col. A. C. Girard,
Asst. Surgeon-General U. S. A.
San Francisco, Cal.

Sir:—I have the honor to report in regard to the value of the prescription for seasickness which you gave me for trial whilst stationed in Manila, P. I., as follows:

While transport surgeon on the *Sheridan* on the trip from Manila, P. I. to San Francisco, California, Nov. 15, 1904, to Dec. 15, 1904, I had a very good opportunity to test its value as nearly one-half of the passengers on board were seasick and in nearly every case it gave prompt relief. In some of the cases it was given by mouth and while slower in action, yet it was effectual. In three very severe cases, among them myself, it gave first-class results and in a very short time I was able to resume my duties without any further inconvenience. It was also used in the cases of five hospital corps privates (in these cases hypodermically) and in a very short time they were able to resume their work and take food.

As I personally used this remedy, I can unhesitatingly say that it was a great benefit to me.

Extract from Report of Transport Surgeon H. C. Moses:

Report of *mal de mer* treatment with the Girard mixture: Number of cases treated, 38; number relieved after first treatment, 20; number of recurring cases in which decided relief or temporary relief was noticed, 16. The average number of treatments received by these 16 cases was 4. Number of cases in which no relief was noticed, 3. These cases received but one treatment and it is reasonable to suppose did not get the full physiologic action of the remedy.

Extract from letter of First Lieutenant and Assistant Surgeon W. T. Davis, transport surgeon:

Manila Bay, Pacific Islands,
Sept. 29, 1906.

Col. A. C. Girard,
Asst. Surgeon-General, U. S. A.,
Manila, P. I.

Sir:—I have the honor to report, as requested, on the results of the treatment of *mal de mer* by means of hypodermic injections of the sulphates of atropin and strychnin.

Number of cases treated, 20; number cured by one injection, 12; number cured by two injections, 5; number not affected, 3.

I find this treatment to be a specific in a large majority of the cases.

Extract from letter of Col. B. F. Pope, assistant surgeon-general, U. S. A.:

I specially write to inform you of the successful use of your prescription for seasickness, both on Mrs. Pope and myself and Col. D.

We were greatly prostrated by seasickness during the first twelve hours. A single injection put Mrs. Pope on her feet, and more important than all, entirely relieved her of sea terror so that she said the boat might turn over for all she cared. With her I repeated the dose once in twenty-four hours until we got into smoother water, when no more was necessary.

Col. D. (who usually took to his bed as soon as the steamer left the wharf and did not rise until the end of the journey) required but one injection. I took two. Others took one or two and always good results.

Extract from letter of Capt. Dwight B. Taylor, assistant surgeon U. S. Vols., transport surgeon:

There is no doubt in my mind of the complete efficacy of this prescription, and the patients were all greatly pleased at its prompt and lasting action. The Americans who had it had not yet vomited and did not; they were all about ready to when they received the treatment. Some of the Japanese (crew) had vomited, but they were all right and at work after taking the medicine. By seeing the effect of the treatment in patients who had vomited and those who had not, I am the more convinced of its value.

Extract from letter of Capt. Samuel D. Crawford, 28th U. S. Vols., on board the U. S. A. T. *Kilpatrick:*

On Board the U. S. A. T. Kilpatrick.

Col. A. C. Girard,
Chief Surgeon, General Hospital,
Presidio, San Francisco.

Sir:—I have the honor and pleasure to tell you how much I am indebted to you for the relief which your anti-seasick remedy gave me a few days ago. Dr. Kelly, the ship's surgeon, had announced in a posted notice that he would give the passengers the benefit of the remedy, and in every instance in

which he applied it, either before to prevent or afterward to give relief, he was successful. I think it is a wonderful discovery, and I am sure that if the sea-traveling public could have the privilege of having the remedy at hand, it would make countless thousands happy, and will be an assurance to those who do not travel at sea because of seasickness, that would enable them to enjoy life on the ocean wave without the old time periods of travail and despondency. I sincerely hope that the environments of the service will not prevent you from placing this remedy on the market, and I am sure that a grateful public will rise to bless you every time they have occasion to travel on the high seas.

Extract of letter of Dr. T. G. Holmes, transport surgeon, U. S. A. T. *Grant:*

After the second day I used it for six passengers, with prompt relief in every case; two only had any subsequent nausea, which yielded to a repeated hypo. Among the soldiers I used it for ten, with equally prompt and satisfactory effect and no subsequent nausea.

Extract from letter of Captain (now Lieutenant-Colonel) E. T. Fremont:

I write just a line to thank you greatly for the benefit to me of your remedy for seasickness. I only took two doses (and for me the atropin as put up was halved, as the whole tablet made me sleep too much and made my throat tremendously dry) and thereafter I steadily improved. No matter how rough, I was not again affected.

Extract from letter of Mrs. M. S. R.:

I can thank you most sincerely and gratefully for the remedy for seasickness. We had a most trying and stormy passage, and by the daily use of the small pills I managed to stay on deck every day. I am such a miserable sailor that I feel sure nothing would absolutely cure me, but as I am usually in bed, deathly ill, from San Francisco here, and not able to keep any food down, I am sure you can see how much good you did me when I was only actively ill twice and able to stay on deck all the time.

Extract from letter of Capt. I. T. Jenks, 24th Infantry:

Your prescription worked marvels with me. We had a rough trip and I did not miss a meal.

I have many more letters of the same import, but these ought to suffice.

I notice in the daily press in a telegram from Lisbon, February 10, the following:

"The Anti-seasickness League will hold a meeting here in April, when one hundred physicians will charter a steamship and go out to sea to try personally the medicines which have been advanced as preventives of seasickness. Six hundred invitations have been sent to members of the medical profession, and out of the acceptances one hundred will be chosen to go on the voyage."

This appears to be an excellent opportunity of bringing my investigations to the notice of the profession, and I hope that this paper will be read in full and be given due consideration.

I conclude with an observation made again lately that the success or failure of the remedy greatly depends on the patient himself. This happened in the case of an officer to whom I gave a number of doses of tablets containing the atropin and strychnin. He was undergoing a voyage on a small coastline steamer. The weather was very rough and the vessel rolled and pitched greatly. He took the medicine before leaving and was not affected by the sea. On his return, vessel and weather being similar, but the stomach full, he was not benefited, as probably the remedy did not have time to be absorbed, and he suffered greatly for several days.

JOINT MANIFESTATIONS IN HEMOPHILIA.*

EDWIN W. RYERSON, M.D.

Orthopedic Surgeon to Cook County and St. Elizabeth's Hospitals; Assistant Professor of Orthopedic Surgery, Chicago Policlinic Associate in Surgery, Rush Medical College.

CHICAGO.

Fifty years ago clinicians clearly recognized the frequency of joint lesions in hemophiliacs, but were unable to agree on the pathology of these lesions. Elsässer considered the condition to be merely coincident arthritis due to gout, and Lange, in 1851, supported this view. As late as 1870 we find Grandidier insisting on a rheumatic or gouty diathesis as the sole factor, although Volkmann, in 1868, had clearly shown that hemorrhages into the joints occurred frequently and with little traumatic cause in bleeders. Wickham Legg, about 1870, wrote an able monograph with some mention of the arthritis, and ten years later concluded correctly as to the etiology.

Reinert and Lossen made strong pleas for the hemorrhagic nature of the joint lesions, but as late as 1892 we find no less an authority than William Osler apparently unwilling to hazard a theory, although Poncet, Charcot and Redfern had given good descriptions of the changes in the synovial surfaces. It was not until the able and convincing paper of König was published, in 1892, that the profession at large became awakened to the true cause of the arthritis.

It is interesting to read that the greatest authority in the world on tuberculosis of joints should have operated on two hemophilic knees in one year under the impression that they were tuberculous. In 1896 an Omaha surgeon reported another case, and I have heard of two others which I have been unable to find. All these operations resulted fatally from slow oozing some days after the operations, in spite of every form of treatment then recognized as advisable. All these cases so strongly resembled tuberculosis that a consideration of the differential diagnosis assumes great importance to the operating surgeon.

Although any joint may be affected, the vast majority of the hemorrhages occur in the knee, and, of course, the male sex is far more liable to suffer than the female. I believe that a careful and painstaking examination will reveal the true condition in practically every case if the possibility of hemophilia be borne in mind. The diagnosis in the early or acute stage presents several difficulties. It is probable that many cases go unrecognized, and, in fact, in a case of effusion into the knee joint following a moderately severe trauma, with no rise in temperature and no great pain, it may be impossible to make the correct diagnosis without aspiration of some of the fluid. There seems to be a well-recognized disinclination on the part of many hemophiliacs to admit the fact that they are bleeders, and several observers state that the diathesis is even strenuously denied by the patients.

PATHOLOGY.

I shall not attempt to review the literature of hemophilia in general nor to theorize as to its essential cause. It is now clearly recognized that the joint manifestations are due to an intracapsular hemorrhage. Rheumatism and gout play no part whatever, although there is perhaps no reason why they may not coexist. The hemorrhage may occur without any appreciable trauma, though more often a slight fall or blow is the exciting

* Read before Chicago Pediatric Society.

cause. The authors all agree that at least one such attack, even if severe, may be recovered from with perfect restoration of joint function, but that, if repeated, some disturbance of mobility may remain permanently. The pathologic findings may be conveniently divided into different stages. König's classification is satisfactory if slightly modified.

First Stage.—The first stage is simply the presence of free fluid blood in the joint. It is rapidly absorbed under proper treatment, and leaves no traces except a moderate brownish or yellowish discoloration of the capsule and synovial surfaces, due to the retention of blood pigment. The articular cartilage on the ends of the bones does not lose its gloss or whiteness, and joint function becomes normal. Many patients after an attack of this kind have no recurrences in any individual joint, though several articulations may suffer in succession. These cases, therefore, present little of interest to the orthopedic surgeon and are usually treated successfully by the general practitioner as acute articular rheumatism.

Second Stage.—With repeated hemorrhages in a single joint, distinct pathologic changes take place which are very remarkable. The capsule becomes thickened and succulent and much darkened. A fibrinous deposit appears all over the capsule and the synovial folds. Delicate, brownish, pigmented tufts form on these areas, and later filiform, slender threads grow from them and float swayingly about in the blood serum, like seaweed. The articular cartilage itself is invaded by brownish patches and tufts, and begins to degenerate, and curious characteristic defects are left, shallow, irregular, like the outlines on a map. The rest of the cartilage becomes brownish and loses its gloss.

Third Stage.—Later comes the third stage, with adhesion of these little tufts to the opposite articular cartilage, causing a more or less complete ankylosis. The fluid in the joint is absorbed, and only the thickening of the synovial surfaces, and the ankylosis remains, with usually a marked flexion of the joint. There is never any tendency to abscess or to sinus formation.

CLINICAL MANIFESTATIONS.

The clinical picture in the first stage may be confusing. Some cases closely resemble rheumatism with pain, swelling and joint effusion. This type usually follows trauma and when less severe may be diagnosed as simple synovitis; while other cases come on spontaneously with a painless and fluctuating swelling of the joint and little or no interference with function. Either variety progresses rapidly to perfect cure unless followed by exacerbations due to repeated hemorrhages. In the second stage we see what is often a perfect picture of a tuberculous joint in a subacute condition, thickened capsule, effusion, limitation of motion, beginning flexion-deformity and spasm of hamstring muscles. This was the condition of the joints operated on by König. Atrophy of the limb is pronounced and the differential diagnosis is most difficult. In the third stage there may be a complete bony ankylosis, as in a case reported by Summers, with atrophy and marked flexion, or perhaps a great limitation of motion, with the patella fastened to the femur by small areas of bony adhesions arising in places where the cartilage has been destroyed.

It is stated that a rise of temperature may occur during acute attacks of hemarthrosis, to as high as 102 F., but it is rare, and rapidly subsides, becoming normal in a few days.

DIAGNOSIS.

First Stage.—The conditions most closely resembling the first stage of hemarthrosis are acute synovitis and intermittent hydrops. In acute synovitis there is always a history of a fairly severe injury, the pain and discomfort are generally greater, and a local point of distinct tenderness can be made out at the site of the injury. The pain on motion and the functional disability are greater than in hemarthrosis and the effusion disappears more slowly. A careful aspiration of the fluid, under rigid asepsis, and using a needle of a very small caliber, would probably be harmless in any case and would afford valuable information. It is practically painless, if skilfully done, and I recommend it as a routine procedure in doubtful cases.

Intermittent hydrops, or hydrarthrosis, is a very rare disease, only about 70 cases being reported in the literature. It is characterized by a sudden painless, or nearly painless, effusion into the joint, a rapid disappearance of this effusion, and a complete recovery, followed by a series of precisely similar attacks at remarkably regular intervals, this periodicity, the mildness of the attack, and the absence of any traumatism being the chief characteristics. In a few cases, the pain has been a more prominent feature. Nothing is known of the etiology, and aspirations have shown usually a clear sterile fluid.

The various forms of infectious arthritis, such as gonorrheal, typhoid, pneumococcus, scarlatinal, and so forth, as well as the ordinary pus-germ infections, are much more painful and persistent than hemarthrosis, are attended with greater constitutional disturbance, and have the antecedent disease as a suggestive factor in the diagnosis. Acute articular rheumatism is rarely confined to a single joint, and has the same general diagnostic differences as the other infectious arthritides.

A true hemarthrosis is unquestionably the cause of the joint symptoms occurring in the so-called hemorrhagic diseases, such as Henoch's purpura, purpura rheumatica (Schoenlein's disease), purpura hemorrhagica, and scurvy. In these diseases the petechial hemorrhages into the skin and mucous membranes will at once suggest the probability of a similar involvement of the synovial tissues.

Second Stage.—In the second stage, the thickened capsule, the limited motion, and the beginning flexion suggest tuberculosis, but careful examination will show that the spastic contraction of the hamstrings is not a true reflex spasticity, but can be voluntarily relaxed. Also, there is no free fluid in hemophilic joints after the hemorrhage has been absorbed, and no individual points of tenderness can be found. Nearly all, if not all, tuberculous joints show a permanent increase in both local and bodily temperature, the latter usually reaching 99 or 99.5 degrees in the afternoon. The general onward march of the lameness and swelling, without any very sudden exacerbations or remissions, together with perhaps a cold abscess or night cries, would point to tuberculosis. Some of the so-called chronic rheumatoid diseases, especially arthritis deformans, bear a certain resemblance to hemarthrosis, but the characteristic grating, the slow onset, the involvement of several joints and the presence of irregular bony or cartilaginous hypertrophies at the edges of the joints would exclude hemarthrosis.

Third Stage.—In the third stage the clinical picture may be exactly that of an old tuberculous joint with complete ankylosis and without evidence of suppuration. It may be absolutely impossible to make a diag-

nosis without the aid of a complete and intelligible history of the case. The flexion of the hemophilic knee is usually not so exaggerated as that of an untreated tuberculous knee, and there is less backward displacement of the head of the tibia. Before considering operation in any old ankylosed joint where the history and examination do not positively rule out hemophilia, a test of the coagulability of the blood should be made.

TREATMENT.

The treatment in the primary stage should be such as will promote the absorption of the effused blood. I recommend aspiration with a fine needle, believing that it is of great importance to prevent, so far as possible, the deposit of fibrin on the joint surfaces, and that it is hardly possible for a fatal hemorrhage to occur through the wound of a small needle. After the blood has been removed, a few cubic centimeters of adrenalin solution should be injected, and a pressure bandage applied for five or six hours. The absorption of the blood, in case aspiration be deemed inadvisable, can be hastened by free use of the affected joint. It should not be put up in a plaster cast or in any other kind of fixation, after the first day, because any aseptic fluid in any joint will be absorbed more quickly under motion and massage than under fixation. This has been well demonstrated by Hosmer, Henrotin, and others in their treatment of acute synovitis. Constitutional treatment by such drugs as gelatin, adrenal extracts and calcium chlorid offers some security against future attacks, and should be tried faithfully. It does not show any great uniformity in results.

In the later stages, when there is a tendency to flexion, it is wise to apply traction until the joint is straightened, and then to use a splint or cast until the tendency has disappeared. Ankylosis in flexion might be corrected by the Goldthwait genuclast, by forcible manual redressment, or even by osteoclasis, followed by immobilization until ankylosis in good position has occurred. Any cutting operation should be shunned like the plague.

100 State Street.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

SUBSTANCES USED AS VEHICLES.

CHAPTER XXVI.

The great majority of physicians pay all too little attention to the art of rendering their prescriptions pleasing alike to the eye and to the palate. Even in medical schools, if the matter is considered at all, it is usually deemed sufficient to instruct the student to give the mixture a sweet taste, by the addition of syrup, or a distinctive aroma by the addition of one or the other of the official medicated waters, with little regard for individual taste or the nature of the mixture. In the matter of appearance it is commonly considered quite sufficient to avoid the inky mixtures produced by the addition of iron compounds to preparations containing tannin, or tannin-like substances.

From the point of view of the patient it is safe to say that the appearance of a mixture is often of even greater importance than the taste, not alone in so far as it concerns the individual preference of the patient, but even to the extent of affecting the absorption and the subsequent assimilation of the medicine, since we know that the digestive secretions are stimulated by tempting looking substances and are inhibited by those which appear disgusting. In the case of women and children the subjects of flavoring and coloring are of much more importance than with men.

While the average physician will, no doubt, rightly consider that this subject does not deserve very extensive study on his part, he must admit that the observance of a few easily acquired rules may be well worth remembering.

Unlike the question of ready-made formulas for a great variety of conditions demanding individual consideration, there is no reason why flavoring and coloring should not be reduced to the very simplest forms and used as a routine whenever the mixture admits of it.

Despite the pernicious activity of manufacturers of ready-made pills and tablets in flooding the market with all possible substitutes for tinctures, fluid extracts and solutions, it has been amply demonstrated that these solid forms of medicine can not compare in efficiency or in usefulness with the equivalent preparations given in liquid form. We will, therefore, confine ourselves entirely to the discussion of these liquid forms of medicine and to enumerate and point out the uses of the several preparations that are available as solvents, or as vehicles, for the administration of otherwise solid substances.

On a subject that is so far-reaching and varied as this must be, it will, of course, be evident that the several matters can not be taken up in detail, but must of necessity be more in the nature of suggestions for observation and study. With the wealth of material that is available, by the use of the official aromatics and diluents, it should be a comparatively easy matter for a physician to become thoroughly familiar with the properties and possible uses of at least several of these preparations and by judicious combination to produce not alone a variety of mixtures, but, also, to impart to them an individuality in which he may well take pride.

Many of the comparatively tasteless substances merely require the addition of some mildly aromatic solvent or diluent, such as the aromatic medicated waters. Substances that are more acrid, bitter or saline in taste may be masked by the addition of a small amount of syrup to the aromatic, or by the addition of a preparation containing glycyrrhizin, like the now official elixir adjuvans. Nauseous bitters are best masked with strong aromatics and syrup. The simple but persistent bitters, such as quinin and strychnin, are agreeably modified by such an aromatic as tincture of sweet orange peel, wine and sufficient syrup to suggest sweetness. As an example of such a preparation we may mention the bitter wine of iron, which will be appreciated if one will but taste this really elegant preparation.

Medicated Waters.

The most simple and, therefore, the most readily available of the official diluents or vehicles are the aromatic, medicated waters. They are particularly well adapted for dissolving such comparatively mild tasting substances as potassium citrate, sodium benzoate, sodium salicylate, morphin sulphate and antipyrin.

One of the most pleasant of these preparations is:

Aqua Amygdalæ Amaræ.—U. S.—Bitter almond water. This contains about 0.1 per cent. of oil of bitter almond, and appears to be particularly adapted for use with sedative expectorants such as codein sulphate.

Average dose: 4 c.c. (1 fluidram).

The following are particularly well adapted for use with children:

Aqua Anisi.—U. S.—Anise water, and

Aqua Fœniculi.—U. S.—Fennel water. They contain about 0.2 per cent. of the respective volatile oils and have long been popular as correctives or diluents for medicines such as fever mixtures and mild anti-diarrhea mixtures, designed primarily for children.

Average dose of either of the above: 16 c.c. (4 fluidrams).

Another aromatic water that has met with considerable use is:

Aqua Cinnamomi.—U. S.—Cinnamon water also represents approximately 0.2 per cent. of the volatile oil and, as a flavor, is sometimes preferred.

Average dose: 16 c.c. (4 fluidrams).

By far the most popular of the aromatic waters are:

Aquæ Menthæ Piperitæ.—U. S.—Peppermint water, and

Aquæ Menthæ Viridis.—U. S.—Spearmint water. These, like the preceding, are simple solutions of volatile oils in water

and represent approximately 0.2 per cent. of their respective volatile oils.

Average dose of either: 16 c.c. (4 fluidrams).

Peppermint water, or spearmint water, is particularly well adapted for use with the mild alkalies such as potassium bicarbonate or sodium bicarbonate, or mixtures of these with other soluble salts.

The efficiency of solutions of the alkaline bicarbonates may usually be enhanced by the addition of a simple bitter, such as tincture of nux vomica or tincture of calumba.

Simple solutions, even such as contain a small addition of a bitter substance, should be directed to be filtered, as this adds materially to the appearance of the mixture and thus enhances its palatability and efficiency.

When a vehicle having more pronounced characteristics is desired the official aromatic elixir will probably serve to meet more possible indications than any one other preparation. It may also be varied by the addition of the fluid extract of glycyrrhiza, as in the official elixir adjuvans, or by the addition of one of the official spirits, syrups, aromatic tinctures or simple wines.

Aromatic elixir is particularly useful in connection with the scale salts of iron, the bitter alkaloids, and also with the soluble bromids and iodids.

The following are among the preparations that will be found to be of use in connection with the possible modifications of the simple elixir:

Elixir Aromaticum.—U. S.—Aromatic elixir is practically a solution of a mixture of the oils of orange peel, lemon, coriander and anise in 25 per cent. alcohol, containing about 38 per cent. of syrup. The resulting preparation is not alone strongly aromatic, but is also sufficiently dense to hold finely divided substances well in suspension, while the alcohol content is not sufficient to be objectionable in the ordinary doses.

Elixir Adjuvans.—U. S.—Adjuvant elixir. This is a simple mixture of 12 parts of fluidextract of glycyrrhiza with 88 parts of aromatic elixir, and is particularly well adapted for masking acrid, bitter or saline materials. The contained glycyrrhizin not being soluble in acid solutions, the preparation is obviously not suited for use with diluted acids or acid salts.

The official spirits that may be used as additions to aromatic elixirs or as correctives to other alcoholic or hydroalcoholic solutions are:

Spiritus Anisi.—U. S.—Spirit of anise contains 10 per cent. of oil of anise in alcohol.

Average dose: 4 c.c. (1 fluidram).

Spiritus Amygdalæ Amaræ.—U. S.—Spirit of bitter almond contains 10 per cent. of oil of bitter almond in alcohol, and is the most potent of the official spirits. It is markedly aromatic and a very small quantity usually suffices to impart a distinctive almond odor and taste.

Average dose: 0.5 c.c. (8 minims).

Spiritus Cinnamomi.—U. S.—Spirit of cinnamon contains 10 per cent. of oil of cinnamon.

Average dose: 2 c.c. (30 minims).

Spiritus Gaultheriæ.—U. S.—Spirit of gaultheria is a useful preparation for cases in which the patient appears to have a predilection for teaberry or wintergreen. This preparation imparts a distinctive odor and taste and should be used with caution, as it appears to be objectionable to many people. It represents 10 per cent. of oil of gaultheria.

Average dose: 2 c.c. (30 minims).

Spiritus Menthæ Piperitæ.—U. S.—Spirit of peppermint and

Spiritus Menthæ Viridis.—U. S.—Spirit of spearmint, in addition to containing 10 per cent. of the respective volatile oils also represent the alcohol-soluble portion of 1 per cent. of the respective dry crude drugs, which impart to them a distinctive yellowish-green color.

Average dose of either: 2 c.c. (30 minims).

The aromatic tinctures that are particularly useful for adding distinctive characteristics to liquid mixtures are:

Tinctura Aurantii Dulcis.—U. S.—Tincture of sweet orange peel. This preparation is directed to be made from the fresh peel and represents approximately 50 per cent. of the crude drug. It is a delicate but efficient aromatic and is useful in connection with any of the hydro-alcoholic mixtures.

Average dose: 4 c.c. (1 fluidram).

Tinctura Cardamomi.—U. S.—Tincture of cardamom represents 20 per cent. of cardamom in diluted alcohol.

Average dose: 4 c.c. (1 fluidram).

Tinctura Cardamomi Composita.—U. S.—Compound tincture of cardamom represents 2.5 parts each of cardamom and Saigon cinnamon, 1 part of caraway, 0.5 parts of cochineal and 5 parts of glycerin in sufficient diluted alcohol to make 100 parts.

Average dose: 4 c.c. (1 fluidram).

Tinctura Lavandulæ Composita.—U. S.—Compound tincture of lavender consists of a mixture of 0.8 parts of oil of lavender flowers and 0.2 parts of oil of rosemary in 75 per cent. alcohol, which is used to exhaust 2 parts of Saigon cinnamon, 0.5 part of cloves, 1 part of nutmeg and 1 part of red saunders, enough of the menstruum being added to make 100 parts.

(The possible uses of this preparation are probably best illustrated by the official solution of potassium arsenite, which is flavored and at the same time colored by the use of 3 per cent. of this tincture.)

Average dose: 2 c.c. (30 minims).

Tinctura Vanillæ.—U. S.—Tincture of vanilla represents 10 per cent. of vanilla in 65 per cent. alcohol and is sweetened by the addition of 20 per cent., by weight, of sugar.

The official simple wines are:

Vinum Album.—U. S.—White wine. This is an alcoholic liquid, made by fermenting the juice of fresh grapes, the fruit of *Vitis vinifera*, and usually contains about 10 per cent. of alcohol.

White wine constitutes an excellent vehicle for a number of acrid or bitter substances, and is particularly useful as an addition to the official aromatic elixir. If from 10 to 25 per cent. of white wine be added to aromatic elixir it will impart to the latter a distinctive and generally agreeable odor and taste.

Vinum Rubrum.—U. S.—Red wine is an alcoholic liquid that is made by fermenting the juice of fresh red-colored grapes, the fruit of *Vitis vinifera*, in presence of their skins, and subjected to the usual cellar treatment for fining and aging.

The official syrups that are generally well known or widely used as diluents, correctives or vehicles are:

Syrupus Acidi Citrici.—U. S.—Syrup of citric acid. This is a slightly acid syrup, flavored with tincture of fresh lemon peel, and is useful in connection with the aqueous solutions of the alkaline salts of organic acids, such as potassium citrate.

Syrupus Aurantii.—U. S.—Syrup of orange also contains a trace of citric acid and has a pleasant acidulous taste. It is frequently used in place of the syrup of citric acid and is preferred by many.

Syrupus Pruni Virginianæ.—U. S.—Syrup of wild cherry, while it represents the aqueous extractive of 15 parts of wild cherry, is most largely used as a pleasant vehicle or as an addition to other diluents, particularly in connection with expectorants.

Average dose: 4 c.c. (1 fluidram).

Syrupus Tolutanus.—U. S.—Syrup of tolu represents the water-soluble portion of 5 per cent. of tincture of tolu, and, like the preceding, is frequently used as a corrective to mixtures that are designed for use as expectorants.

Average dose: 16 c.c. (4 fluidrams).

Syrupus Sarsaparillæ Compositus.—U. S.—Compound syrup of sarsaparilla contains fluidextract of sarsaparilla, fluidextract of glycyrrhiza and fluidextract of senna, and is flavored with a mixture of the volatile oils of sassafrass, anise and gaultheria.

This preparation constitutes an interesting reminder of the widespread use of sarsaparilla as a universal panacea almost a century ago, but is now seldom used for any other purpose

than a vehicle. It is particularly useful for such acrid drugs as the soluble mercurial salts and the iodids and bromids.

Average dose: 16 c.c. (4 fluidrams).

For use with immiscible liquids, for making emulsions and for suspending insoluble powders in aqueous solutions it is an almost universal practice to use the official mucilages or gums.

MUCILAGO ACACIÆ.—U. S.—Mucilage of acacia, containing 34 per cent. by weight of acacia, 33 per cent. of limewater and 33 per cent. of distilled water, is probably the best known of these several preparations. It has a very wide field of usefulness, but as acacia is precipitated by alcohol it is not useful in connection with strongly alcoholic liquids. The presence of limewater may prove to be a disturbing factor in connection with solutions of the alkaloids, and here it may be readily substituted by the syrup.

SYRUPUS ACACIÆ.—U. S.—This represents 10 parts of acacia in a moderately heavy syrup.

MUCILAGO TRAGACANTHÆ.—U. S.—Mucilage of tragacanth contains 6 parts of tragacanth, 18 parts of glycerin and sufficient water to make 100 parts. This preparation is particularly useful in connection with alcoholic liquids and is very widely used for suspending the content of resinous tinctures in aqueous mixtures.

Another preparation that is used quite extensively to mask acrid, bitter or otherwise disagreeable drugs is the recently readmitted

EXTRACTUM MALTI.—U. S.—Extract of malt occurs as a semi-solid extract, having the consistency of thick honey, and is itself considered to be nutritive, tonic and laxative. It has been used quite extensively, particularly in connection with several well-known proprietary preparations, as a vehicle for cod-liver oil, cascara sagrada and the bitter alkaloids like quinin and strychnin.

Average dose: 16 c.c. (4 fluidrams).

Suggestive Coloring.

The subject of coloring is a much simpler one than is that of flavoring, but is of almost equal importance, if we are to judge by the practices that have been followed by manufacturers of elegant proprietaries for upward of a quarter of a century.

Coloring agents are primarily divided into such as are useful with alkaline and neutral substances and such as are useful with dilute solutions of the official acids and acid salts.

For those of the first class, preparations containing carmin or cochineal, for red, and glycyrrhizin for brown are readily available. For the solutions of acids and acid salts, however, neither of these substances would answer, as they are both precipitated by acids, and we have recourse, therefore, to cudbear for the red and caramel for the brown.

Taking the official aromatic elixir as a type, this may be colored a bright red by the addition of from 10 to 20 per cent. of the compound tincture of cardamom, which contains cochineal, or it may be given an equally bright red color by the addition of 1 per cent. of the tinctura persionis (cudbear) of the National Formulary. Cudbear is the source of the bright red color that is so common in proprietary preparations, and as cudbear itself has no known medicinal properties, apart from the pleasing suggestiveness of the resulting preparation, we must naturally conclude that the manufacturers of proprietary preparations have succeeded in impressing not alone the patient, but, in many cases at least, the physician also, by the judicious use of pretty colors.

The use of caramel or burnt sugar is too well known to need further comment, apart from the fact that the National Formulary contains a formula for a compound tincture of cudbear which contains 10 per cent. of caramel and will be found useful when a brownish-red preparation is desired.

A very pleasing golden-yellow mixture that appears to be fairly stable with either acid or alkaline solutions may be obtained by adding 1 per cent. or even less of the now official tincture of hydrastis. This preparation, though made with 65 per cent. alcohol, mixes readily with the official elixir, but precipitates slightly when added to aqueous solutions, and they should, therefore, be directed to be filtered before being dispensed.

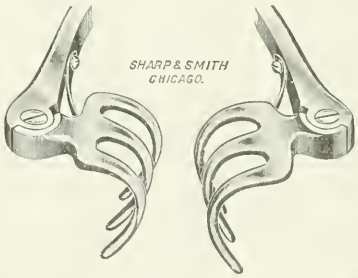
New Instrument

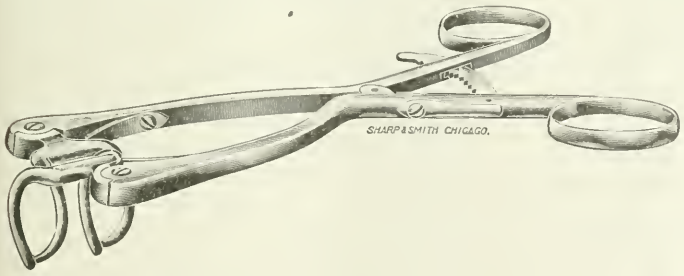
A NEW SELF-RETAINING WOUND RETRACTOR.

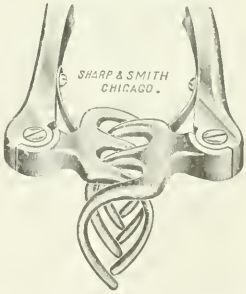
CHARLES ADAMS, M.D.
CHICAGO.

For the past ten or twelve years I have made use of a self-retaining retractor which I believe to be of sufficient value to merit publication of its description.

By the backward crossing of the teeth of the instrument when closed the retractor can be introduced with facility in a small wound. The operator can adjust the instrument to the required degree of traction and can depend on it to retain its place.







With these advantages, the retractor may take the place of one assistant and thus diminish the chances of infection, which are always increased in proportion to the number of hands coming into contact with the wound.

The retractor has been made in two sizes, the longer for abdominal work, the smaller for herniotomies, adenectomies, etc.

100 State Street.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[For other information see second page following reading matter.]

SATURDAY, JUNE 23, 1906.

FOURTH OF JULY TETANUS.

In another week we shall experience our annual tetanus inoculation experiment, its size depending on the extent to which public authorities permit the violation of the laws that, in nearly every community, prohibit the use of firearms. The results of the inoculations depend on two factors, the patient and his family, and the family physician. For every blank cartridge, giant cracker or cannon wound, public authorities or public sentiment are responsible. For every one of these wounds that causes tetanus, neglect on the part of patient or of his physician is responsible. We state these facts thus plainly because thorough study of the Fourth of July casualities for several years has taught us that they are facts. In 1903, the total result of the celebration was 466 dead, 415 cases of tetanus and 3,983 injured; in 1904, it was 183 dead, 105 cases of tetanus and 3,986 injured; in 1905, it was 182 dead, 101 cases of tetanus and 5,994 injured. The great and gratifying decrease in the number of deaths, and especially of tetanus, since 1903, we must ascribe to two chief causes; first, the reduction in the use of blank cartridges as a means of celebration; and second, the improved care received by patients with blank cartridge wounds. As to the decrease in these wounds, the number in 1903 was 1,672; in 1904, 1,005; in 1905, 809. This decrease occurred as the result of enforcement in many cities of laws controlling the sale and use of pistols for celebration purposes, and because of the agitation in the daily papers and medical journals against this source of tetanus. That this explanation is correct is shown by the great increase in injuries from other causes against which there was no special agitation.

The improved care of blank-cartridge wounds is well shown by the reduction in cases of tetanus, which decreased in number by 75 per cent., while the number of blank-cartridge wounds decreased but about 30 per cent. in one year and 50 per cent. in the other. This was due partly to the more general understanding by the laity that blank-cartridge wounds are extremely dangerous because of the frequency of lockjaw following them, hence a larger proportion of boys with such wounds received prompt medical attention than was formerly the case. Partly it was due to a corresponding appreciation on the part of practicing physicians of the dangers of these wounds and the necessity for vigorous surgical treatment. As a result, more such wounds were treated by thorough opening, cleansing and free drainage, which reduced the subsequent occurrence of tetanus to a comparatively small percentage of the former incidence. More progressive physicians insisted on a prophylactic injection of tetanus antitoxin, and were able to rest assured that tetanus would not develop in any of their patients. We have no reason to expect that conditions this year will be much different from those of last July. In a number of cities public opposition to dangerous methods of celebration has increased, and in these an improvement may be expected such as was observed in other cities where the same attitude was adopted in the two preceding years. It is to be hoped that in communities in which a good start has been made no retrogression will occur. But at the best there will be several hundred cases of blank-cartridge wounds brought to physicians for treatment, and our greatest responsibility lies with these. We still, occasionally, sadly note in accounts of fatal tetanus cases that the patient saw a "doctor" who dressed the wound, and said that it was not serious: fortunately this statement is seen far less frequently than it was, but that it ever appears is a reproach to our profession.

We can add nothing to what we have previously said concerning the prophylaxis of Fourth of July tetanus, the sum and substance of which is that every penetrating or lacerated wound received from Fourth of July explosions must be treated as if it were known to contain tetanus bacilli in its deepest recesses. Only thorough opening and exploration of the entire tract under anesthesia, followed by thorough use of antiseptics, and free open drainage, can be looked on as an adequate cleansing. This should be followed at the earliest opportunity by the injection of from 5 to 10 c.c. of tetanus antitoxin (depending on the age and size of the patient). That the antitoxin is an essential feature of the prophylaxis has been repeatedly demonstrated by the occurrence of tetanus in patients whose wounds have been treated carefully, according to surgical principles.[1] That antitoxin is effective as a prophylactic has been equally well demonstrated, both in veterinary and hospital practice, and in our annual Fourth of July epidemics of the past several years. Consequently we feel safe in saying that if every Fourth of July injury were treated in the thorough manner outlined above on the day that it is received, there would be no tetanus epidemic.

Curative treatment of tetanus still offers us but a slight degree of encouragement. There can be no doubt that a distinct progress has been made, for the number of recoveries reported during the past two years has decidedly increased. To judge from the reports received, the greatest measure of success has been obtained by those who have practiced the combined intraspinal and intraneural injection of antitoxin, as described by Rog-

1. Noer: The Journal, Feb. 10, 1906, p. 432, and the accompanying editorial, p. 436.

ers;[2] at the same time withdrawing much of the toxic cerebrospinal fluid and giving abundant subcutaneous injections of antitoxin. Controlling the spasm by intraspinal beta-eucain injections, as advocated by Murphy, together with the usual administration of sedatives and chloroform as indicated, seem to be valuable auxiliaries. The use of magnesium sulphate injections as proposed by Meltzer[3] must still be regarded as in the experimental stage. Matthew's[4] method of injection of a solution containing calcium and other salts seems to depend similarly on the depressant effect of the alkaline-earth ions (calcium, magnesium) on the central nervous system. In spite of all these methods, however, recovery from tetanus remains an exceptional termination, and we must rely for our chief results on prophylaxis, both legal and surgical.

INSANE ASYLUM SCANDALS.

Although it might seem to be a part of the general tendency to the exposure of abuses, real and alleged, at the present time, there is nothing specially unusual in the fact that three or four separate insane asylum investigations, based on serious charges, have been under way during the past two or three weeks. Institutions of no other sort are looked on with more jealous scrutiny by the public than insane hospitals and there are none against which charges are more readily believed. When a real scandal occurs it is immediately made the most of by the newspaper, and the public is seldom in the proper state of mind to estimate the facts at their real worth and signification.

There is, unfortunately, too much ground for the lack of confidence that exists. Owing to the fact that in many parts of this country public asylums are considered more or less as political institutions and the positions in them as party spoils to be used by partisan politicians as part of their patronage, many abuses have crept in, and when scandals do occur they are well utilized for political purposes. The superintendents and higher officials, if not the whole working personnel of the institutions, are likely to be selected largely according to their political preferences and influence, and, though often respectable men and sometimes able in a professional way are not qualified as experts for their special responsibilities. Hence, the low standing of American psychiatry. Many unworthy and unfit persons are included in employés selected on political grounds, and the necessary discipline of the institution is corrupted by political "pull." There is little or no incentive to the acquisition of special qualifications on the part of the medical or attendant force; hence, neglect, if not abuse, is pretty nearly sure to follow. The trustees or directors are business men or politicians with no adequate ideas or ideals of the true functions of the institution. The superintendent is generally a respectable physician, but too often is selected for his political rather than his general qualifications, and the medical staff, if not chosen by him, are chosen on the same general principles. If the superintendent is allowed to select his assistants, some attention to their qualifications may be given, but their political standing must usually be all right. They are in any case apt to be little regarded by the trustees unless they have strong political backing, and their position and social standing in the institution, so to speak, largely depends on the personal equation of the superintendent.

That there have not been more asylum scandals under such a condition of affairs is surprising. The possibilities of such a system are self-evident, and the reason they are not realized in every case is because there is more good in human nature and more sense of responsibility in political appointees than the system itself demands. There are many institutions in this country that are conducted in a fairly respectable way even under such a system, and where political changes are not frequent actual progress and reforms may be brought about. The conditions, however, are better than they were, the tendency to reform is certainly spreading and, taking the country as a whole, there are reasons for encouragement. There is even an encouraging prospect that the politically-managed insane asylum will soon be the exception and not the rule throughout the land.

While we attribute the major part of the evils and the consequent lack of confidence on the part of the public to the past and present political management of these institutions, it does not follow that asylum scandals would entirely disappear were there no partisan political management whatever. Accidents, misuse of patients and other evil happenings are always liable to occur even when the *morale* of the institution is kept at its highest point, and this depends not only on the personality of the superintendent, his professional ability and his selection of his subordinates, but also on the element of chance to a certain extent. Even ideal institutions, and there are such, may not escape. "Accidents will happen in the best regulated families" and in the best regulated institutions as well, though their occurrence may be reduced to a minimum. No one can foresee all the possibilities, and, though a retrospect may show a fault, it is not always necessarily a very blamable one.

In Great Britain at the present time the institutions, public and private, for the care of the insane are probably as well regulated and guarded against such misfortunes as anywhere in the world, and yet it is in one of these that a scandal that was worse in its way than anything that has ever been reported from an American

2. "Treatment of Tetanus by Intraneural and Intraspinal Injections of Antitoxin," THE JOURNAL, July 1, 1905, p. 12.

3. "Treatment of Tetanus by Intraspinal Injection of Magnesium Sulphate," THE JOURNAL, May 19, 1906, p. 1502. Gives Meltzer's method.

4. "The Prophylaxis and Treatment of Fourth of July Tetanus," THE JOURNAL, June 18, 1904, p. 1621. Special article giving details of surgical methods and use of antitoxin. Included is the formula given by Matthews for calcium-containing salt solution (published in THE JOURNAL of August 29, 1903, p. 565.

asylum has occurred within a very few years. Under the conditions existing over there it excited little public comment, as public hospitals for the insane have, as a rule, the public confidence, and the mishaps that occur are so rare that they are not considered necessarily avoidable when they do happen. The commissioners in lunacy investigate, and their decision is accepted as trustworthy and final. In this country such an occurrence would have been exploited *ad nauseam* by the yellow newspapers, and in states where the traditions of political control still continue would probably receive a whitewashing report that might not whitewash and possibly be utilized as the basis of partisan recriminations. If due to a general laxity of discipline the blame might be shoved off on some subordinate, since the party can not afford to suffer through recognition of the responsibility of the higher authorities. Each such untoward happening should be an insurance against its repetition and every investigation a step toward reform of existing evils, and we believe that this will after all be the ultimate result.

It must be remembered, moreover, that in many cases unfounded charges are liable to be made. There is a considerable class of the insane that are very properly detained in institutions very much against their will, and we can not expect them always to take a favorable view of what they see and experience. Many, when fitted to be discharged from custody, still retain an irrational state of mind as regards their detention and are liable to imperfect and prejudiced recollections of their treatment. The position of an asylum superintendent is not always a pleasant one on this account, no matter how well meaning and conscientious he may be, and more than one has himself become insane as a result of his experience.

What is needed in this country, first of all, is absolute abolition of any idea that a charitable institution of this kind has any connection with politics, next a proper supervision of these institutions by some higher authorities like the British commissioners in lunacy, men selected solely on account of their experience as alienists, their known integrity, and possibly also in one of the members a high legal standing. Then there should be a system of promotion by merit and of special education of the medical staff in psychiatry. The state should educate its alienists from interne up to superintendent, as is done in New York State, and a subordinate position should not be considered as a mere temporary episode in the career of a young practitioner. The social standing of the assistant physicians should be higher. They should be encouraged to do good work and should get due credit for it and due reward, and responsibility should be accompanied by corresponding authority. At present too often the superintendent is all in all to the trustees and the rest of the medical staff a matter of very slight consideration. Lastly, there should be no undue secrecy about the internal workings of the institution and certainly no suppression of facts from those who are entitled to know; the business administration should always be subordinate and the medical and humane functions of the institution be first considered. It is needless to say that the utmost care should be exercised in the selection and retention of attendants and other subordinates and that the humane ideas of treatment of the insane should everywhere be inculcated and prevail. These are self-evident necessities of a successful administration.

THE RELATION OF WINDS TO SICKNESS.

Every one is familiar with the statements regarding the astonishingly low mortality in Chicago, and we are not venturing to criticise their accuracy. We are ready to admit that it is becoming increasingly difficult for people at any age to die in that fortunate city, and that stockyard odors, dirty streets, inadequate sanitary inspection and even impure foods are powerless in the face of the life-giving forces of the climate of Chicago. It is only when an attempt is made to explain the causes of this victory over the common enemy of mankind that we are apt to raise a slight protest. For instance, we are informed by the Bulletin of the Health Department that the soubriquet, "Windy City," is one that Chicago should be proud to bear, for "it is to the great wind movement of the city that it largely owes its pre-eminent healthfulness." The bulletin goes on to quote Prof. E. G. Dexter, of the University of Illinois, who, in a recent work, made the statement that such "phenomena" as "absence from school, absence from public duty, clerical errors, sickness and death" are more frequent in periods of aerial stagnation than in those of high winds.

Without going into the question of how Professor Dexter's statistics were gathered, and the other factors which influence mortality aside from atmospheric conditions, we wish simply to give the reverse side of the high-wind question as presented by Hueppe of Vienna.[1] To Hueppe the term, "Windy City," so long applied to Vienna, is synonymous with "Consumptive City." High dry winds, with their inevitable accompaniment of dust, he thinks, are responsible, in large degree, for the enormous mortality from tuberculosis in Vienna as compared with other large cities, such as Berlin and London. Berlin's mortality in ten years was 23.1 per 10,000 of population. London's, for the same period, was only 17.7, while Vienna's reached the astounding height of 46.4. Hueppe goes on to say that we realize the harmful effects of dust in closed spaces, in cotton and wool factories, cutleries, stone-cutting establishments, etc. Why, then, should we not recognize the dangers of dust-laden air in the streets, especially when we consider the nature of the dust. It is by the irritating effect on the lungs that dusty air increases pul-

1. Wien. klin. Wochft., 1904 p. 1001.

monary tuberculosis by preparing the lungs for tuberculous infection rather than by actually conveying the infection, for such dust off the streets is probably seldom rich in tubercle bacilli. Another danger is that of secondary infection. A case of uncomplicated tuberculosis may, by the inhalation of street dust, be changed into one of mixed infection. Thus may be explained the low rate of mortality from tuberculosis in damp, muddy, foggy cities, such as Berlin and London, as compared with dry and windy ones.

The mortality rate from tuberculosis in Chicago for ten years, from 1890 to 1899, inclusive, the period covered by Hueppe's statistics, is 17.1, a rate only very slightly below that of London. Yet in London conditions contributory to tuberculosis are exceptionally bad; 30 per cent. of the people live in poverty, alcoholism abounds, while overcrowding and underfeeding and physical degeneracy due to generations of poverty are seen to an extent unknown in any American city. Why, then, should Chicago, with her comparative prosperity, her lack of serious overcrowding and of old infected tenements, have a death rate from tuberculosis almost equal to London's? May not the reason be sought in the dust-laden atmosphere, caused by unclean streets and high winds? For though the general mortality of Chicago is low, yet the death rate from tuberculosis is proportionately high, being always since 1892 more than one-tenth of the whole.

DUST REMOVAL, NOT DISPERSAL.

We are in the midst of the dust season, and the problem of the removal of the fine particles that gather over everything, and especially on wearing apparel, is once more acute. Since the invention of the vacuum process by which dust is sucked up into a receiver to be carted away instead of being merely swept or brushed up into the air and then allowed to settle down again, these old-fashioned methods have come to seem especially obnoxious. In houses, especially where there are children, it would seem to be advisable that clothes, if dusted within the house at all, should be brushed in some special part of it quite segregated from the ordinary living rooms, and that no brushing should be done at night before the retirement of the family. Undoubtedly many of the so-called summer complaints are really not diseases of hot weather so much as of dusty weather. The dust is blown hither and thither and settles on the food and on the hands and thus readily finds its way into the digestive tract. For most people, such opportunities for infection mean nothing, since their resistive powers are quite sufficient to protect them, but for children and those in delicate health the presence of such infectious material in the intestinal tract may make all the difference between good physical condition and even severe illness. It is especially while traveling that the dangers of dust become more serious. It seems a pity that with the amount of energy that might readily be employed on a railroad train, for instance, for running some simple vacuum contrivance for the proper removal of dust, there should as yet be nothing of the kind hinted at even on the best trains. The morning brushing in the Pullman car is undoubtedly a source of considerable danger for persons with delicate throats or with weak lungs or with sensitive gastrointestinal tracts. It is here evidently that the next great hygienic improvement on cars and in dwelling houses must come. The old-fashioned methods are entirely too prone to produce serious results, and physicians should be leaders in the movement to relegate them to the lumber heap of disused things of the past.

AN AGED ATHLETE.

An old-time champion pedestrian, whose record 30 or 40 years ago aroused the country, has recently at the age of nearly 70 performed the feat of walking from Philadelphia to New York, a distance of 96 miles, in a little over 23 hours and finished the task in excellent physical condition. This is a good example of the fact that the physical organization of man need not necessarily go to pieces before the allotted three score years and ten, when, according to some, the system is worn out and useless. Of course, this man Weston is an exceptional case, but he shows what the possibilities are, and probably a great many other individuals of as great age could do likewise.

"THOU SHALT NOT KILL."

That misguided doctor in the Iowa legislature who created a newspaper furore last winter by his bill asking for compulsory killing off of incurables, threatens to introduce the same measure again, according to the newspaper press reports. It was considered a joke then, but evidently it was not so intended. The idea seems to suit a certain class in whom the moral principles are somewhat perverted or confused and the intellect more or less defective, judging from arguments brought forward in favor of the proposition. Fortunately, these individuals are few. The alleged plea that incurables are practically put out of existence in large hospitals is simply a libel on the profession and should be resented by us all as such. The state of Iowa will seriously endanger its reputation for good morals and good sense, if its legislature gives this proposition any semblance of a respectful consideration. The sixth commandment is still in force.

A NOTED X-RAY VICTIM.

The recent death of a prominent Rochester (N. Y.) physician from cancer, attributed to excessive exposure to the *x*-ray, adds to the long list of the martyrs to medical science and is a striking evidence of the dangerous possibilities of this very powerful agent. There have been many cases of inconvenient symptoms among *x*-ray workers, but we believe there are few serious cases that have originated of late years. Dr. Weigel was a pioneer in this line of investigation, and it is likely that he neglected due precautions before their necessity had been demonstrated by general experience. The fact that his case was diagnosed as cancer by one of the most eminent pathologists and that its clinical history was such as to warrant the diagnosis is suggestive. It does not favor the parasitic theory of that disease nor does it

necessarily disprove it. It shows very clearly, however, that the action on cell growth of the *x*-rays, which are so often beneficial in malignant disease, is not in all cases a very controllable one, and it emphasizes the necessity of special caution in their use.

FEE BILLS AND ANTI-TRUST LAWS.

The attorney general of Kansas has given out an opinion, according to newspapers, that the mere organization of physicians and the giving out of a scale of fees is a violation of the antitrust laws of the state. Of course, this is merely one official's opinion, but it can be acted on as the law until the courts decide otherwise. We do not know the full facts of the case as regard the points submitted to the attorney general by the county attorney who raised the question, but his decision seems to be a broad one, covering all society fee bills. Ordinarily these are understood by the profession as simply the expression of what is a reasonable charge for the services rendered and as not limiting the physician's or surgeon's privilege to charge more or less according to the special circumstances of the case. How such could be a violation of any reasonable laws is not very obvious. There have been medical fee bills as long as there have been medical societies, and they have been recognized and admitted as evidence in courts of law thousands of times.

Medical News

ARKANSAS.

State Medical Society Meeting.—In the report of this society, published in THE JOURNAL, May 26, it was stated that Dr. Morgan Smith recommended the administration of menthol in the treatment of uncinariasis. We are informed that Dr. Smith did not recommend the administration of this drug in the treatment of uncinariasis, in fact, did not touch on the treatment of the disease, as the subject was arranged in the form of a symposium as follows: "Prevalence of Uncinariasis in Arkansas, Etiology, Symptomatology and Pathology," Morgan Smith, Little Rock; "Diagnosis, Prognosis, Prophylaxis and Treatment," W. S. Stewart, White Oak. The mistake of the correspondent who sent us the report of the meeting probably arose from confusion of menthol with thymol which was recommended by Dr. Stewart.

CALIFORNIA.

Personal.—Dr. and Mrs. W. Jarvis Barlow, Los Angeles, are taking a trip to Alaska.——Dr. Trusten P. Peery, Yuba City, has been appointed physician of Sutter County.——Dr. John E. Hubble, Lordsburg, has gone to Chicago for two months.

A Correction.—Dr. Oswald M. Justice, Los Angeles, whose death by suicide was reported in a portion of the issue of THE JOURNAL of January 20, writes under date of May 29 as follows:

> I am alive and well and have never been convicted of any crime nor sentenced to any imprisonment. I am now, and for several years have been, practicing my profession in Los Angeles. I was greatly surprised and shocked to read the article in question. It is untrue and libellous. It is needless to say it has inflicted on me and my many friends great mortification and distress, and has done me irreparable injury, as well as injure my reputation and my business.

We regret that this error occurred. The fact is, however, that after only a few copies of THE JOURNAL containing the notice had been printed, it was realized that the source of the information was not sufficiently authentic without further verification and the item was at once removed.

Commencement.—The annual graduating exercises of the College of Physicians and Surgeons, Los Angeles, were held June 6. A class of three was graduated. Dr. Charles W. Bryson presented the diplomas, and Dr. James P. Booth delivered an address on "The Vicissitudes of the Young Practitioner."

At the annual commencement exercises of the College of Physicians and Surgeons of San Francisco, May 17, a class of 29 was graduated. Dr. David A. Hodghead, dean and secretary of the college, announced the names of the graduates, and Dr. Winslow Anderson, president of the college, conferred the degrees.

ILLINOIS.

Personal.—Dr. Bruce D. Parrish, Mattoon, has been appointed physician to the Odd Fellows' Home.——Dr. W. M. Avery, Compton, has been appointed physician for the Paw Paw district of Lee County.

Podstata Goes to Elgin.—Dr. Vaclav H. Podstata, superintendent of the Cook County Institutions, Dunning, has resigned to accept the superintendency of the Illinois Northern Hospital for the Insane, Elgin, made vacant by the resignation of Dr. Frank S. Whitman. He assumes his new duties on July 1.

Investigation at Kankakee.—The grand jury, which for two weeks has been investigating the charges of cruelty and gross mismanagement of officials of the Illinois Eastern Hospital for the Insane, Hospital, adjourned June 15, after submitting a report which sets forth that all except one of the alleged cases of mistreatment were found to be baseless. An indictment was found against an attendant who had assaulted a deaf and dumb patient.

Chicago.

Commencement.—At the commencement exercises of Rush Medical College, June 13, 52 students received the degree of doctor of mdicine, and Dr. Roswell Park, Buffalo, N. Y., delivered the annual address.

Annex to St. Luke's.—The plans for the George Smith memorial addition to St. Luke's Hospital have been completed. The building will be six stories in height, with a frontage of 135 feet on Michigan Avenue. It will have 112 private rooms, a number of which are to be arranged in suites, with private baths. The building is designed to afford accommodation for the superior grade of private patients.

Health Report.—The mortality for the week ended June 16 is, with one exception, the lowest on record for June. During the week 436 deaths were reported, or 87 less than for the previous week. This is equivalent to an annual death rate of 11.09 per 1,000. Consumption heads the death list for the first time in several months with 60 deaths; pneumonia caused 50 deaths; violence (including suicide), 38; acute intestinal diseases, 33; nephritis, 28, and nervous diseases, 22. Two deaths were reported from insolation.

Personal.—Drs. Ludvig Hektoen, W. A. Evans and Maximilian Herzog have been appointed to represent the trio of civil investigators of the Union Stock Yards. The object of this committee is to investigate sanitary conditions at the stock yards.——Drs. Harold N. Moyer and Frank Allport were given the degree of LL.D. at the annual commencement of Notre Dame (Ind.) University, June 14.——Dr. Daniel A. K. Steele, president of the College of Physicians and Surgeons, was given the degree of LL.D. at the commencement exercises of the University of Illinois, Champaign, June 13.

INDIANA.

Laboratory Closed.—The Laboratory of Pathology and Bacteriology of Indiana University closed for the summer vacation, June 10. Since its opening in the spring, the laboratory has received for examination more than 20 pathologic specimens a week from the physicians of the state. It is hoped that in the summer of 1907 and thereafter arrangements will be made so that the closing of the laboratory in summer will be unnecessary.

Academy of Medicine Meeting.—At the semi-annual meeting of the Fort Wayne Academy of Medicine, May 31, Dr. George W. McCaskey read a paper on the "Relation of Diseases of the Gastrointestinal System to Conditions of Hypertension," which he read before the International Medical Congress at Lisbon. The following officers were elected and installed: President, Dr. William Ranke; vice-president, Dr. Adam L. Schneider; secretary, Dr. Alfred Kane, and treasurer, Dr. Allen Hamilton.

Win from State Board.—Dr. Mary A. Whery, Fort Wayne, whose license to practice medicine was revoked for alleged participation in an illegal operation, and who appealed to the circuit court, had a decision rendered in her favor, June 2.——The State Board of Medical Registration and Examination has filed in the circuit court a motion to modify the judgment in the proceedings instituted by it against Dr. Nelson B. Ross, Muncie, whose license was revoked a few weeks ago. The judgment shows a finding against the board, which desires the record to show a dismissal of the case.

Personal.—Dr. Albert E. Bulson, Jr., Fort Wayne, secretary of the Section on Ophthalmology of the American Medical Association, has sailed for Europe, and expects to visit Berlin, Zurich, Würzburg, Paris and London.——Dr. W. H. Mainwaring, professor of pathology, Indiana University, will give a course of 24 lectures on pathologie physiology before the students of Rush Medical College, Chicago, during the summer quarter, and will assist in the regular class work in general pathology in the University of Chicago.——Dr. James H. Walker, Henryville, who was operated on for appendicitis in Louisville, June 9, is reported to be improving.——Dr. Samuel N. Hamilton, Connersville, has been elected medical director of the Grand Army of the Republic for Indiana.—Dr. Clifford H. Mayfield, Indianapolis, has been installed assistant surgeon of the Indiana State Soldiers' Home, Lafayette, vice Dr. Logan Stanley, resigned.——Dr. D. F. Davis, New Albany, has gone to Europe.——Dr. Clarence Province, Franklin, has been elected a member of the city school board.——Drs. Chester C. Funk and Francis A. Mitchell have been appointed members of the New Albany board of health, and Dr. Funk has been made secretary of the board.——Drs. James M. Dinnen and L. Park Drayer, Fort Wayne, Dr. N. Howard Thompson, Wabash, Dr. Laughlin O. Malsbury, Peru, and Dr. John P. Hetherington, Logansport, have been appointed surgeons for the Fort Wayne & Wabash Valley Traction Company.

KENTUCKY.

Personal. Dr. and Mrs. J. N. MacCormack, Bowling Green, sailed for Europe on the *Majestic*, June 13. They will spend three months abroad.——Dr. Hugh M. McCullough, Louisville, has been appointed sanitary health inspector, vice Dr. Llewellyn P. Spears.——Dr. Hubbard K. Adamson, Maysville, was taken suddenly ill while attending the meeting of the Kentucky State Railway Surgeons at Richmond, May 30.

MARYLAND.

Personal.—Dr. Harry S. Jarrett has resigned as resident physician of the Endowood Sanatorium for Consumptives in Towson, and will be succeeded by Dr. A. M. Forster of New Haven, Conn.——Dr. Thomas S. Cullen has resigned from the staff of the Cambridge Hospital and has been succeeded by Dr. Guy L. Hunner.——Dr. Charles A. Wells, ex-mayor of Hyattsville, was presented by his friends with a silver punch bowl, May 30.——Dr. William S. McPherson, Catoctin Furnace, has been appointed justice of the peace for Frederick County.

Baltimore.

Commencement.—At the annual commencement exercises of Johns Hopkins University a class of 84 was graduated. Seven members of the class were women.

Monument to Bosley.—A granite monument is being erected in the Prospect Hill cemetery at a cost of $1,500 to the memory of the late Dr. Grafton M. Bosley.

Meat Inspection a Farce.—Dr. John S. Fulton of the State Board of Health charges that the meat inspection in Baltimore is a farce. He states that he knows of sick and disabled animals having been killed and sold for food.

Alumni Meeting.—The twelfth annual banquet of the Maryland University Alumni Association, Washington Branch, was held June 8. The following officers were elected: Dr. Otho M. Muncaster, president; Drs. William L. Robins and William N. Souter, vice-presidents; Dr. W. M. Simpkins, secretary and treasurer, and Dr. Wilson P. Malone, corresponding secretary.

Personal.—Dr. Charles H. Bunting of Johns Hopkins has been elected professor of pathology at the University of Virginia, and Dr. Reed Hunt, formerly of Johns Hopkins, but now of the United States Public Health and Marine-Hospital Service, has been made professor of physiology in the same institution.——Dr. Benjamin T. Winchester has returned from Europe.——Dr. G. Milton Linthicum was given the degree of M.A. by St. John's College, Annapolis.——Dr. F. S. Carey has been appointed resident physician at Elkins, W. Va.

MASSACHUSETTS.

Banquet to Old Physician.—On May 31 the physicians of Lowell celebrated the fiftieth anniversary of the entrance of Dr. William Bass into the practice of medicine by a banquet in his honor, over which Dr. George H. Pillsbury presided as toastmaster. An antique wall clock was also presented to Dr. Bass, the presentation address being made by Dr. John C. Irish.

State Society Election.—At the one hundred and twenty-fifth annual meeting of the Massachusetts Medical Society the following officers were elected: President, Dr. George W. Gay, Boston; vice-president, Dr. Leonard Wheeler, Worcester; treasurer, Dr. Edward M. Buckingham, Boston; recording secretary, Dr. Francis W. Goss, Roxbury; librarian, Dr. Edwin H. Brigham, Boston, and chairman of the committee of arrangements, Dr. George S. C. Badger, Boston.

McLeod Expelled.—At the annual meeting of the Massachusetts Medical Society, on June 13, in accordance with the by-laws, the secretary, Dr. Francis W. Goss, Roxbury, moved that the sentence imposed by the board of trials in the charges against Percy D. McLeod, Boston, be imposed, and that Dr. McLeod be expelled from the Massachusetts Medical Society. The motion was unanimously carried, and Dr. McLeod was disbarred from membership on the ground of "conduct unbecoming a physician and member of the society."

MISSISSIPPI.

Mississippi to Have Medical College.—Work has begun on the building for the Mississippi Medical College, Meridian, to be opened next fall. The institution has been incorporated with a capital of $25,000, by Drs. N. L. Clarke, M. J. Lowry, J. E. Neal and others. The following are announced as the medical members of the board of trustees: Drs. W. W. Hamilton, J. R. Tackett and Thomas A. Barber, Meridian; G. H. McNeil, Newton, and Robert S. Curry, Columbus.

Mississippi Medical and Surgical Association.—This association, an organization of the colored physicians of the state, held its sixth annual meeting at Natchez, April 25 and 26. The following officers were elected: Dr. Albert W. Dumas, Natchez, president; Drs. Edward P. Brown, Greenville, and Dr. A. J. Lopez, vice-presidents; Dr. L. P. Burbridge, secretary, and Dr. Nichols, Okolona, treasurer. At the close of the meeting a banquet was given, over which Prof. G. W. Brumfield presided as toastmaster.

State Association Meeting.—The annual meeting of the Mississippi State Medical Association was held in Jackson, April 17, 18, 19 and 20, under the presidency of Dr. Edward H. Martin, Clarksdale. The association was welcomed to Jackson by Bishop Charles B. Galloway of the Methodist church, father of the health officer of Jackson, and Dr. T. P. Lockwood, Crystal Springs, responded. In his annual address the president reported the work done by the association during the past year, showing its growth and advancement. Tuberculosis was the subject of a symposium in which Dr. W. A. Evans of Chicago read a paper on the prevention of the disease, Dr. H. Wernicke Gentles, Chicago, a paper on the early diagnosis of the disease, and Dr. H. L. Sutherland, Rosedale, one on tuberculosis among the negroes. A feature of one session was the paper by Dr. Joseph H. White, United States Public Health and Marine-Hospital Service, on the permanent eradication of yellow fever and malaria, which was read by Dr. Peter W. Rowland, Oxford. The following officers were elected: President, Dr. Walter W. Crawford, Hattiesburg; vice-presidents, Drs. John W. Young, Grenada, John R. Tackett, Meridian, and Elbert A. Cheek, Arcola; secretary, Dr. Lee T. Fox, Benela (re-elected); treasurer, Dr. John F. Hunter, Jackson (re-elected); delegate to the American Medical Association, Dr. John Darrington, Yazoo City, and alternate, Dr. Hugh H. Haralson, Vicksburg. The association will meet in Gulfport in April, 1907.

NEW JERSEY.

Diphtheria Closes School.—Owing to the prevalence of diphtheria among the pupils of Cherry Street school, Elizabeth, the school has been closed by order of the board of health.

Physician Wins Suit.—In a suit for $20,000 damages brought by George Lees, North Plainfield, against Dr. Albert Wickman, Newark, for alleged improper treatment in applying a plaster cast for spinal curvature, the jury, on May 25, returned a verdict of no cause of action.

New Staff for Hospital.—The following have been appointed members of the staff of St. Joseph's Hospital, Paterson: Drs. Edward F. Denner, William Kerr and Charles J. Kane, surgical department; Drs. Charles M. Campbell, James O'Donnell and Charles H. Scribner, medical department, and Dr. James W. Atkinson, ophthalmologic department.

Personal.—Dr. Samuel D. Mayhew, Bridgeton, was operated on for appendicitis, May 8.——Dr. W. Blair Stewart has been elected first vice-president of the Atlantic City board of trade.——Dr. Benjamin Gutmann has been appointed health officer of New Brunswick, vice Dr. Staats V. D. Clark.——Dr. Frederic J. Hughes has been appointed school physician of North Plainfield vice Dr. J. Hervey Buchanan.

Free Antitoxin Bill Vetoed.—The governor on June 8 vetoed the bill providing for the free distribution of antitoxin by the state to individuals unable to pay for the remedy. His reasons

are that it is the function of the municipality and not of the state to supply necessities to the poor, and, further, that physicians should not be compelled to risk the loss of practice by designating what patients are or are not indigent.

Aid for Physicians' Families.—The twenty-fourth annual report of the Society for the Relief of Widows and Orphans of Medical Men of New Jersey shows that during 1905 four deaths occurred, and claims amounting to $724.25 were paid to the widows. The permanent fund has been increased by nearly $1,000 and now amounts to $6,573.12. The receipts for the year were $1,659.72, and the disbursements $1,264.50.

Hospital Seeks Relief.—The trustees of the Cooper Hospital, Camden, have appeared before the city council business committee in an effort to have the property owned by the institution exempted from taxation. It was shown that the income of the hospital was about $15,000 and that the taxes amount to about $5,000 a year. During 1905, 1,026 emergency cases were treated, 18,500 persons were cared for in the dispensary, and practically all the southern part of New Jersey is dependent on the institution.

NEW YORK.

Resolutions Regarding Dr. Weigel's Death.—At a special meeting of the Rochester Academy of Medicine, June 1, resolutions were unanimously adopted setting forth the loss sustained by the Academy in the untimely death of Dr. Louis A. Weigel, its president and one of its charter members.

Centennial of County Society.—The Medical Society of the County of Ulster will celebrate its one hundredth anniversary June 26 at the court house, Kingston, N. Y. Dr. Albert Vander Veer, Albany, will speak on "The Advancement of Medicine and Surgery During the Past Century"; Hon. John J. Linson, Kingston, on "Expert Medical Testimony." Hon. G. D. B. Hasbrouck, Kingston, will discuss "The Physician in Politics", and Drs. E. H. Loughran and A. H. Mambert, Kingston, will give the history of the society.

NORTH CAROLINA.

Communicable Diseases.—During April measles was reported in 41 counties, whooping cough in 34, smallpox in 29, typhoid fever in 24, diphtheria in 13, influenza in 8, scarlet fever in 6, cerebrospinal meningitis in 4, mumps in 3, and chickenpox in one county.

Released on Bond.—Dr. Joseph B. Matthews, recently convicted for killing his wife with strychnin at Greensboro, and sentenced to imprisonment for 20 years, has been released under bond of $5,000, and has been taken to a sanitarium near Baltimore, to be treated for the morphin habit.

PENNSYLVANIA.

Cornerstone Laid.—The cornerstone of the Passavant Memorial Home for the Care of Epileptics at Rochester was laid June 7.

New Hospital.—The new Columbia Hospital, Wilkinsburg, erected by the United Presbyterian Women's Association at a cost of more than $200,000, was formally opened June 1.

New Health Board.—The health board of Freeport has organized with Dr. Robert L. McCurdy as president, Dr. Charles A. Rogers, vice-president, and Dr. L. Walker Schmatterly, secretary and treasurer.

Illness and Accidents.—Dr. James P. Gilligan, Wilkesbarre, underwent an operation for appendicitis at Mercy Hospital, May 30.——Dr. James M. Gelwix, Upper Strasburg, is critically ill at his home.

Military Appointments.—Dr. P. Francis Gunter, Scranton, has been appointed assistant surgeon of the Thirteenth Infantry, N. G. Pa.——Dr. Wiliam E. Keller, Scranton, has been reappointed surgeon of the Thirteenth Infantry, N. G. Pa.——Dr. S. E. Ralston has been appointed surgeon of the Eighteenth Infantry, N. G. Pa., with the rank of major, vice Major C. C. Wiley, Pittsburg, appointed brigade surgeon and assigned to the staff of General John A. Wiley.

Personal.—Dr. G. R. S. Carson has been appointed surgeon in the eye, ear, nose and throat department of the Pottsville Hospital, vice Dr. George H. Halberstadt.—— Dr. Samuel R. Crothers, mayor of Chester, has been appointed local surgeon for the Philadelphia, Wilmington & Baltimore Railroad, succeeding the late Dr. F. Farwell Long.——Dr. Joseph D. Findley, Altoona, has been appointed representative of the State Department of Health for Blair County.—— Dr. and Mrs. S. Harper Smith, McKeesport, celebrated the twenty-fifth anniversary of their wedding, June 3.

Philadelphia.

Hospital Wing Dedicated.—The new five-story addition to St. Agnes' Hospital was dedicated May 29 by Bishop Prendergast, with impressive ceremony. The new wing contains accommodations for 180 private patients and cost $350.000.

Medical Inspectors Injured.—Drs. Elmer G. Whinna and Charles A. Groff, assistant city medical inspectors, are confined to their homes by injuries received while attempting to alight from street cars.

University Commencement.—The one hundred and fiftieth annual commencement exercises of the University of Pennsylvania were held in the Academy of Music, June 13. More than 500 students received diplomas and the annual address to the graduating class was delivered by Prof. John B. McMasters. The medical degree was conferred on a class of 102.

Personal.—Dr. William W. Keen has been elected a trustee of Vassar College to fill the vacancy caused by the death of Dr. Edward Lathrop.——Dr. Louis Starr sailed for Europe on the *Celtic*, June 15.——Dr. John M. Swan sailed for Europe, June 16.——Dr. Susan Rogers Corson, Lansdowne, sailed for Europe on the *Friesland*, June 9.——Dr. Boardman Reed has moved to Alhambra, a suburb of Los Angeles, Cal.

Jefferson Alumni Meeting.—The Alumni Association of Jefferson Medical College held its annual meeting June 1, at which the following officers were elected: President, Dr. W. M. Late Coplin; recording secretary, Dr. Charles S. Barnes; corresponding secretary, Dr. Aller G. Ellis; Dr. Randle C. Rosenberger, treasurer, and vice-presidents representing every state of the union, Hawaii, the Philippine Islands, the Army and the Navy.

Health Report.—The total number of deaths reported for the week aggregated 414, a decrease of 82 from the number reported last week, and a decrease of 7 from the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 16; measles, 6; pertussis, 9; diphtheria, 4; consumption, 55; cancer, 25; apoplexy, 23; heart disease, 39; acute respiratory disease, 26; enteritis, 34; Bright's disease, 31; suicide, 4; accidents, 15, and marasmus, 5. There were 234 cases of contagious disease reported, with 21 deaths, as compared with 282 cases and 32 deaths reported in the previous week.

Woman's College Notes.—Dr. Clara Marshall has resigned the chair of therapeutics in the Woman's Medical College of Pennsylvania, to take effect June 1, 1906. Although the dean has always been a member of the faculty, the trustees, on recommendation of the faculty, have appointed Dr. Marshall as dean. The title of the chair of materia medica and therapeutics has been changed to that of materia medica, therapeutics and clinical medicine, and Dr. Arthur A. Stevens has been appointed professor.——Of 93 men and women who took the competitive examination for admission to the Philadelphia Hospital and who were placed on the eligible list, the highest average obtained was 82.2, and a graduate of the Woman's College obtained the fourth place, with the mark of 81.6.—— Dr. Mary J. Martin secured third place in the examination by the State Board of Examiners of North Carolina in a class of 132. The highest average obtained was 94 2/7, and Dr. Martin's average was 93 6/7.

VIRGINIA.

Personal.—Dr. R. C. Brunk, first assistant physician of the Central State Hospital, Petersburg, has resigned, and has been succeeded by Dr. Robert S. Talbot.

Commencement.—The eighty-second annual commencement exercises of the University of Virginia, Medical Department, Charlottesville, were held June 10, when a class of 21 was graduated.

Personal.—Dr. Edward W. Finn, Dedham, has been appointed town physician for 1906 and 1907 by the overseer of the poor.——Dr. Arthur B. Lamb of Harvard University has been appointed director of the Havemeyer Laboratory of Chemistry, New York University, vice Dr. Maurice Loeb, resigned.

GENERAL.

American Association of Pathologists and Bacteriologists.—The sixth annual meeting of this association was held at the Johns Hopkins University, May 19. The following officers were elected for the ensuing year: President, Dr. Welch; vice-president, Dr. A. S. Warthin; treasurer, Dr. H. U. Williams; secretary, Dr. H. C. Ernst.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTIONS.

...ders, H. S., Philadelphia	$ 4.00
...rclay, R. D., Cerro Gordo, Ill.	1.00
...eesman, W. S., Auburn, N. Y.	10.00
...hnson, Russell H., Philadelphia	5.00
...ndsay, Kate, Boulder, Colo.	2.00
...usser, John H., Philadelphia	25.00
...arrach, James, Philadelphia	10.00
...hysicians of Morristown, Pa.	110.00
...erkins, William M., Louisiana	5.00
...oberts, E. G., Vermont	2.00
...harpe, A. H.	5.00
...eehold, H. B.	5.00

SOCIETY CONTRIBUTIONS.

Chickasaw County Medical Society (Iowa)	$ 14.00
Caton County Medical Society (Michigan)	10.00
Hudson County Medical Society (New Jersey)	75.00
Maricopa County Medical Association (Arizona)	28.15
Piedmont Medical Association (Virginia)	25.00
Rock Island County Medical Society (Illinois)	$ 25.00
Somerset County Medical Society (Pennsylvania)	15.00
Southern District Medical Society (North Dakota)	20.00
Tawant County Medical Society (Texas)	28.00
Teaching Society for Vacation Courses (Berlin)	25.00
Winnebago County Medical Society (Wisconsin)	50.00
York County Medical Society (Pennsylvania)	140.00

Pulaski County Medical Society (Arkansas), $42.00:

Cantrell, G. M. D.	$2.50	Stark, L. R.	$5.00
Christian, R. B.	2.00	Stinson, H. C.	2.50
Dibrell, J. L.	1.00	Sweetland, A. E.	2.00
Gibson, L. P.	5.00	Thorne, E. C.	1.00
Gray, Oscar	1.00	Vaughan, Lincoln	2.00
Lindsay, R. W.	5.00	Vinsonhaler, F.	5.00
McLain, M. D.	1.00	Watkins, A.	2.00
Meek, E.	1.00	Watkins, J. G.	1.00
Scott, A. H.	1.00	Witt, C. E.	1.00
Snodgrass, W. A.	1.00		

Shreveport Medical Society (Louisiana), $94.50:

Abramson Louis	$2.50	Lawton, W. B.	$5.00
Alexander, S. Y.	2.50	Ledbetter, W. M.	2.50
Barrow, S. C.	2.50	Lloyd, T. P.	5.00
Bozz, T. T.	2.50	Mohler, D. A.	2.50
Blanchard, J. A.	2.50	O'Leary, J. F.	2.50
Chandler, G. C.	2.50	Penick, R. M.	2.00
Calloway, J. M.	5.00	Pirkle, L. H.	5.00
Dowling, Oscar	1.00	Purnell, M. R.	2.50
Egan, J. C. and W. L.	5.00	Reisor, A. J.	5.00
Frater, F. J.	2.50	Schumpert, T. E.	2.50
Gray, R. A.	2.50	Selby, J.	2.50
Gray, R. H.	2.50	Smith, M. F.	2.50
Handsh, E. B.	2.50	Sutherlin, W. K.	5.00
Hicks, S. H.	5.00	Turmont, F. S.	2.50
Hunt, Randall	2.00	Willis, J. C.	
Lawrason, G. B.			

Ste. Genevieve County Medical Association (Missouri), $6.00:

Andre, M.	$1.00	Meyer, A. G.	1.00
Hertleb, C. J.	.50	Rutledge, G. M.	1.00
Hinch, F. E.	1.00	Wilkins, J. A.	.50
Lanning, R. W.	$1.00		

Chicago Medical Society (additional)			$118.00
Albro, Merlin Z.	$ 2.00	Kirby, Wm.	$ 5.00
Alderson, J. J.	10.00	Landau, David R.	2.00
Barnes, Charles	2.00	Mitsch, Thomas	2.00
Bellstein, F. W.	2.00	McLaughlin, G. L.	2.00
Bell, George	2.00	McPherson, P.	10.00
Bessette, F. S.	2.00	Mix, Louis	2.00
Retz, Hugo	2.00	Natz, E. S.	1.00
Brintell,	2.00	Oulman, A.	2.00
Conant, F. B.	10.00	Parsons, William	2.00
Cotton, A. C.	2.00	Piper, F.	2.00
Felmlee, S. T.	5.00	Pischezak, John	2.00
Fridnss, S. L.	2.00	Porterfield, W. L.	2.00
Friend, C. F.	2.00	Sachtliben, F. A.	2.00
Gary, I. C.	2.00	Schoolman, M.	2.00
Haley, R.	5.00	Stoerhaas, L. H.	2.00
Hepburn, J. C.	2.00	Streich,	2.00
Hultgen,	2.00	Tischart, P. J.	2.00
Isaacs, Lewis J.	2.00	Tivnen, Richard J.	1.00
Jamieson, J. K.	5.00	Vonala, W. J.	2.00
Johnson, L. O.	2.00	Zaleski, J. P.	2.00
Kahn, H.		Zurawski, K. A.	

	$ 899.65
Total	$10,926.40
Previously acknowledged	
Grand total	$11,826.05

[In a previous list of the Pennsylvania societies the contribution of Dr. Alfred Gordon, Philadelphia, $2.00, was not mentioned.]

CANADA.

Hospital for Infectious Diseases.—Plans have been issued for a $6,000 hospital for infectious diseases at Peterboro, Ont.

British Columbia Medical Association.—The annual meeting of the British Columbia Medical Association will be held in Vancouver, August 1 and 2.

Nova Scotia Reciprocity with Great Britain.—The province of Nova Scotia is the first to seek medical reciprocity with the United Kingdom under amendment to the medical act of 1905.

Birth Rate in Montreal.—There is no race suicide in Montreal. During the week ended June 2, 196 births were registered in that city, the average being about 130. One hundred and two were males and 94 females.

Hospital Sunday.—Sunday, May 20, was hospital Sunday in all churches in Victoria, B. C. The money collected will be devoted to the erection of a maternity ward in connection with the Royal Jubilee Hospital of that city.

Queen's University, Kingston, Ontario.—The Ontario government at its recent session made a grant of $50,000 to the medical department of Queen's University, Kingston, Ont. The money will be used for a new laboratory building to house the departments of physiology, pathology, bacteriology and public health.

University News.—Convocation was held at Toronto University on the afternoon of June 8.——There were 99 candidates in final medicine this year at McGill University, of whom all but 7 were successful in their examinations. Mr. R. S. Mc-Arthur of Summerside, P. E. I., was the winner of the Holmes gold medal for the highest aggregate in all subjects.

Personal.—Dr. D. J. Gibb Wishart, Toronto, has returned home from attending the meeting of the American Medical Association at Boston.——Dr. Bruce L. Riordan, Grand Trunk surgeon at Toronto, has returned from a trip to Ireland.——Dr. C. J. Fagan, secretary of the Board of Health of British Columbia, has taken action against a Victoria newspaper to restrain it from using his name in connection with the advertisement of a certain "patent medicine" which he had analyzed and which he stated contained no poison.

The Ontario Medical College for Women Closed.—The Ontario Medical College for Women has gone out of existence. In future women desiring to study medicine in Canada will be provided with instruction by the medical department of the University of Toronto. The question of the co-education of medical students in the provincial university will be taken up by the university faculty shortly and full arrangements perfected for the reception of women. It is likely that special dissecting rooms will be provided. The Ontario Medical College for Women had been in existence for 22 years. During those years it has turned out 121 graduates. The first term commenced in the fall of 1883 with one student in attendance. The free dispensary for women, established in 1899 in connection with the college, will be continued. Dr. R. Barrington Nevitt has been dean for a number of years.

FOREIGN.

Physicians in French Chamber of Deputies.—Since the recent elections the French Chamber of Deputies numbers 46 physicians among its members and 9 pharmacists.

Cerebrospinal Meningitis in Germany.—It is announced by the *Allg. med. Cent.-Ztg.* that there have been 864 cases of epidemic cerebrospinal meningitis in Prussia since January 1, with 392 deaths. The majority have occurred in the Oppeln district, 585 cases, with 283 deaths.

Testimonial to Brouardel on His Retirement.—As mentioned recently, the professor of legal medicine at Paris, Paul Brouardel, is to retire to private life this spring. A subscription has been opened to present him with a souvenir tablet on the occasion of his retirement. Subscriptions of any amount will be received. They should be sent soon to Dr. Logez-Duc, secretary of the fund, rue de Mauberge 81, Paris X.

Cerebrospinal Meningitis in Glasgow.—Several cases of cerebrospinal meningitis have occurred in Glasgow, Scotland, during the past few weeks, and the health committee is considering the advisability of including it in the list of notifiable diseases. With this object in view, the committee has circularized the medical profession of the city to obtain details of the number of cases which have occurred during the last twelve months.

Treatment of Whooping Cough with Chloroform.—It is announced from Paris that Dr. H. de Rothschild has witnessed the abatement of the spasmodic cough in a child with whooping cough on whom he was operating for dislocation of the hip joint. Before the operation the child had averaged 39 attacks of coughing in the 24 hours, but has not had a single attack since. He has since treated 9 other children with unusual severe whooping cough by having them inhale a mixture of chloroform and oxygen for five minutes. In 2 the attacks have not recurred; in the others they dropped from 29 to 12, not returning after the fourth day. In the others the cure was not complete for several days.

Hydrophobia in Germany.—The official figures for Prussia in 1904 have recently been published. It seems that 365 persons

were bitten during the year by rabid or supposed rabid animals, including 5 cats, 6 cattle, 1 horse, 2 pigs and 211 dogs. All but 35 of the individuals applied for treatment at the Berlin Institute for Infectious Diseases. Eight of the total number developed hydrophobia and died; 2 of these had not received any treatment, 1 had been treated by local disinfection alone, and 5 had taken the regular Pasteur course of treatment. In one of the latter group death occurred 218 days after the injury.

German Society for Prevention of Venereal Disease.—The Berlin branch of the German Preventive Society held a public meeting recently in the city hall building. Oppenheim delivered an address on "Sexual Diseases and Nervous Affections", and Rosenthal on the "Action of Alcohol in Relation to Sexual Diseases." Heller concluded the proceedings with an earnest appeal for the foundation of a home for syphilitic infants, similar to the one founded by Welander at Stockholm, which has done such good service in segregating the victims of inherited syphilis and mitigating or entirely curing their disease while safeguarding the public.

Proposed Free International Sanitarium at Carlsbad for Physicians.—The local medical society has presented a petition to the Carlsbad authorities asking that an international sanitarium be founded at Carlsbad for needy physicians. The petition states that the spa owes its renown to the appreciation by medical men generally of its courses of mineral waters and their systematic application. If a sanitarium with 20 rooms could be erected, 140 physicians could be given a four weeks' course of the waters during the season, April 1 to October 1. The petition adds that such an establishment would combine the humane with the practical and useful, and would win still more friends for the spa. Last year nearly 60,000 persons took the regular course of treatment, with 150,000 transient guests.

To Reduce Possibility of Infection in Abdominal Operations.—Theilhaber writes to the *Muench. med. Wochft.* to relate the great improvement in his results since he has adopted the plan of a second disinfection before attempting to ligate a pedicle in his operations. He presents evidence to prove that operations requiring ligature of a pedicle have a higher percentage of infection than other operations, even much more protracted ones, in which there is no pedicle to be ligated. When he reaches the stage of ligating the pedicle he closes the abdominal wound with forceps and disinfects his hands anew, then opens a hitherto untouched vessel containing a fresh set of instruments for the ligature. He either dispenses with assistance at this stage or requires his assistants to disinfect their hands anew.

International Congress for "Occupation Affections."—The completion of the Simplon tunnel is being celebrated by Italy with various international congresses. An international exhibition of hygiene is now in progress at Milan, and the first international congress for occupation affections opened last week at the same place. Celli led the discussion on the professional affections of workers in tobacco, and Bruns and Perroncito discussed miners' anemia. The medical senator, De Cristoforis, presided over the congress. In an editorial in the *Gazzetta degli Ospedali*, Maragliano hails it as "another step toward the realization of the political medicine which is coming to be the spirit of modern medicine." He declares that medicine can not hold aloof from politics much longer. He uses the term politics not in the sense of aspiring for power, but as "the exalted and noble effort to devote one's energies to promoting the welfare of the nation and safeguarding the vital interests of the citizens. Political medicine should be the principal factor in protecting wage-earners against insidious or manifest infirmities dependent on the exercise of their trade." He rejoices that Italy has taken the lead in summoning this international conference on the subject.

Precipitation Test of Strength of Roentgen Rays.—G. Schwartz of Vienna demonstrated at a recent meeting of the local medical society a method of measuring the strength of the Roentgen rays which is based on the precipitation of calomel, as a chemical reaction to the rays, in a mixture of ammonium oxalate and corrosive sublimate. This mixture is a clear fluid which, sheltered from the light, keeps indefinitely. Exposure to daylight or to the Roentgen rays causes precipitation of calomel. The amount precipitated is determined by centrifuging in a graduated capillary tube. Three mm. of the precipitate in the capillary tube corresponds to about the strength of a Holzknecht unit. The *Wiener klin. Wochft.* for May 31 contains his detailed description and comparison of this technic with the usual methods of testing the strength of the rays, especially with the Freund-Hardy Wilcox iodoform chloroform colorimetric test. The latter has the disadvantage of being a subjective test, depending on the observer's estimation of color. The change in the tint, after exposure to the rays, continues progressively after the rays have been withdrawn. Schwartz states that his technic allows the measurement of one-ninth or even one-twenty-seventh of the minimal effectual therapeutic dose of the rays.

LONDON LETTER.

Pasteurized Milk and Infant Feeding.

The fact that several of the large London dairy companies are supplying pasteurized milk without any indication that the milk has been so treated has been discovered in the following manner: At a children's hospital the medical staff decided to use pure, fresh milk unaltered by heat or preservatives or otherwise. Special precautions were taken to insure the purity of the milk, which was to be supplied in sealed and sterilized bottles and kept on ice. A large dairy company undertook to do this and was supposed to have done so for 18 months. Then it was discovered that for 12 months the milk had been pasteurized. The company, when taxed with breach of contract, expressed regret, but said they had acted on high medical authority and that pasteurized milk was safer for infants than milk not so treated. At another children's hospital there were under care three cases of scurvy for which fresh cow's milk, raw meat juice, scraped potato and lemon juice were given. In none of the cases did the usual speedy resolution of the subperiosteal hematoma occur. That three consecutive cases of scurvy should take this extraordinary course led to an inquiry. It was discovered that the dairy company to the hospital had been supplying pasteurized instead of fresh milk without informing the hospital authorities. On the substitution of fresh for pasteurized milk the children began to improve.

Jubilee of the Society of Medical Officers of Health.

The jubilee meeting of the Society of Medical Officers of Health was held recently. The president, Sir Shirley Murphy, delivered his presidential address on "The Medical Officer of Health, 1856-1906." He contrasted some of the problems that confronted the medical officer of health at the time of the foundation of the society in 1856 with those which faced him in the present day. In that period the death rate in England and Wales had fallen 18 per cent.—the male death rate 16 and the female 20 per cent. The death rate from preventable diseases had fallen 42 per cent. Medical officers of health must always be prepared to widen the horizon of their work. Already they possess a knowledge of disease prevention which goes far beyond that available for the early members of the society and that knowledge must rapidly grow.

Correspondence

Newspaper Tactics and the "Patent-Medicine" Question.

ST. LOUIS, June 11, 1906.

To the Editor:—In the St. Louis *Republic* for June 6 appeared the following paragraph: "At the meeting of the American Medical Editors' Association, what was termed 'the unwise agitation against medical advertising and proprietary medicines,' was strongly denounced. Dr. Kenneth W. Millican, of the *Medical Review*, St. Louis, said: 'What should be insisted on in the advertising world is that the advertising should be honest. I can not join in this outcry which has been raised against patent-medicine advertising. The spirit of commercialism is rampant, and it must be regarded by the journals. When those ends are sought honestly they are proper enough. The aim of professional men is rendering service, and any reasonable means to that end is proper. There is no sound reason why physicians should oppose advertising.'"

Now, as one sentence in this passage attributes to me a statement the exact opposite of the position I have always taken, I addressed to the St. Louis *Republic*, on June 6, the following letter:

JUNE 6, 1906.

To the Editor, St. Louis "Republic," City:

Sir: In your issue for June 6, in a dispatch dated Boston, Mass., June 5, you publish a statement concerning my paper read at the American Medical Editors' Association, at Boston, which in one particular entirely reverses the position that I took. Your correspondent makes me say: "I can not join in this outcry which has been raised against patent-medicine advertising." This statement is

such a garbled report of what I actually did say that I must request you to give me an opportunity of correcting it. It is obvious that the passage which your correspondent has, I am afraid deliberately, misrepresented is the following: Speaking of the question of the advertising of proprietary remedies—so-called "ethical" remedies because they profess to be advertised to the profession alone—I stated, "but we (i. e., medical editors) can not consistently join in the outcry that has been properly raised—and it is immaterial whether that outcry is due to a single-minded devotion to the public good or is simply the crafty use of a worthy object for purely selfish purposes—against patent medicines and nostrums that prey on the public to its detriment, so long as we do not hold fast to the first principles in regard to those preparations that appeal to us for our sanction." In other words, so far from saying that I can not join in the outcry against patent nostrums, I take the position that we all ought to join in that outcry, but that to do that effectively medical editors should agree on a principle whereby the rectitude of a proprietary medicine may be judged before its advertisement is accepted for a reputable medical journal; and I proceed to instance the principle which has been in force since the beginning of this year by the *St. Louis Medical Review*, in the following words: "We, therefore, shall not accept in future, and we have advised all our present advertisers that we shall not renew for 1906 the advertisement of any remedy that does not give its essential constituents so far that the physician using it may know, or can ascertain by reference to a Dispensatory or a standard text-book of therapeutics, its physiologic action and therapeutic character; and, if it contains drugs of pronounced potent physiologic effects or toxic character, the amount thereof that he is giving."

The whole gist of my argument, therefore, instead of being a statement that "I could not uphold the outcry against the nostrums," was an urging on medical editors to purge their own advertising columns so that all might take part in this outcry with greater consistency and cleaner hands. But I further urged moderation, common sense, a just regard for the legitimate interests of all parties, the public and the manufacturer as well as the physician, and a freedom from hysteria or blind slashing out at random.

Yours very truly, (Signed.) KENNETH W. MILLICAN.

On June 8 I received the following reply:

June 7, 1906.

Dear Doctor Millican:—Your letter of the 6th in relation to a dispatch from our correspondent at Boston has been received and will have due attention. I feel sure, however, that he had no motive or intent in placing a misconstruction on your paper.

Yours very truly,

(Signed) ——News Editor.

Dr. Kenneth W. Millican, City.

On receipt, in deference to the disclaimer as to motive, I authorized by telephone the omission of the words "I am afraid deliberately" in reference to the correspondent's misrepresentation. Considering the injurious nature of the misrepresentation, I had a right to expect a prompt and immediate publication for my repudiation of the statement ascribed to me. It is now five days since the statement was made, but I have seen no retraction so far. When it does appear, if it appears at all, it will be too late to correct the false impression created by the original paragraph. There may be many points in which the *Review* may take issue with the American Medical Association or its JOURNAL, but at least we fight fair and do not state one thing in our columns and try to curry favor by stating its opposite under circumstances in which that opposite might possibly be more popular.

KENNETH W. MILLICAN,
Editor *St. Louis Medical Review.*

The Advertising of the Battle Creek Sanitarium Company.

OFFICE OF
THE BATTLE CREEK SANITARIUM.

BATTLE CREEK, MICH., June 15, 1906.

To the Editor:—My attention was called a few days ago to an article which appeared in your columns from the pen of Dr. Pusey, criticising the Battle Creek Sanitarium because of certain advertisements which are published in newspapers over the name of the Battle Creek Sanitarium Co., Ltd. I desire to call your attention to the fact that the Battle Creek Sanitarium Co., Ltd., and the Battle Creek Sanitarium are two entirely independent institutions. The Battle Creek Sanitarium is incorporated under the charitable statutes of Michigan as the Michigan Sanitarium and Benevolent Association. The Battle Creek Sanitarium Co., Ltd., is a commercial manufacturing firm doing business in Battle Creek, which some years ago acquired by purchase the food business formerly conducted by the Battle Creek Sanitarium.

Enclosed you will find a copy of a letter written by me to the said Battle Creek Sanitarium Co., Ltd., and also a copy of their reply. I will be greatly obliged if you will publish these letters, together with this letter, in your columns, feeling that this explanation is due to the readers of THE JOURNAL who have read Dr. Pusey's criticism. J. H. KELLOGG.

BATTLE CREEK, MICH., June 12, 1906.

BATTLE CREEK SANITARIUM CO., Ltd.,
Battle Creek, Mich.

Gentlemen:—Several physicians have called my attention to an article which recently appeared in THE JOURNAL of the American Medical Association severely criticising the advertising matter which is being sent out by your company and implicating the Battle Creek Sanitarium in the matter.

It is my duty, as superintendent of the Battle Creek Sanitarium, to call your attention to the fact that when the trade rights to the food business formerly carried on by the Battle Creek Sanitarium were conveyed to you by a sale on Dec. 25, 1902, it was with the distinct understanding that the manufacture and sale of these foods should be conducted in a thoroughly ethical manner, and that the advertising matter should be of such a character that no intelligent or scrupulous physician would have any reason for complaint. It was distinctly understood that the copy prepared for advertising matter should be submitted to me, or to some other medical man who might be designated by the board of directors of the Battle Creek Sanitarium, to be criticised before being sent out, so that the reputation of the Battle Creek Sanitarium as an ethical institution should be thoroughly protected. The Battle Creek Sanitarium management would not have disposed of its trade-marks and other business interests connected with the manufacture of foods under any other conditions.

I was shocked and ashamed when my attention was called to the article from Dr. Pusey, and especially when I afterward learned that this advertisement, or one similar to it, had been published in periodicals of such character that no reputable institution could afford to be represented in their columns. I consider Dr. Pusey's censure entirely just in every particular, with the one exception that it does not apply to the Battle Creek Sanitarium, but rests wholly on the management of the Battle Creek Sanitarium Company, Ltd. It is manifest that you have neglected to comply with the special agreement which was entered into for the protection of the Battle Creek Sanitarium, and which was necessary because of the similiarity of your name to that of the sanitarium. If you had submitted the copy for the advertisement complained of for inspection, it certainly would have been condemned. Since my attention has been called to the matter, I have learned that other announcements, through circulars and otherwise, which you have been sending out, contain many objectionable phrases and statements, which are not in harmony with the spirit of the understanding above referred to.

I am now writing you at the request of the board of directors of the Battle Creek Sanitarium to ask that you will suppress all publications of the sort complained of, and that you will hereafter, in accordance with your agreement, submit all advertising copy for inspection, and that you will so modify the name of your company that the public will not be in danger of confusing your business with that of the Battle Creek Sanitarium. The action requested of you is necessary for the protection of the good name of the Battle Creek Sanitarium, which has always conducted its business in a strictly ethical way, and has given no countenance to, or had any sympathy with, unethical and unprofessional methods of appealing to the public.

We request that you will take prompt and thorough-going action in relation to this matter. Respectfully,

J. H. KELLOGG.

BATTLE CREEK, MICH., June 14, 1906.

J. H. KELLOGG, M.D., Battle Creek, Mich.

Dear Sir:—Your favor of June 8 received. We regret to be obliged to acknowledge our remissness in the matter to which you call our attention. Our only apology is the fact that business duties have crowded us to such an extent that we have trusted the preparation and placing of our advertising matter to our advertising agents more than we should have done, and so we were not aware that the general instructions which we had given and which we believed to be in harmony with the agreement entered into with the sanitarium, were not being strictly carried out. We frankly admit our oversight in this matter and will immediately comply with each of the requests made by you and will see that hereafter there is no reasonable ground for complaint.

Assuring you that we have no sympathy with the unprincipled methods of advertising commonly employed by nostrum vendors and certain manufacturers of proprietary food products, and that we desire to conform in the strictest manner with both the letter and the spirit of the agreement to which you refer, in the interests of our own business as well as yours, we remain,

Very truly yours,

BATTLE CREEK SANITARIUM FOOD CO.
M. W. WENTWORTH, President.

P. S. Kindly note that our firm name has been changed so that there can be no possible confusion of our business with yours in the public mind.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 16, 1906:

Kulp, John S., surgeon, promoted to rank of major, to date from May 26, 1906.

Sweazey, V. E., asst.-surgeon, left Army General Hospital, Washington Barracks, D. C., on leave of absence, to include July 1, 1906.

Hallock, H. M., surgeon, sick leave of absence extended two months.

Page, Henry, asst.-surgeon, assignment to duty at the U. S. Military Prison, Fort Leavenworth, Kans., revoked, and ordered to Fort Clark, Texas, for duty.

Fuller, Leigh A., asst.-surgeon, relieved from duty at Fort Clark, Texas, and ordered to the U. S. Military Prison, Fort Leavenworth, Kans., for duty.

Gray, Wm. W., deputy surgeon-general, left chief surgeon's office, Headquarters Department of the Gulf, Atlanta, Ga., on sick leave of absence.

Kirkpatrick, Thos. J., asst.-surgeon, left Fort Moultrie, S. C., en route to Fort McPherson, Ga., for temporary duty.

Robbins, C. P., asst.-surgeon, left Madison Barracks, N. Y., on ten days' leave of absence.

Boyer, Perry L., asst.-surgeon, left from temporary duty at Oakland, Cal., with 2d Squadron, 1st Cavalry, en route to rejoin station at Fort Sam Houston, Texas.

Ekwurzel, Geo. M., asst.-surgeon, relieved from temporary duty at Army General Hospital, Washington Barracks, D. C., and ordered to Fort Hamilton, N. Y., for temporary duty.

Appel, D. M., deputy surgeon-general, detailed member of Army retiring board, San Francisco, vice Lieut.-Col. Louis Brechemin, deputy surgeon-general, relieved. Detailed member of examining board, San Francisco, vice Lieut.-Col. Louis Brechemin, deputy surgeon-general, relieved.

Marrow, Chas. E., asst.-surgeon, left from temporary duty at Army General Hospital, Washington Barracks, D. C., en route to rejoin station, Fort Monroe, Va.

Hicks, John R., contract surgeon, granted sick leave of absence for one month.

Brown, Ira C., contract surgeon, ordered to accompany a battalion of infantry from Fort Niobrara, Neb., to Fort McIntosh, Texas, and report for duty at that post.

Hereford, John R., contract surgeon, left Fort Caswell, N. C., and arrived at Fort Moultrie, S. C., for duty.

Cass, William E., contract surgeon, returned from duty at San Francisco, to his proper station, Vancouver Barracks, Wash.

Gardner, Fletcher, contract surgeon, relieved from duty June 20, at Fort Mansfield, R. I., and will then proceed home for annulment of contract.

Carpenter, Alden, dental surgeon, left Fort William H. Seward, Alaska, for duty at Fort Egbert, Alaska.

Rietz, Hugo C., dental surgeon, order for Philippine service revoked; will proceed home, Manitowoc, Wis., for annulment of contract.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, during the two weeks ending June 16, 1906:

Moore, J. M., P. A. surgeon, detached from the Naval Medical School, Washington, D. C., June 15, and ordered to report for examination for promotion, and then to await orders.

Shook, F. M., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Navy Yard, Mare Island, Cal.

Geiger, A. J., asst.-surgeon, detached from the Navy Yard, Mare Island, Cal., and ordered to Washington, D. C., June 15, for examination for promotion, and then to wait orders.

Meyers, G. M., and Backus, J. W., asst.-surgeons, detached from the Naval Medical School, Washington, D. C., June 15, and ordered to report for examination for promotion, and then to wait orders.

Streets, T. H., medical director, detached from command of the Naval Hospital, Naval Home, Philadelphia, and directed to wait orders.

Pickrell, G., surgeon, ordered to the *Franklin*.

Kerr, D. B., surgeon, detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Recruiting Station, Chicago, Ill.

Von Wedekin, L. L., surgeon, detached from the Naval Recruiting Station, Chicago, Ill., and ordered to wait orders.

Asserson, F. A., P. A. surgeon, detached from the Naval Medical School, Washington, D. C., June 14, and ordered to the *Arkansas* temporarily, and thence home to wait orders.

Webb, U. R., P. A. surgeon, detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Hospital, Portsmouth, N. H.

Shaw, H., asst.-surgeon, detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Hospital, Philadelphia, Pa.

Michels, R. H., asst.-surgeon, detached from the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Recruiting Station, Kansas City, Mo.

Teece, F. W., acting asst.-surgeon, detached from the Naval Recruiting Station, Kansas City, Mo., and ordered home to wait orders pending expiration of term of appointment as acting asst.-surgeon, July 1, 1906.

Myers, G. M., asst.-surgeon, detached from Naval Medical School, June 15, and ordered to Navy Yard, Washington, D. C.

Campbell, F. E., asst.-surgeon, ordered to the *Constellation* and to additional duty at Naval Training Station, Newport, R. I.

McConnon, G. H., asst.-surgeon, detached from the *Constellation* and ordered to the *Missouri*.

Ryder, C. E., asst.-surgeon, detached from the *Missouri* and ordered home to wait orders.

Dennis, J. B., surgeon, detached from the Naval Proving Ground, Indian Head, Md., and ordered to command the Naval Hospital, Puget Sound, Washington, with additional duty at the navy yard at that place.

Munson, F. M., asst.-surgeon, detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Proving Ground, Indian Head, Md.

Drake, N. H., medical inspector, detached from the Naval Academy and ordered to the Naval Hospital, New York, N. Y., for treatment.

Carpenter, D. N., surgeon, detached from duty in command of the Naval Hospital, Puget Sound, Wash., and ordered to the Asiatic Station, sailing from Seattle, Wash., July 6.

Curtis, E. E., acting asst.-surgeon, detached from the *Franklin* and ordered to duty at Camp Harrington Rifle Range, Williamsburg, Va.

Steele, J. M., medical inspector, ordered to the Naval Academy.

Jenness, B. F., asst.-surgeon, detached from the Naval Medical School, June 15, and ordered to the *Constellation* and to additional duty at the Naval Training Station, Newport, R. I.

Langhorne, C. D., surgeon, detached from the Naval Medical School, and ordered to the Naval Academy for temporary duty, and thence home to wait orders.

Decker, C. J., surgeon, detached from the *Alabama* and ordered home to wait orders.

De Valin, C. M., surgeon, detached from the Naval Recruiting Station, Baltimore, Md., and ordered to the *Alabama*.

Marsteller, E. H., surgeon, detached from the Naval Recruiting Station, St. Louis, and to Naval Recruiting Station, Baltimore, Md.

Abeken, F. G., asst.-surgeon, to Naval Recruiting Station, St. Louis.

McGuigan, J. H., pharmacist, detached from the Naval Dispensary, New York, and to the Marine Barracks, New York.

McMahon, J., pharmacist, detached from the Marine Barracks, New York, and to the Naval Dispensary, New York.

Service for the seven days ending June 13, 1906:

Carmichael, D. A., surgeon, bureau letter of May 3, 1906, granting leave of absence for seventeen days, amended to read for fifteen days only.

Cobb, J. O., surgeon, granted leave of absence for ten days from June 25, 1906.

Smith, S. C., surgeon, granted leave of absence for one month from July 2, 1906.

Blue, Rupert, P. A. surgeon, assigned to special temporary duty in Washington, D. C., on board convened by executive order for the purpose of making sanitary inspection of certain public buildings and workshops, on completion of which to proceed to Norfolk, Va., and assume command of service.

Amesse, J. W., P. A. surgeon, granted leave of absence for six days from June 5, 1906, under Paragraph 191 of the Regulations.

Boggess, C. S., asst.-surgeon, granted leave of absence for seven days from June 9, 1906, under Paragraph 191 of the Regulations.

Stimson, A. M., asst.-surgeon, directed to report to medical officer in command, Stapleton, N. Y., for temporary duty.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for three days from June 12, 1906.

McKay, M., pharmacist, granted leave of absence for two days from June 1, 1906.

Carlton, C. G., pharmacist, granted leave of absence for twenty-nine days from June 10, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the fourteen days ending June 13, 1906:

Irwin, Fairfax, surgeon, granted leave of absence for one month and twenty-five days, from July 9, 1906.

Carrington, P. M., surgeon, granted leave of absence for three days from June 4, 1906, under Paragraph 189 of the Regulations.

Williams, L. L., surgeon, granted leave of absence for one month and fifteen days, beginning July 16, 1906.

McIntosh, W. P., surgeon, granted extension of leave of absence for three days, from June 4, 1906.

Wertenbaker, C. P., surgeon, granted leave of absence for nine days, from June 5, 1906.

Rosenau, M. J., P. A. surgeon, granted leave of absence for one day, June 1, 1906, under Paragraph 189 of the Regulations.

Nydegger, J. A., P. A. surgeon, granted leave of absence for three months, from Aug. 10, 1906, with permission to go beyond sea.

Wickes, H. W., P. A. surgeon, granted leave of absence for two days, from June 5, 1906.

Wickes, H. W., P. A. surgeon, granted extension of leave of absence for three days, from June 7, 1906.

Moore, Dunlop, P. A. surgeon, granted leave of absence for two months, from May 7, 1906.

Wilson, R. L., P. A. surgeon, granted leave of absence for seven days, from May 28, 1906, under Paragraph 191 of the Regulations.

Wilson, R. L., P. A. surgeon, granted extension of leave of absence for seven days, from June 4, 1906.

Stimson, A. M., asst.-surgeon, granted leave of absence for seven days from May 25, 1906, under Paragraph 191 of the Regulations.

Rucker, W. C., asst.-surgeon, granted leave of absence for three days from June 5, 1906.

Hunt, Reid, Chief Division of Pharmacology. Detailed to attend the meeting of the American Medical Association at Boston, Mass., June 4-8, 1906.

Kastle, J. H., Chief Division of Chemistry, granted leave of absence for eleven days, beginning June 12, 1906.

Addis, W. E., acting asst.-surgeon, granted leave of absence for twenty-six days, from June 4, 1906.

Gray, R. H., Acting asst.-surgeon, granted leave of absence for thirty days, from June 16, 1906, and excused from duty without pay for sixteen days from expiration of above leave.

Gregory, George A., acting asst.-surgeon, granted leave of absence for seven days from June 4, 1906.

Hallet, E. H., acting asst.-surgeon, granted leave of absence for two days from June 2, 1906.

James, William F., acting asst.-surgeon, granted leave of absence for thirty days, from Aug. 1, 1906, and excused for fifteen days without pay, from date of expiration of above-mentioned leave.

Nute, A. J., acting asst.-surgeon, granted three days' leave of absence under Paragraph 210 of the Regulations.

Safford, V. G., acting asst.-surgeon, granted leave of absence for three days under Paragraph 210 of the Regulations.

Simonson, G. T., acting asst.-surgeon, granted leave of absence for two days, from June 5, 1906.

Stevenson, J. W., acting asst.-surgeon, granted leave of absence for thirty days, from June 11, 1906, and excused without pay for a period of two months, or so much thereof as may be necessary, without pay, from expiration of leave of absence.

Goodman, F. S., pharmacist, granted leave of absence for sixteen days, from June 18, 1906.

Richardson, S. W., pharmacist, granted leave of absence for ten days, from June 3, 1906.

Van Ness, G. J., pharmacist, relieved from duty in the Bureau and assigned to temporary duty in the Purveying Depot, Washington, D. C.

Glennan, A. H., assistant surgeon general, granted leave of absence for eight days from June 9, 1906.

Carmichael, A. D., surgeon, bureau letter of May 3, 1903, granting leave of absence for seventeen days, amended to read for fifteen days only.

Cobb, J. O., surgeon, granted leave of absence for ten days from June 25, 1906.

Smith, S. C., surgeon, granted leave of absence for one month from July 2, 1906.

Blue, Rupert, P. A. surgeon, assigned to special temporary duty in Washington, D. C., on board convened by executive order for the purpose of making sanitary inspection of certain public buildings and workshops, on completion of which to proceed to Norfolk, Va., and assume command of service.

Amesse, J. W., P. A. surgeon, granted leave of absence for six days from June 5, 1906, under Paragraph 191 of the Regulations.

Boggess, C. S., asst.-surgeon, granted leave of absence for seven days from June 9, 1906, under Paragraph 191 of the Regulations.

Stimson, A. M., asst.-surgeon, directed to report to medical officer in command, Stapleton, N. Y., for temporary duty.

Hamilton, H. J., acting asst.-surgeon, granted leave of absence for three days from June 12, 1906.

McKay, M., pharmacist, granted leave of absence for two days from June 1, 1906.

Carlton, C. G., pharmacist, granted leave of absence for twenty-nine days from June 10, 1906.

APPOINTMENTS.

Louis Schwartz, George C. Ballard and Elsworth Wilson appointed acting asst.-surgeons for probational periods of six months from date of oath.

BOARD CONVENED.

A board of medical officers was convened at Chicago, Ill., on June 12, 1906, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon G. B. Young, chairman; Assistant Surgeon, R. T. Olson, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the two weeks ended June 15, 1906:

SMALLPOX—UNITED STATES.

California: Stockton, May 31, 3 cases; Roseville, May 24, 1 case.
District of Columbia: Washington, May 19-June 9, 20 cases, 1 death.
Florida: General, May 26-June 9, 22 cases; Jacksonville, 7 cases.
Georgia: Augusta, May 21-28, 2 cases; Sapelo Island, June 2-4, 1 case (imported).
Illinois: Cambridge, June 2-9, 10 cases; Chicago, May 26-June 9, 3 cases; Galesburg, 1 case.
Indiana: Indianapolis, May 20-June 3, 2 cases.
Kansas: Topeka, May 26-June 2, 1 case.
Louisiana: New Orleans, May 25-June 9, 36 cases, 1 death.
Missouri: Carthage, April 3-June 4, 10 cases; St. Louis, May 26-June 2, 1 case; Joplin, June 5, 5 cases (imported).
Nebraska: Omaha, May 26-June 2, 1 case.
New Jersey: Jersey City, May 27-June 3, 2 cases.
New York: Monroe, May 14, 1 case; New York, May 26-June 9, 11 cases, 3 deaths; Buffalo, May 1-30, 1 case.
North Carolina: Greensboro, May 26-June 2, 1 case.
Ohio: Cincinnati, May 25-June 8, 13 cases; Toledo, May 19-26, 1 case.
Oklahoma: Oklahoma City, May 26-June 9, 14 cases, 1 death.
Pennsylvania: Philadelphia, May 26-June 2, 1 case; Pittsburg, May 19-26, 4 cases; Lancaster, June 2-9, 1 case.
Tennessee: Memphis, May 19-June 6, 9 cases; Nashville, May 26-June 2, 1 case.
Texas: Houston, May 19-June 2, 2 cases.
Utah: Ogden, May 31, 2 cases.
Wisconsin: Appleton, May 26-June 9, 5 cases; La Crosse, May 19-26, 1 case; Milwaukee, June 2-9, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, April 7-21, 4 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, April 21-May 5, 13 cases.
Argentina: Buenos Ayres, March 1-31, 68 cases, 52 deaths.
Brazil: Rio de Janeiro, April 22-May 13, 4 cases, 1 death; Pernambuco, April 15-30, 7 deaths.
Chile: Iquique, May 5-12, present.
Canada: St. Thomas, May 26-June 2, 6 cases; Toronto, May 12-June 2, 8 cases; Winnipeg, 1 case.
China: Hongkong, April 7-May 5, 30 cases, 17 deaths.
Germany: Bremen, May 12-26, 2 cases, 1 death.
Gibraltar: May 13-27, 6 cases, 1 death.
Great Britain: Bristol, May 12-19, 2 cases; London, May 29, 2 cases; Newcastle-on-Tyne, 2 cases; Hull, May 19-26, 1 case; Liverpool, 1 case.
Greece: Athens, May 13-28, 4 deaths.
India: Bombay, May 1-15, 8 cases, 16 deaths; Calcutta, April 21-May 5, 131 cases, 99 deaths; Kurachi, April 30-May 13, 48 cases, 16 deaths; Madras, April 28-May 11, 16 cases, 11 deaths; Rangoon, April 21-May 5, 35 cases, 28 deaths.
Italy: General, May 10-24, 59 cases.
Russia: St. Petersburg, April 29-May 12, 14 cases, 11 deaths; Moscow, May 5-19, 22 cases, 8 deaths; Odessa, May 12-26, 24 cases, 3 deaths.
Spain: Barcelona, May 13-30, 11 cases, 5 deaths.
Turkey: Constantinople, May 20-27, 1 death.

YELLOW FEVER—UNITED STATES.

Mississippi: Gulf Quarantine, June 4-6, 3 cases, on S. S. *Whitehall*, from Colon.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, May 6-13, 1 case, 3 deaths.
Cuba: Habana, June 7-12, 2 cases, 1 death.
Honduras: Plumienta, May 19, 2 cases.
Mexico: Coatzacoalcos, May 19-26, 1 case, 1 death; Merida, May 13-26, 3 cases, 1 death.
Santo Domingo: La Vega, June 9, present.

CHOLERA—INSULAR.

Philippine Islands: Manila, April 7-21, 26 cases, 22 deaths.

CHOLERA—FOREIGN.

China: Hongkong, April 28-May 5, 1 case, 1 death.
India: Bombay, May 1-15, 18 deaths; Calcutta, April 21-May 5, 215 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, June 3-4, 1 case, 1 death.
Philippine Islands: Manila, April 14-21, 1 case, 1 death.

PLAGUE—FOREIGN.

Australia: Brisbane, April 14-21, 2 cases, 1 death; Rockhampton, April 5-12, 4 cases, 1 death. April 14-21, 4 cases, 3 deaths.
Brazil: Rio de Janeiro, May 6-13, 1 case, 1 death.
China: Hongkong, April 7-May 8, 184 cases, 176 deaths.
Egypt: Beni Souf, Providence, May 11, 2 cases; Minieh Province, May 14-17, 8 cases, 4 deaths; Keneh Province, May 11-17, 7 cases, 10 deaths; Port Said, May 17, 1 death.
India: General, April 21-May 5, 33,747 cases, 28,029 deaths; Bombay, May 1-15, 1,517 deaths; Calcutta, April 21-May 5, 296 deaths; Karachi, April 30-May 5, 465 cases, 415 deaths; Rangoon, April 21-May 5, 125 deaths.
Japan: Formosa, April 1-30, 800 cases, 602 deaths; Kobe, April 14-May 8, 6 cases, 7 deaths.

Association News

THE BOSTON REGISTRATION.

List of Members Who Registered at the Boston Session.

The total registration at the Boston session was over 4,700, the largest in the history of the Association. The largest registration previously was 2,890, at Atlantic City in 1904. In addition to the over 4,700 names below, a few more than a score registered whose names are not given. These either have not forwarded credentials for membership or failed to fill out the card for publication. Below are given two summaries, one by sections and one by states.

REGISTRATION BY SECTIONS.

Practice of Medicine	1,363
Obstetrics and Diseases of Women	307
Surgery and Anatomy	1,006
Hygiene and Sanitary Science	103
Ophthalmology	257
Diseases of Children	160
Stomatology	93
Nervous and Mental Diseases	178
Cutaneous Medicine and Surgery	109
Laryngology and Otology	166
Pharmacology and Therapeutics	76
Pathology and Physiology	92
Registered without specifying any particular section	554
Marked more than one section	248

REGISTRATION BY STATES.

Alabama	28	Louisiana	17	Oklahoma	3
Arkansas	16	Maine	146	Oregon	10
Arizona	3	Maryland	67	Pennsylvania	433
California	37	Massachusetts	1478	Philippine Is.	1
Colorado	45	Michigan	111	Rhode Island	153
Connecticut	115	Minnesota	80	S. Carolina	15
Delaware	9	Mississippi	7	S. Dakota	12
Dist. of Col.	31	Missouri	72	Tennessee	49
Florida	4	Montana	6	Texas	33
Georgia	24	Nebraska	20	Utah	10
Hawaii	1	Nevada	2	Vermont	88
Idaho	1	New Hampshire	156	Virginia	33
Illinois	237	New Jersey	90	Washington	9
Indian Ter.	3	New Mexico	4	West Virginia	16
Indiana	110	New York	489	Wisconsin	68
Iowa	77	N. Carolina	18	Wyoming	1
Kansas	25	N. Dakota	9	Canada	4
Kentucky	49	Ohio	189	Other foreign	2

Practice of Medicine.

Abbott, S. W., Lawrence, Mass.
Abel, Wm. C., West Union, W. Va.
Acherm, John Warren, Boston.
Ackerman, John, Erie, Pa.
Acuff, S. D., Knoxville, Tenn.
Adams, Dut S., Rochester, Minn.
Adler, Harry, Baltimore, Md.
Alexander, Wm. H., Canonsburg, Pa.
Alexander, W. J., Marthasville, Mo.
Alguire, Annie, Belvidere, Ill.
Alker, Stanislaus Joseph, Brooklyn Borough, N. Y.
Allard, L. D., Portsmouth, Ohio.
Allbee, E. S., Bellows Falls, Vt.
Allen, Carl A., Holyoke, Mass.
Allen, G. S., Lawrence, Mass.
Allen, J. Q., Montrose, Colo.
Allen, U., Jersey City, N. J.
Alter, J. G., New Kensington, Pa.
Alton, Charles D., Hartford, Conn.
Amerland, J. H., St. Louis, Mo.
Ames, John L., Boston, Mass.
Anderson, Alex. J., Newport, R. I.
Anderson, D. Bruce., Paris, Ky.
Anderson, Guy R., Barnesboro, Pa.
Anderson, Wm. E., Farmville, Va.
Andrews, Edward Austin, Newton Center, Mass.
Anders, James M., Philadelphia, Pa.
Angell, F. C., Randolph, Vt.
Ankeney, C. R., Philadelphia, Pa.
Annable, Edwin G., Concord, N. H.
Arkin, Louis, Roxbury, Mass.
Armstrong, E., Greenleaf, Kas.
Armstrong, T. E., South Boston, Va.
Arnold, Horace D., Boston, Mass.
Ashcraft, Samuel A., Mullen Hill, N. J.
Atkinson, A. Duval, Baltimore, Md.
Atwood, A. Wilson, Mt. Hermon, Mass.
Atwood, Charles F., Arlington, Mass.
Atwood, George M., Haverhill, Mass.
Atwood, J. W., Fiskhillon Hudson, N. J.
Austin, Albert E., Medway, Mass.
Averill, Jesse H., Campello, Mass.
Astell, John F., Newton, N. H.
Ayer, Silas Hibbard, Boston, Mass.
Babb, W. M., Allegheny, Pa.
Babcock, H. S., Danville, Ill.
Bachman, Gustavus A., Philadelphia, Pa.
Badger, George S. C., Boston, Mass.
Bailey, Samuel, Mt. Ayr, Iowa.
Baker, George L., Boston, Mass.
Baker, O. C., Brandon, Vt.
Baketel, R. V., Methuen, Mass.
Baldwin, W. D., Honolulu, Hawaii.
Ball, Clarence F., Rutland, Vt.
Ball, Tillinghast, New York, N. Y.
Bancroft, Edward E., Wellesley, Mass.
Banfield, F. L., Worcester, Mass.
Bannan, Theresa, Syracuse, N. Y.
Barber, Annette E., Glens Falls, N. Y.
Barber, Joseph De Vere, Westerly, R. I.
Barker, Lewellys, F., Baltimore, Md.
Barker, Byron F., Bath, Me.
Barker, Christopher F., Newport, R. I.
Barnes, W. L., Lexington, Mass.
Barrett, F. E., Glencoe, Minn.
Barry, F. W., Whitinsville, Mass.
Barry, William F., Woonsocket, R. I.
Bartlett, Walter Oscar, Roxbury, Mass.
Bartol, John W., Boston, Mass.
Barton, F. R., Frazee, Minn.
Basket, John N., Hannibal, Mo.
Bass, Wm., Lowell, Mass.
Bassett, M. Imogene, Coopers-town, N. Y.
Beach, Chas. C., Hartford, Conn.
Beal, Frederick E., New York.
Beals, Arthur L., Brockton, Mass.
Bean, F. W., Anthony, R. I.
Bean, J. Walter, West Medford, Mass.
Beatty, H. M., Trenton, N. J.
Beck, John T., Dayton, Ohio.
Beckett, H. C., Scottsburg, Va.
Becknell, I. J., Goshen, Ind.

Beauclerk, W. P., Concord, N. H.
Beazley, W. S., Richmond, Va.
Beck, Harvey G., Baltimore, Md.
Belknap, Lewis J., San Jose, Cal.
Benus, Morris N., Jamestown, N. Y.
Benus, Wm. M., Jamestown, N. Y.
Bennett, H. P., Lynn, Mass.
Bettmann, Henry Wald, Cincinnati, Ohio.
Bierwirth, J. C., Brooklyn, N. Y.
Bigelow, C. E., Leominster, Mass.
Bigelow, Enos H., Framingham, Mass.
Billings, Frank, Chicago, Ill.
Birkofer, Wm. J., Gothenburg, Neb.
Bixby, Josiah P., Woburn, Mass.
Black, Frank W., Ligonier, Ind.
Black, Thomas F., Providence, R. I.
Blair, Arthur W., Boston, Mass.
Blaisdell, George W., Manchester, Mass.
Blanchard, Benjamin S., Brookline, Mass.
Blanchard, F. N., Detroit, Mich.
Blanchard, F. R., Lakeview, Mich.
Blanchard, R. G., Dover, N. H.
Bliss, J. L., Holyoke, Mass.
Boehm, John C., St. Cloud, Minn.
Bogue, H. A., Richford, Vt.
Boland, Elisha S., Boston, Mass.
Bond, J. L., Ukiah, Cal.
Bond, Willis G., Revere, Mass.
Bonney, C. H., Ludlow, Vt.
Bonney, Robert, East Boston, Mass.
Bonney, Sherman G., Denver, Colo.
Boone, John C., Wickliffe, Ky.
Bosworth, Truman D., Jr., Tewksbury, Mass.
Boucher, R. P., Providence, R. I.
Bourland, I. N., Equality, Ill.
Bouton, Otis Z., Fultonville, N. Y.
Bower, W. C., Lebanon, Kan.
Boyle, Blanche C., Portland, Me.
Boyle, John P., Lowell, Mass.
Bozorsky, Vacil D., Dunkirk, N. Y.
Brace, D. A., Quincy, Mass.
Bradbury, George A., Troy, N. Y.
Bradeen, F. B., Essex, Conn.
Braman, H. S., Homer, N. Y.
Brayton, Chas. E., Stonington, Conn.
Bridgman, B. N., Boston.
Briggs, Albert H., Buffalo, N. Y.
Brobeck, A. L., Hoopeston, Ill.
Brodbeck, G. H., Roann, Ind.
Broidrick, J. P., Boston.
Brooks, Robert H., Claremont, N. H.
Broughton, Henry W., Boston.
Brown, Charles H., Waterbury, Conn.
Brown, E. F., Groveton, N. H.
Brown, Everett J., Decatur, Ill.
Brown, Frank E., Baltimore.
Brown, Frederick N., Providence, R. I.
Browning, John S., Roxbury, Mass.
Brown, Windsor A., Worcester, Mass.
Brown, Wilfred G., Plymouth, Mass.
Brunker, James W., Riley, Ind.
Bruyère, John, Trenton, N. J.
Bryant, Clarence E., Hyde Park, Mass.
Bryant, Giles W., Somerville, Mass.
Buchanan, S. A., Philadelphia.
Buffum, William H., Providence, R. I.
Bullard, E. C., Jamestown, R. I.
Bundy, A. D., Osage, Iowa.
Burke, F. Edward, Wakefield, R. I.
Burdick, Frank E., Providence, R. I.
Burke, William H., Cambridge, Mass.
Burman, Thomas J., Boston.
Burnett, H. W., Providence, R. I.
Burnham, E. A., Boston
Burnham, Melvin P., Ray Brook, N. Y.
Burroughs, H. S., Pittsburg
Bush, J. Foster, Boston.
Bushnell, E. H., Quincy, Ill.
Bushnell, Homer, North Adams, Mass.
Butler, W. H., Fall River, Mass.
Butler, William H., Columbus, Ind.
Butterfield, C. F., Suncook, N. H.
Buxton, G. Edward, Providence, R. I.
Buzzell, Daniel F., Wilmington, Mass.
Byrne, T. J., Philadelphia.
Cabot, Richard C., Boston.
Caldwell, J. C., Rockfield, Me.
Callanan, Sampson A., Boston.
Campbell, A. D., Cleveland, O.
Campbell, B. F., Boston.
Campbell, Charles L., Sheraden, Pa.
Campbell, Donald, Butte, Mont.
Campbell, Edward, Providence, R. I.
Campbell, George R., Augusta, Me.
Canfield, Herbert H., Siloam Springs, Ark.
Capps, Joseph A., Chicago.
Carleton, C. G., Lawrence, Mass.
Carman, Russell D., St. Louis.
Carpenter, Edwin J., Corning, N. Y.
Carroll, Thos. F., Boston.
Carver, H. S., Marshfield, Vt.
Caspari, William, Baltimore.
Casselberry, C. M., Pottstown, Pa.
Cavanaugh, Thos. E., Holyoke, Mass.
Caverly, Charles S., Rutland, Vt.
Cecil, John G., Louisville, Ky.
Chace, W. H., Buffalo, N. Y.
Chamberlin, G. M., Chicago.
Chambers, H. L., Lecompton, Kan.
Champlin, John, Westerly, R. I.
Chaney, Herbert M., Sardinia, O.
Chandler, M. L., Barre, Vt.
Chapin, Clifford S., Gt. Barrington, Mass.
Chapin, Frederick W., Springfield, Mass.
Chapman, B. A., Springfield, Vt.
Chappell, J. W., Washington, D. C.
Charles, Orlando W., Bryantville, Mass.
Chase, Arthur B., Atchison, Kan.
Chase, Richard F., Boston.
Cheever, John H., Leominster, Mass.
Chesley, Alice M. M., Exeter, N. H.
Chesley, Andros P., Concord, N. H.
Chesley, Harry O., Dover, N. H.
Chestnut, James C., Philadelphia.
Childs, Alfred H., Dublin, N. H.
Chisholm, A. S. M., Bennington, Vt.
Chisholm, M. D., Westfield, Mass.
Chittick, W. R., Detroit, Mich.
Christopher, W. H., London, O.
Church, Thos. C., Valley Falls, N. Y.
Clark, E. J., Lowell, Mass.
Clark, G. Hardy, Waterloo, Iowa.
Clark, H. F., Barden, Ohio.
Clark, Henry S., New York.
Clark, Margaret Vanpel, Waterloo, Iowa.
Clarke, I. J., Haverhill, Mass.
Clarke, J. Fred, Fairfield, Iowa.
Clarke, Robert C., Pittsburg, Pa.
Clayton, Thomas A., Washington, D. C.
Cleaves, E. G., Rockport, Mass.
Clemensen, P. C., Chicago.
Cobb, Oliver W., Easthampton, Mass.
Coburn, Irving S., Milton, Vt.
Cochrane, J. F., Valatie, N. Y.
Coffin, A. R., Boston.
Cogan, Joseph A., Boston.
Cogswell, George Proctor, Cambridge, Mass.
Cogswell, William, Boston.
Cole, J. Wesley, Baltimore.
Coleman, Edward T., Graymont, Ga.
Coleman, J. E., Doddsville, Miss.
Coleman, N. R., Columbus, Ohio.
Conard, George R., New Vienna, Ohio.
Conneen, Thomas F., Portland, Me.
Conner, Lewis A., New York.
Coolidge, John C., Boston.
Cooper, C. M., San Francisco, Cal.
Corman, Chas. A. E., Philadelphia.
Cornell, Walter S., Philadelphia
Cornwell, E. S., La Salle, Mich.
Cowan, E. H., Crawfordsville, Ind.
Cox, Nathaniel D., Spencer, Ind.
Coye, Dorran B., Riverside, R. I.
Crain, F. M., Redfield, S. D.
Cram, John W., Colerain, Mass.
Crane, A. Melville, Marion, Ohio.
Crane, S. Ellis, Syracuse, N. Y.
Craveus, M. H., Arlington, Tex.
Crockett, Sidney S., Nashville, Tenn.
Crooker, George H., Providence, R. I.
Cross, J. G., Minneapolis, Minn.
Cross, William P., Boston.
Crouch, Hugh T., Bardwell, Ky.
Crump, George A., New York.
Cummings, E. S., Lewiston, Me.
Cummings, F. R., Concord, N. H.
Cummings, M. A., Fall River, Mass.
Cunningham, Thomas E., Cambridge, Mass.
Currier, W. Eugene, Leominster, Mass.
Curry, Edwin A., Danville, Pa.
Curry, Grove P. M., Mount Kisco, N. Y.
Curtice, L. E., Buffalo, N. Y.
Curtis, G. Lenox, New York.
Curtis, William G., Quincy, Mass.
Cushing, Arthur A., Brookline, Mass.
Custer, D. D., Philadelphia.
Custer, Henry F., Somerville, Mass.
Cutler, Elbridge G., Boston.
Cutter, Charles K., Somerville, Mass.
Dadmun, Eliza J., Boston.
Daniel, Vivian, Watertown, Mass.
Daland, Judson, Philadelphia.
Daly, Jeremiah J., North Andover, Mass.
Dana, Harold W., Boston, Mass.
Dancer, Chas. W., Stroh, Ind.
Darling, Eugene A., Cambridge, Mass.
Darragh, Edmiston, Winnetka, Ill.
Darrow, Chas. E., Rochester, N. Y.
Dart, Frederick H., Niantic, Conn.
Davidson, Kallman M., Boston.
Davis, Ernest E., Avon, Ill.
Davis, John L., Cincinnati, Ohio.
Davies, Josiah S., Granville, N. D.
Davis, N. S., Chicago.
Day, Frank L., Providence, R. I.
Day, W. E., Clarksville, Iowa.
Dean, Ralph D., Taunton, Mass.
Dearborn, Edmund G., Keene, N. H.
Dearing, Howard S., Boston.
Denig, Blanche A., Boston.
Dennett, Charles A., Arlington, Mass.
Denny, Francis P., Brookline, Mass.
Dewis, John William, Boston.
De Wolf, Halsey, Providence, R. I.
Dexter, Fred F., Granby, Mass.
Deziel, Godfrey, Minneapolis, Minn.
Dickes, Philip, Greenville, Ohio.
Dierking, Albert W., Oolitic, Ind.
Dillon, J. R. Marmaduke New Orleans, La.
Dock, George, Ann Arbor, Mich.
Dodge, Wm. W., Boston.
Dodin, Henry A., New York.
Doerr, John E., Mt. Vernon, Ind.
Donoghue, Daniel F., Holyoke, Mass.
Dorman, A. B., Winthrop, Mass
Donoghue, James C., Boston.
Douglass, E. P., Groton, Conn.
Douglass, John A., Amesbury, Mass.
Dow, David C., Cambridge, Mass.
Dow, George F., Reading, Mass.
Downey, Charles J., Springfield, Mass.
Dowling, Chas. H., Everett, Mass.
Downs, J. A., Glidden, Iowa.
Doyle, John H., Grafton, W. Va.
Drake, George H., Pontiac, Mich.
Draper, Arthur D., Boston.
Drake, Chas. B., West Lebanon, Neb.
Drake, Wm. A., North Weymouth, Mass.
Drawbaugh, J. H., Shiremanstown, Pa
Drexsm, Richard E., Holyoke, Mass.
Driscoll, Daniel, Portland, Me.
Drummond, Edward A., Newark N. J.
Drummey, N. D., Boston.
Dwyer, D. W., La Grange, Ind
Duff, John, Charleston, Mass
Dugdale, R. B., South Bend, Ind.
Drew, Fred, Boston, Mass.
Dugan, Thomas J., Indianapolis, Ind.
Dunbar, F. H., Boston.
Duncan, E. M., Marshall, Ill.
Dunham, Henry B., Rutland, Mass.
Dunham, Kennon, Cincinnati, O.
Dunning, Z. F., Philmont, N. Y.
Durham, Jas. R., Warren, Pa.
Duryee, Albert P., Brockton, Mass.
Dwyer, Wm. J., Cambridge, Mass.
Eastman, Alexander C., Southboro, Mass.
Eastman, H. H., Jamestown, N. Y.
Eastman, Theodore Jewett, Boston.
Eaton, Albert M., Philadelphia.
Eaton, W. W., Danvers, Mass.
Eberspacher, F. J., Pana, Ill.
Edsall, David L., Philadelphia.
Edson, Carroll E., Denver, Colo.
Egan, J. J., Gloucester, Mass.
Eggleston, E. L., Battle Creek, Mich.
Eichberg, Joseph, Cincinnati, O.
Eldridge, David S., Boston.
Eliot, Ellsworth, New York.
Ellenberger, J. Wesley, Harrisburg, Pa.
Ellinger, T. J., Philadelphia.
Elliott, Arthur R., Chicago.
Elliott, James T., East Liverpool, Ohio.
Elsner, Henry L., Syracuse, N. Y.
Emerson, Charles P., Baltimore.
Emerson, Ernst B., Tewksbury, Mass.
Emery, George E., Worcester, Mass.
England, Albert Charles, Pittsfield, Mass.
Engle, O. C., Scottdale, Pa.
Epler, E. E., Fort Smith, Ark.
Epting, R. B., Greenwood, S. C.
Erdman, W. B., Macungie, Pa.
Erdman, William S., Buckingham, Pa.
Evans, D. W., Scranton, Pa.
Evans, Earl W., Columbus, Ohio.
Evans, William, Philadelphia.
Eveleth, Charles W., Salem, Mass.
Everhard, Eleanora S., Dayton, Ohio.
Everhart, R. E., Clinton, Iowa.
Ewing, Wm. B., West Grove, Pa.
Fackler, G. A., Cincinnati, Ohio.
Faries, Clarence T., Narberth, Pa.
Fassett, Chas. Wood, St. Joseph, Mo.
Faulds, W. H., Kingston, Pa.
Favill, Henry B., Chicago.
Felch, T. A., Ishpeming, Mich.
Felker, Gertrude, Dayton, Ohio.
Ferguson, Edward H., Boston.
Fernandez Ybarra, A. M., New York.
Finder, William, Jr., Troy, N. Y.
Finkelstein, Harry, Boston.
Fischer, E., Detroit, Mich.
Fish, E. J., South Royalton, Vt
Fish, Lewis, Fitchburg, Mass.
Fisher, P. E., Providence, R. I.
Fisher, T. J., West Newton, Mass
Fisler, C. F., Clayton, N. J.
Fitch, Alpheus, Factoryville, Pa
Fitz, R. H., Boston.
Fitzpatrick, John J., Charlestown, Mass.
Flanders, C. F., Manchester, N. H.
Fleming, Peter J., Boston.
Fleming, P. J., Cambridge, Mass.
Flewelling, Douglas S., Somerville, Mass
Flint, E. P., Rockville, Conn.
Flower, W. Z., Gibbon, Minn.
Floyd, Cleaveland, Brookline, Mass
Flynn, Henry L., Roxbury, Mass.
Foley, Timothy J., Worcester, Mass
Foote, Charles J., New Haven, Conn.
Forchheimer, F., Cincinnati, O
Foss, W. B., Ashley, Pa.
Fountain, J. H., Chaplin, Ill.
Fountain, O. R., Boston.
Frame Joseph, Rockland, Mass
Framing, F. C., Galesburg Ill
Franeline, Albert Philip, Philadelphia
Frauenthal, Herman C., New York.
Freeman, Edward D., Osgood, Ind.
French, Charles H., Pawtucket, R. I.

Fruend, Hugo A., Ann Arbor, Mich.
Friedenwald, Julius, Baltimore.
Friedrick, Martin, Cleveland, O.
Frost, Edward L., Buffalo, N. Y.
Fuller, F. B., Pawtucket, R. I.
Fuller, G. E., Monson, Mass.
Fulton, Dudley, Los Angeles, Cal.
Furman, Davis, Greenville, S. C.
Fussell, M. H., Philadelphia.
Gage, Edward F., Winthrop, Mass.
Gage-Day, Mary, Kingston-on-Hudson, N. Y.
Gale, A. Ernest, Chicago.
Gale, Harold Adams, Winchester, Mass.
Gallison, Henry H., Cambridge, Mass.
Gallman, William J., South Boston, Mass.
Gammell, H. W., Madison, Wis.
Gammon, William, Galveston, Tex.
Gans, Dan'l W., Massillon, Ohio.
Gardner, John L., Rochelle, Ill.
Gardner, William S., New York.
Garretson, W. M., Anderson, Ind.
Gashwiler, J. Schooling, Novinger, Mo.
Gass, James, Sheffield, Pa.
Gaston, Mary E., Somerville, N. J.
Gaylord, Charles W., Brantford, Conn.
Généreux, Joseph O., Webster, Mass.
Gholston, W. D., Danielsville, Ga.
Gibbs, L. J., Chicopee Falls, Mass.
Gibson, C. R., Woodsville, N. H.
Gibson, Robert F., Somerville, Mass.
Gichner, Joseph E., Baltimore.
Gifford, Henry B., Juda, Wis.
Gillette, Arthur A., Rome, N. Y.
Gilbert, John, Fall River, Mass.
Gillis, J. E., Somerville, Mass.
Gilman, Louis L., Rochester, N. H.
Gleason, W. F., Providence, R. I.
Glendenning, Robert T., Manchester, Mass.
Gnagi, Wm. R., Monroe, Wis.
Gompertz, Louis M., New Haven, Conn.
Good, J. F., New Cumberland, Pa.
Goodall, Harry W., Boston.
Gore, David C., Marshall, Mo.
Gordon, John Alexander, Quincy, Mass.
Gorham, Fordyce C., Conderport, Pa.
Gostanian, James, Sault Ste. Marie, Mich.
Gow, Frank F., Schuylerville, N. Y.
Graber, C. Lee, Cleveland, Ohio.
Grafton, Frank W., Concord, N. H.
Graham, Christopher, Rochester, Minn.
Graham, R. F., Greeley, Colo.
Grank, W. Y., Lawrence, Mass.
Granger, F. C., Randolph, Mass.
Graves, E. E., Penacook, N. H.
Graves, Frederick C., Bridgeport, Conn.
Green, Heriwyn R., Providence, R. I.
Green, W. A., Wauson, Wis.
Greene, Clark W., Binghamton, N. Y.
Greene, E. B., Chicago.
Greene, L. M., Bethel, Vt.
Greene, Ray W., Worcester, Mass.
Greenley, T. B., Meadow Lawn, Ky.
Greenwood, Arthur M., Marblehead, Mass.
Griffin, Arthur G., Malden, Mass.
Griffin, C. E., Fair Haven, Vt.
Griffin, Clifford H., Providence, R. I.
Grim, D. T., Reading, Pa.
Grimes, J. R., Montpelier, Vt.
Grimer, Loring, Swampscott, Mass.
Grothan, Georgiana, St. Paul, Neb.
Grouard, John S., Nantucket, Mass.
Grover, Arthur, Hyde Park, Mass.
Guild, Frank E., Windham, Conn.
Guinn, John William, Butte, Mont.
Gutshall, F. A., Blair, Pa.
Hagertly, G. R., Bar Harbor, Maine.
Hahn, E., Latoula, Ohio.
Haines, George B., Valley Falls, R. I.
Hale, L. L., Chebeague, Maine.
Hale, William, Gloucester, Mass.
Hall, Eldon N., Woodham, Ky.
Hall, George W., Chicago.
Hall, J. N., Denver, Colo.
Hall, R. M., Baltimore.
Hall, William Thomas, Tarentum, Pa.
Hallenbeck, O. J., Canandaigua, N. Y.
Halloran, M. J., Worcester, Mass.
Halsey, L. M., Williamstown, N. J.
Hamilton, G. Clarence, Louisville, Ohio.
Hamilton, J. H., Union, S. C.
Hamilton, Robert D., Newburyport, Mass.
Hanley, Francis J., Whitman, Mass.
Hannum, E. A., Cleveland, Ohio.
Hannum, Wm., Hatboro, Pa.
Hanson, C. W., Northwood Ridge, N. H.
Hanson, William C., Cambridge, Mass.
Happel, Thos. J., Trenton, Tenn.
Harding, G. T., Jr., Washington, D. C.
Hardman, Margaret Sabina, Pawtucket, R. I.
Hardy, Theodore E., North Vassalboro, Maine.
Hare, H. A., Philadelphia.
Haskins, Daniel S., Boston.
Harkness, Robert B., Houghton, Neb.
Hartland, Frank T., Waterloo, Ia.
Harle, John, Quincy, Mass.
Harpole, Winfield S., Chicago.
Harriman, David E., South Hadley Falls, Mass.
Harrington, Thos. F., Lowell, Mass.
Harris, E. Eliot, New York.
Harrison, Frank M., Napoleon, Ohio.
Hart, W. F., Camden, Maine.
Hartman, W. F., Swoope, Va.
Hartzell, Wm. H., Allentown, Pa.
Harvey, E. B., Boston.
Harvey, Edwin B., Providence, R. I.
Harwood, W. E., Eveleth, Miss.
Haskell, H. B., Auburndale, Mass.
Hatchett, John A., El Reno, Okla.
Hanrahan, John D., Rutland, Vt.
Hawes, John B., Boston.
Hawley, J. D., Burr Oak, Kan.
Hawley, W. H., College Corner, Ohio.
Hay, Charles H., Cleveland, O.
Hayes, Grosvenor L. T., Granite ville, Vt.
Hayes, Stephen W., New Bedford, Mass.
Hayden, Louis B., Livermore Falls, Maine.
Hayford, Ernest L., Chicago.
Hedrick, J. S., Dunkirk, Ohio.
Heilman, R. P., Emporium, Pa.
Hemingway, William Herbert, New York.
Henkle, Emanuel A., New London, Conn.
Herbst, H. H., Allentown, Pa.
Heritage, C. S., Glassboro, N. J.
Herrick, James B., Chicago.
Herrick, John F., Ottumwa, Ia.
Hersey, Freeman C., Boston.
Hersh, E. G., McComb, Ohio.
Hertz, Wm. J., Allentown, Pa.
Hewes, Henry F., Boston.
Hewitt, Adelbert, Saratoga Springs, N. Y.
Hickey, J. J., Peabody, Mass.
Hicks, L. N., Burlington, Wis.
Higgins, R. P., Cortland, N. Y.
Higgins, William Lincoln, South Coventry, Conn.
Hildreth, John L., Cambridge, Mass.
Hill, Edmund E., Suncook, N. H.
Hill, George S., Marblehead, Mass.
Hill, Roscoe, Epson, N. H.
Hillard, W. A., Westerly, R. I.
Hills, Charles E., South Natchez, Miss.
Hindle, William, Providence, R. I.
Hiner, S. B., Lima, Ohio.
Hinkiss, George, Boston.
Hobley, Thomas, Amherstburg, Ontario, Canada.
Hodges, J. W., Washington, D. C.
Hodges, Almon D., Boston.
Hodskins, M. B., Palmer, Mass.
Hoffman, Chas. F., Bolivar, N. Y.
Hogeboom, Wm. L., Troy, N. Y.
Holbrook, Bradbury, West Newton, Mass.
Holden, N., Southampton, Mass.
Holden, Timothy N., New York.
Holder, R. E., Columbus, Ind.
Holland, P. C., Bloomington, Ind.
Hollingshead, E., Pemberton, N. J.
Holmes, A. M., Denver, Colo.
Holmes, Howard F., Tewksbury, Mass.
Holt, Frank Hammett, Boston.
Holt, Oliver P., Cincinnati, O.
Holton, C. E., Bernardston, Mass.
Hood, W. H., Reno, Nev.
Hoover, P. D., Waynesboro, Pa.
Horn, J. A., Manchehunk, Pa.
Howard, F. H., Williamston, Mass.
Howe, William A., Phelps, N. Y.
Howell, Wm. W., West Roxbury (Boston), Mass.
Hubbard, C. L., Parma, Mich.
Hubbard, Wm. S., Brooklyn, N. Y.
Huber, John B., New York.
Hunt, George E., Holyoke, Mass.
Hunt, S., East Providence, R. I.
Hunter, Chas. H., Minneapolis, Minn.
Hunter, Norman M., Hudson, Mass.
Hurd, F. F., New York.
Hurd, James T., Galeton, Pa.
Husbrouck, Ira D., Washington, D. C.
Huselton, William Sterling, Pittsburg, Pa.
Hutchinson, C. M., Cambridge, Mass.
Hutchinson, Woods, Arrowhead Springs, Cal.
Hutchinson, W. H., Childersburg, Ala.
Hutchison, J. C., Troy, N. Y.
Hyde, Fritz Carleton, Greenwich, Conn.
Iams, S. T., Waynesburg, Pa.
Ilsley, Frederick R., Medford, Mass.
Infield, T. H., Hartford, Ohio.
Ingram, Mary de D., Brooklyn, N. Y.
Jack, Cecil McKee, Decatur, Ill.
Jack, Lewis H., West Newton, Mass.
Jacobs, Abraham, New York.
Jacobson, Aug., Chicago.
Jacoby, Douglas P. A., Newport, R. I.
Jackson, Alton A., Everett, Mass.
Jackson, Henry, Boston.
Jackson, H. B., Melrose, Mass.
Jackson, J. H., Fall River, Mass.
Jackson, James Marsh, Boston.
James, Walter B., New York.
James, William H., Pennsville, N. J.
James, W. S., Cleveland, Ohio.
Janeway, E. G., New York.
Jansen, F. J., Fonda, N. Y.
Jarvis, Fred J., Delta, Iowa.
Jenkins, Geo. F., Keokuk, Iowa.
Jennings, Gainor, West Milton, Ohio.
Jennings, S. D., Sewickley, Pa.
Johnson, A. R., Henderson, Ky.
Johnson, C. B., Batavia, Ill.
Johnson, Frank M., Boston.
Johnson, Frank S., Chicago.
Johnson, Orville E., Winthrop, Mass.
Johnson, William A., Lowell, Mass.
Johnston, James I., Pittsburg, Pa.
Johnstone, W. J., Boston.
Jones, Allen A., Buffalo, N. Y.
Jones, Clement R., Pittsburg, Pa.
Jones, Frank A., Memphis, Tenn.
Jones, Fred E., Quincy, Mass.
Jones, F. W., New Ipswich, N. H.
Jones, W. Russell, Richmond, Va.
Jordan, John F., Peabody, Mass.
Joslin, Elliott P., Boston.
Jouett, Fred R., Cambridge, Mass.
Joy, J. A., Atlantic City, N. J.
Joy, L. Fowler, Fulton, N. Y.
Joyce, James H., Salem, Mass.
Judson, W. H., Danielson, Conn.
Jump, Henry D., Philadelphia.
Kahlo, Geo. D., Indianapolis and French Lick, Ind.
Kalayjian, D. S., Parker, S. D.
Karpeles, M. J., Philadelphia.
Kay, W. J., Lapeer, Mich.
Keefe, D. E., Springfield, Mass.
Kegel, Ernest T., Walcott, Ia.
Keith, Halbert L., Milford, Mass.
Keller, F. G., Alexandria, Ind.
Kelley, Daniel H., Oldtown, Me.
Kellogg, Edward B., Boston, Mass.
Kelly, A. O. J., Philadelphia.
Kelly, Wm. D., Boston.
Kenefick, Thomas A., Newport, R. I.
Kennedy, A. L., Denver, Colo.
Kenney, John C., Sharon, Vt.
Kenney, W. C., Tewksbury, Mass.
Kenniston, Wm. B., Exeter, N. H.
Kent, J. B., Putnam, Conn.
Keyes, R. H., Hopedale, Ill.
Killough, J. N., Woodlawn, Ala.
Kimball, Grace N., Poughkeepsie, N. Y.
Kimball, H. H., Minneapolis, Minn.
Kimberlin, A. C., Indianapolis, Ind.
Kimmell, J. A., Findlay, Ohio.
King, Charles P., Newark, Ohio.
King, W. S., Ashtabula, Ohio.
Kingsbury, Albert D., Boston.
Kinney, J. E., Denver, Colo.
Kinnicutt, Francis P., New York.
Kirker, George A., Detroit, Mich.
Kistler, Geo. B., Newsomerstown, Ohio.
Kistler, H. B., Sunbury, Ohio.
Kite, Walter C., Milton, Mass.
Kittredge, Joseph, Brookline, Mass.
Kline, W. D., Allentown, Pa.
Klopp, Peter P., Philadelphia.
Knapp, Alfred A., Brimfield, Ill.
Knecht, Cyrus, Matawan, N. J.
Knickerbocker, Percy G., Boston.
Knight, Chas. S., Westboro, Mass.
Knight, Frederick I., Boston.
Kopfstein, F. P., Cleveland, O.
Kurtz, C. S., Malvern, Pa.
Laird, Arthur Turner, Albany, N. Y.
Lambert, Alexander, New York.
Lamson, William Judson, Summitt, N. J.
Lang, Herbert B., Dorchester, Mass.
Lanahee, Ralph C., Boston.
Lancaster, Sherman R., Cambridge, Mass.
Lane, Walter A., Milton, Mass.
Lape, Rushmore, Fair Haven, Vt
Larned, Ezra Read, Chicago.
Larrabee, F. W., Black Island, R. I.
Larrabee, H. M., Tewksbury, Mass.
Latham, Daniel S., Auburn, R. I.
Lavallee, George Omer, Lowell, Mass.
Lawrence, G. H., Galesville, Wis.
Lawrence, W. E., North Haverhill, N. H.
Lawson, Geo. N., Middle Haddam, Conn.
Larned, I. B., Northampton, Mass.
Leary, William C., Springfield, Mass.
Lee, Walter A., Bellevue, Iowa.
Leech, J. W., Providence, R. I.
Leen, Thomas Francis, Charlestown, Mass.
Le Roy, I. D., Pleasant Valley, N. Y.
Leroy, Louis, Nashville, Tenn.
Leslie, Horace G., Amesbury, Mass.
Levison, Louis A., Toledo, Ohio
Levy, Harris, Syracuse, N. Y.
Lewis, D. M., New Haven, Conn.
Lewis, James N., Ashaway, R. I.
Libby, Edward N., Roxbury, Mass.
Libby, J. H., East Weymouth, Mass.
Libman, Emmanuel, New York.
Lichty, John A., Pittsburg, Pa.
Lincoln, Merrick, Worcester, Mass.
Linder, A. W., Chicago.
Lindquist Carl A., Boston.
Little, Abby H., Newburyport, Mass.
Littlefield, Anna M., New London, N. H.
Locke, Edwin A., Boston
Lombard, Loring S., South Portland, Maine.
Long, C. R., Pleaseton Ind.
Long, Merritt Allen, Manchester, Mass.
Lougee, Wm. W., Malden, Mass.
Loughran, Frederic William, New York.
Longfellow, Henry N., Boston.
Lord, Frederick T., Boston.

Loring, R. P., Newton Center, Mass.
Louria, Leon, Brooklyn, N. Y.
Lovell, C. D. S., Lynn, Mass.
Lowder, Lindsey T., Bloomington, Ind.
Lowman, John H., Cleveland, O.
Lumsden, W. J., Elizabeth City, N. C.
Lynn, J. F., Waseca, Minn.
MacCabe, Arthur, Gloucester, Mass.
Macdonald, Alexander A. Boston.
Macfarlane, R. F., New York.
Mack, Herbert, Pueblo, Colo.
Mack, John A., Crompton, R. I.
Mackeen, Alfred A., Whitman, Mass.
MacKnight, Adam S., Fall River, Mass.
MacLellan, Charles, Chicago.
Macomber, G. N., Denver, Colo.
MacQuaid, John F., Worcester, Mass.
Maher, Stephen J., New Haven, Conn.
Malaun, M. E., Carbondale, Pa.
Mandell, A. H., New Bedford, Mass.
Mann, E. S., Pennsylvania
Marchand, J. F., Canton, Ohio.
Marcley, Walter J., Rutland, Mass.
Marcy, Alex., Jr., Riverton, N. J.
Marion, O. H., Boston.
Markham, E. W., Lee, Mass.
Marquart, O. M., Springfield, O.
Marsh, E. J., Paterson, N. J.
Marsh, W. C., Albion, Mich.
Martin, John Macleod, Boston.
Marvel, Philip, Atlantic, N. J.
Mason, H. P., Wilton Junction, Iowa.
Mathews, George S., Providence, R. I.
Maner, G. R., Warrenton, Ga.
Mayhew, Orland S., Vineyard Haven, Mass.
Maytum, W. J., Alexandria, S.D.
McArthur, J. H., East Barre, Vt.
McAdams, Wm. J., Pittsburg, Pa.
McAllester, J. J. H., New Bedford, Mass.
McBain, Wm. H., Malden, Mass.
McBurney, Chas. Fred, Altoona, Pa.
McCarthy, Timothy F., East Boston.
McCaskey, G. W., Ft. Wayne, Ind.
McCauley, Albert A., Boston (Brighton Dist.).
McClain, W. L., Scottsburg, Ind.
McCollin, S. Mason, Philadelphia.
McConnell, Chas. W., Altoona, Pa.
McConnell, T. E., Parnassus Pa.
McCormick, Horace G., Williamsport, Pa.
McCormack, R. J., Boston.
McCormick, Thos. P., Baltimore.
McCoy, Clem D., Kenton, Ohio.
McCready, R. J., Allegheny, Pa.
McCreery, Chas. R., Tacoma, Wash.
McCullough, R. G., Providence, R. I.
McDermott, Bernard F., Providence, R. I.
McDermott, Wm. V., Salem, Mass.
McDonald, W. J., Boston.
McGannon, Thomas G., Lowell, Mass.
McGavran, C. W., Columbus, O.
McGowan, J. D., Chicago.
McGregor, George W., Littleton, N. H.
McGulgan, Jno. L., Philadelphia.
McGuire, M. F., Montpelier, Vt.
McIlhanney, Wm. H., Easton, Pa.
McKay, James S., Potsdam, N. Y.
McKeen, Sylvester P., Allston, Mass.
McKenna, James C., Boston.
McKinnon, Charles L., McKees Rocks, Pa.
McKnight, W. B., Mansfield, Tex.
McLaughlin, E. M., Winona, Minn.
McLennan, Roderick, Quincy, Mass.
McLaughlin, Joseph L., Roxbury, Mass.
McPherson, William F., Somerville, Mass.
McQueeney, Francis J., Boston, Mass
Mead, Louis Guy, Boston.
Meek, Edward, Argenta, Ark.
Melton, H. R., Wickliffe, Ky.
Mendelsohn, Louis, Dorchester, Mass.
Mercer, Frederick W., Chicago.
Meredith, W. E., Scottsville, Ky.
Merriam, F. H., Holbrook, Mass.
Merriam, Walter H., Cleveland, O.
Merrill, P. S., Waterville, Me.
Messer, C. C., Turners Falls, Mass.
Metcalf, Harold, Wickford, R. I.
Metts, Fred A., Ossian, Ind.
Meyer, H. E., Belmond, Ia.
Milan, Michael B., Providence, R. I.
Miller, Albert H., Providence, R.I.
Miller, A. I., Brattleboro, Vt.
Miller, Charles H., Boston.
Miller, DeWitt Clinton R., Mason and Dixon, Pa.
Miller, D. P., Huntingdon, Pa.
Miller, G. W., Bane, Vt.
Miller, Joseph L., Chicago.
Miller, Joseph S., York, Pa.
Miller, Walter Jones, Johnson City, Tenn.
Miller, Wm. Preston, Hagerstown, Md.
Milliken, Walter S., Madison, Me.
Millikin, T. N., Waynesburg, Pa.
Mills, H. Booker, Philadelphia.
Milnamow, J. T., Chicago.
Minor, Chas. L., Asheville, N. C.
Mitchell, Alfred, Brunswick, Me.
Mitchell, Harry F., South Bend, Ind.
Mitchell, Weir, Philadelphia.
Mix, Charles Louis, Chicago.
Moline, Charles, Snoderland, Mass.
Monroe, Nathan A., Syracuse, N.Y.
Montgomery, R. H., Youngstown, Ohio.
Monroe, Wm. H., Woonsocket, R.I.
Moore, Arthur R., Portsmouth, O.
Moore, Edwin P., South Bend, Ind.
Moore, T. B., Canon City, Colo.
Moore, J. C., Omaha, Neb.
Moore, James S., East Providence, R. I.
Moore, T. M., Willoughby, O.
Moran, John B., Boston.
Moran, Thomas, Biddeford, Me.
Morgan, J. Howard, Westerly, R. I.
Morgan, Wm. Gerry, Washington, D. C.
Morrill, Chas. P., North Andover, Mass.
Morrill, L. B., Center Harbor, N. H.
Morris, John G., Boston.
Morris, J. Stewart, Revere, Mass.
Morrison, J. Rowan, Louisville, Ky.
Morrison, Sidney K., Reno, Nev.
Morrissey, John J., New York.
Morrow, E. O., Canton, O.
Morse, Edw. G., Roxbury, Mass. Mass.
Morse, F. D., Lawrence, Kas.
Morse, F. H., Boston.
Morse, Frank L., Somerville, Mass.
Morse, Frank W., Canton, Me.
Morton, David C., Louisville, Ky.
Morton, J. B., Ridgefarm, Ill.
Mousel, A. H., Latty, O.
Moyer, Frank E., Pennville, Ind.
Mudgett, John H., Philadelphia.
Munson, S. E., Springfield, Ill.
Murdock, Frank H., Pittsburg.
Murphy, Edward V., Newport, R. I.
Murphy, Franklin E., Kansas City, Mo.
Murphy, O. C., Scottsburg, Ind.
Murray, J. T. Manchester, N.H.
Musgrave, Percy, Boston.
Musser, J. H., Philadelphia.
Myers, S. W., Boston.
Nay, W. Scott, Underhill, Vt.
Nead, Daniel W., Philadelphia.
Neal, John H., Rochester, N.H.
Neary, P. N., Cortland, N. Y.
Neblett, L. L., Stayton, Tenn.
Neel, James L., Drake, Ky.
Neely, John M., Elmwood, Neb.
Nees, H. C., Park Ridge, N. J.
Nessley, G. B., Grove City, O.
Nettleton, Francis L., Shelton, Conn.
Newell, E. Dunbar, St. Joseph, La.
Newell, Harry W., West Derry, N. H
Newhall, Alden Russell, Hollister, Mass.
Newhall, Lawrence T., Brookfield, Mass.
Newmans, H. M., South Milford, Ind.
Newth, C. H., Philomath, Ore.
Newton, William C., Revere, Mass.
Nickerson, George W., Stoneham, Mass.
Nieder, Chas. F., Genera, N. Y.
Nippert, Henry T., St. Paul.
Nippert, Louis A., Minneapolis.
Nootnagel, Charles F., Minneapolis.
Norman, W. G., Dow City, Ia.
Norris, Frank O., Eagle Lake, Texas.
Norris, George N., Philadelphia.
Norton, F. D., Columbus, Ind.
Norwood, E. W., Spencer, Mass.
Noyes, Nathaniel K., Duxbury, Mass.
Noyes, Robert F., Providence, R.I.
O'Brien, Charles T., Woburn, Mass.
O'Brien, James F., Bellows Falls, Vt.
O'Brien, Joseph J., Boston.
Oburn, A. S., Altoona, Pa.
O'Connell, Thomas S., East Hartford, Conn.
O'Day, George F., Worcester, Mass.
O'Hearn, Daniel A., Lowell, Mass.
O'Keefe, Michael W., East Boston, Mass.
O'Meara, John G., Providence, R.I.
Ordway, Thomas, Boston.
Osgood, Frederick L., Saxton's River, Vt.
Osterhout, H. J., Marlow, N. H.
Oswald, B. Frank, Cleveland, O.
Otis, Samuel D., Meriden, Conn.
Overlock, S. B., Pomfret, Conn.
Oviatt, G. A., South Sudbury, Mass.
Packard, George Henry, Medford, Mass.
Page, Henry F., Philadelphia.
Paine, R. C., Thompson, Conn.
Palfrey, Francis W., Boston.
Palmiter, L. B., Mt. Upton, N. Y.
Parks, J. Wilson, East Boston, Mass.
Parsons, A. W., Sioux Falls, S.D.
Patch, William T., Boston.
Patton, J. Reynolds, Fairfield, Vt.
Paulson, David, Hinsdale, Ill.
Payne, G. W., Bardwell, Ky.
Payne, Luther C., Liberty, N. Y.
Pearce, Beatrice, Waukegan, Ill.
Pearson, G. Burton, Middleton, Del.
Pearson, M. W., Ware, Mass.
Peck, C. W., Brandon, Vt.
Peck, J. M., Arlington, Ky.
Peek, Leon A., Melbourne, Fla.
Pelree, George A., Tewksbury, Mass.
Penny, Herbert T., Cliftondale, Mass.
Pepper, William, Philadelphia.
Perkins, Jay, Providence, R. I.
Peterman, A. L., Parker, S. D.
Peterson, C. A. B., New Bedford, Mass.
Petry, William, Newark, N. J.
Pfaff, Otto, Oneida, N. Y.
Phelps, O. W., Warren, Mass.
Pickard, I. L., Concord Junction, Mass.
Pickett, F. B., Tyty, Ga.
Pickett, I. N., Odell, Neb.
Pierce, M. Vassar, Milton, Mass.
Pierson, Allen, Spencer, Ind.
Pigman, S. C., Concordia, Kas.
Pike, Forrest F., Melrose, Mass.
Pinard, P. R., Geddes, S. D.
Pitcher, H. F., Haverhill, Mass.
Pitner, T. J., Jacksonville, Ill.
Pitts, Rufus, Murfreesboro, Tenn.
Polak, John O., Brooklyn, N. Y.
Pollock, Robert, Cleveland, O.
Pomeroy, F. H., Monterey, Tenn.
Pomeroy, Hiram Sterling, Boston.
Pond, B. W., Boston.
Pope, Frank F., Ashby, Mass.
Porter, David R., Kansas City, Mo.
Porter, Edwin A., Pittsfield, Me.
Porter, Robert B., North Easton, Mass.
Potter, L. A., Superior, Wis.
Potter, Nathl. Bowditch, New York.
Powell, Charles F., Dayton, O.
Powers, Hale, Brookline, Mass.
Powers, J. C., Hampton, Ia.
Pratt, John, Manchester, N. H.
Pratt, Joseph H., Boston.
Preble, Robert B., Chicago.
Prosbery, Silas Dean, Taunton, Mass.
Prescott, H. L., Kennebunk Port, Maine.
Prescott, W. H., Boston.
Priestley, James Taggart, Des Moines, Ia.
Provandie, Paul H., Melrose, Mass.
Pugh, E. A., Wilmington, O.
Putnam, James W., Lyons, N. Y.
Putney, James, Charleston, W.Va.
Putt, Maurice O., Oberlin, Pa.
Quick, Tunis C., Falls Church, Va.
Radcliff, Sue, Yonkers, N. Y.
Radebaugh, John M., Pasadena, Calif.
Randall, J. A., Old Orchard, Me.
Ransom, N. M., Somerville, Mass.
Rawlings, I. Donaldson, Chicago.
Rawlins, James S., Dancyville, Tenn.
Raymond, L. H., Somerville, Mass.
Rayner, H. W., What Cheer, Ia.
Read, J. W., Newark, N. J.
Reed, Beardman, Philadelphia.
Reeser, Howard S., Reading, Pa.
Redmond, James William, South Boston, Mass.
Reilley, D. G., Dayton, O.
Renn, T. H., Chicago.
Reoch, William S., Phenix, R. I.
Reynolds, J. C., Lake Geneva, Wis.
Reynolds, J. J., Defiance, O.
Rice, Frederick W., Boston.
Rice, Wm. E., Bath, Me.
Richards, Florence Harvey, Philadelphia.
Ridpath, R. F., Philadelphia.
Riegel, Henry H., Catasauqua, Pa.
Rigg, J. E., Wilkinsburg, Pa.
Riley, W. T., Baltimore, Md.
Ristine, W. H., Crawfordsville, Ind.
Robb, Robert, Hiteman, Ia.
Robb, Winifred A. Y., Hiteman, Ia.
Robb, Wm. M., Boston.
Robbins, G. E., Chillicothe, O.
Roberts, Derring J., Nashville, Tenn.
Roberts, Ellis G., Fair Haven, Vt.
Roberts, Frederick C., Easton, Pa
Roberts, Thomas Elmer, Oak Park, Ill.
Robey, William H., Jr., Boston.
Robinson, Paul S., New Haven, Conn.
Robioson, Rienzi, Danielson, Conn.
Robinson, Wm. H., Boston.
Rochester, De Lancey, Buffalo.
Rodman, Thos. R., Scranton, Pa
Roe, J. L., Wilkesbarre, Pa.
Rogers, Frank A., Everett, Mass.
Rollins, Edwin T., Boston.
Rosenthal, M. J., Baltimore.
Roussel, Albert E., Philadelphia
Rowe, Carleton Allen, Tewksbury, Mass.
Rowe, Jesse, Abingdon, Ill.
Ruff, Elam F., Philadelphia
Rusk, John A., Gray Summit, Mo
Russell, Charles B., Boston.
Rustor, Warren D., Somerville, Mass.
Rutherford, J. E., Straight, Pa.
Salter, John C., St. Louis.
Sanborn, J. T., Portland, Me.
Sanger, Guy E., Arlington, Mass.
Sargent, George B., Lawrence, Mass.
Sargent, George W., Seneca Castle, N. Y.
Sargent, Walter L., Quincy, Mass
Saunders, Joseph, Brookline, Mass.
Savage, Chester Grant, Westerly, R. I.
Sawyer, Alton, Gardiner, Me.
Sawyer, Elihu Le Roy, Boston.
Sawyer, F. M., South Bend, Ind
Sawyer, Frank W., Hot Springs, Ariz.
Sawyer, John P., Cleveland, O
Sawyer, W. G., Madison, Wis
Scales, Jefferson, Tompkinsville, N. Y.
Schuman, O. V., Columbia City, Ind.
Schweer, T. J., Beardstown, Ill.
Scofield, Walter K., Stamford, Conn.
Scofield, Walter W., Dalton, Mass.
Scott, A. C., Cleveland, Ohio.
Scott, Joseph Allson, Philadelphia.
Scribner, Charles H., Paterson.
Searle, Frank W., Portland, Me.
Sears, Geo. G., Boston.

Sedlacek, Frederick A., Tyndall, S. D.
Selberling, Fred C., Allentown, Pa.
Selbert, W. H., Steelton, Pa.
Seiple, Samuel C., Centre Square, Pa.
Selimaling, H. Nichols, Fulton, Ill.
Sewall, Henry, Denver, Col.
Seymore, Malcolm, Boston.
Shannon, N. V., Cambridge, Mass.
Sharpe, Frank M., Brooklyn.
Sharpless, W. T., Westchester, Pa.
Shattuck, Albert M., Worcester, Mass.
Shattuck, F. C., Boston.
Sheafe, E. A., Ottumwa, Ia.
Shearer, James Y., Reading, Pa.
Shedd, Geo. H., North Conway, N. H.
Sheldon, H. W., Negaunee, Mich.
Shelly, D. W., Ambler, Pa.
Shelley, H. J., Middletown, N. Y.
Shelton, E. B., Blandville, Ky.
Shelton, Gould, A., Shelton, Conn.
Shepherd, George Rubens, Hartford, Conn.
Sherburne, Andrew E., Dorchester, Mass.
Sherman, William A., Newport, R. I.
Shields, S. S., Carbondale, Pa.
Shipps, William H., Bordentown, N. J.
Shoemaker, F., Carlisle, Pa.
Shultz, P. David, New York.
Shurtleff, Henry C., Philadelphia.
Silva, F. P., Boston.
Simmons, M. H., Orange, N. J.
Simmons, Walter C., Smith's Grove, Ky.
Simpson, E. E., Chicago.
Sippy, Bertram W., Chicago.
Slse, Lincoln F., Medford, Mass.
Sitler, W. Radcliffe, Suffern, N.Y.
Skinner, Clarence E., New Haven, Conn.
Slayton, Wm. T., Morrisville, Vt.
Sleeper, W. J., Westford, Mass.
Slingerland, I. M., Fayetteville,
Small, E. W., Tarrytown, N. Y.
Smedley, R. C., Bingham Canyon, Utah.
Smethers, Wm. H., Moline, Kas.
Smith, C. U., Baltimore.
Smith, D. G., Elizabeth, Ill.
Smith, E Franklin, New York.
Smith, Frank A., Lebanon, N. H.
Smith, F. Conger, New York.
Smith, Frank H., Hadley, Mass.
Smith, Geo. C., Boston.
Smith, Henry O., Hudson, N. H.
Smith, Howard H., Boston.
Smith, J. E., Altoona, Pa.
Smith, Maurice, Massillon, O.
Smith, R. Morton, Riverpoint, R.I.
Smyser, Charles James, Harwich, Mass.
Snipe, Langdon T., Bath, Me.
Snow, Frank W., Newburyport, Mass.
Snow, S. A., North Branch, Mich.
Solis-Cohen, Myer, Philadelphia.
Sommerfield, J. F., Atlanta, Ga.
Sowder, Chas. R., Indianapolis, Ind.
Spaulding, F. W., Clifton Springs, N. Y.
Spivak, C. D., Denver, Colo.
Spooner, John Winthrop, Hingham, Mass.
Sprague, Oliver A., Turner, Me.
Sproull, John, Haverhill, Mass.
Stabler, Lorenzo V., Thorsby, Ala.
Standly, E. D., Linneus, Mo.
Standly, Kathryn V., Brookfield, Mo.
Standly, Z. T., Laclede, Mo.
Staneff, Dembrius, Chicago.
Stanhope, A. H., Dover, Me.
Stanley, J. M., Northboro, Mass.
Stanwood, A. L., Rumford Falls, Me.
Starbuck, J. Clinton, North Easton, Mass.
Starr, Robert S., Hartford, Conn.
Start, S. G., Cambridge, Vt.
Stealy, A. R., Charlotte, Mich.
Steele, J. Dutton, Philadelphia.
Steele, R. G., Melvin, O.
Stephen, Chas. A., Helena, O.
Stetson, E. F., Damarescotta, Me.
Stetson, Frank E., New Bedford, Mass.
Stevens, Andrew J., Malden, Mass.
Stevens, Sara E., West Roxbury, Mass.
Stewart, Edith W., Hume, N. Y.
Stewart, James, Holstein, Mo.
Stickney, Whitman G., Beverly, Mass.
Stiles, Fred Merritt, Waltham, Mass.
Stimson, Charles A., Eaton Rapids, Mich.
Stimson, Edward F., Tiverton, R. I.
Stockdale, T. F., Rural Valley, Pa.
Stockton, Chas. G., Buffalo, N.Y.
Stockwell, Benj. E., St. Louis.
Stone, A. K., Boston.
Stone, Charles S., Boston.
Stone, Frank E., Lynn, Mass.
Stowe, Irving E., Medford, Mass.
Stone, Lincoln R., Newton, Mass.
Stone, Melvin T., Troy, N. H.
Stont, Harry A., Wenonah, N. J.
Stover, Chas. Amsterdam, N. Y.
Stowell, James H., Chicago.
Stratton, Ralph R., Melrose, Mass.
Straw, N. W. R., Portland, Me.
Streeter, John F., Springfield, Mass.
Stretch, James, Stafford Springs, Conn.
Strong, Lawrence W., Boston.
Strauss, U. S., Beaver, Pa.
Stuart, Frederick W., Boston.
Stuart, J. H., Minneapolis.
Stubbs, Frank Raymond, Newton, Mass.
Stubbs, Richard H., Angusta, Me.
Strickler, S. L., Bogstown, Ind.
Sturtevant, J. S., Dixfield, Mass.
Stughrue, Dennis F., Boston.
Sullivan, Claude C., Waverly, Tenn.
Sullivan, D. E., Concord, N. H.
Sullivan, J. H., Charlotte, N. Y.
Sullivan, Joseph L., Boston.
Sullivan, M. H., Newport, R. I.
Sumner, H. H., Lowell, Mass.
Suylandt, C. G., Gladwin City, Mich.
Sylven, Chas. A., Providence, R. I.
Swan, Roscoe Wesley, Worcester, Mass.
Swan, W. H., Colorado Springs, Colo.
Sweeny, H. L., Kingston, N. H.
Sweet, Albert H., Huntley, Ill.
Sweet, Chas. F., Pawtucket, R.I.
Sylvester, W. H., Natick, Mass.
Taft, Albert A., Boston.
Talley, James E., Philadelphia.
Talbot, Fritz B., Brookline, Mass.
Taliaferro, B. Lawrence, Richmond, Va.
Taussig, Arnold S., Denver, Colo.
Taylor, Frederic W., Cambridge, Mass.
Taylor, John D., Minot, N. D.
Taylor, John H., Holley, N. Y.
Taylor, Joseph, Manchester, N.H.
Taylor, Lewis C., Springfield, Ill.
Teachout, S. R., Huntingdon, Tenn.
Teller, Howard Jay, Rome, N. Y.
Temple, W. F., Boston.
Templeton, P. C. Waller, Irasburg, Vt.
Thayer, Addison Sanford, Portland, Me.
Thayer, W. S., Baltimore.
Thesing, J. H., Cincinnati.
Thomas, John D., Washington, D. C.
Thomas, Chas. E., Leesburg, Ind.
Thomason, W. P. O., Easton, Pa.
Thompson, George E., Boston.
Thornton, Wm. H., Buffalo, N.Y.
Tibbitts, N. J., Waukesha, Wis.
Tibbetts, James T., Boston.
Tilden, Irving N., Mattapoisett, Mass.
Tileston, Wilder, Boston.
Tilton, Josiah Odin, Lexington, Mass.
Timmerman, C. F., Amsterdam, N. Y.
Todd, Francis H., Paterson, N.J.
Towle, Henry C., Boston.
Tower, B. M., Conneaut, O.
Townsend, I. S., Detroit, Mich.
Toye, J. E., Charlestown, N. H.
Traver, S. N., Steelton, Pa.
Treanor, John P., Boston.
Tucker, S. Chase, Peabody, Mass.
Tucker, W. L., Hinsdale, Mass.
Tufty, Jonas M. O., Duluth, Minn.
Tupper, Augustus M., Rockport, Mass.
Tustin, Ruth, Eastport, Me.
Tuttle, Vine H., Orwell, O.
Tuttle, Charles A., New Haven, Conn.
Tyson, James, Philadelphia.
Ulyer, Jesse S., St. Louis.
Umberhine, Charles D., Lebanon, Ind.
Varney, J. R., Oldtown, Me.
Van Allen, H. W., Springfield, Mass.
Van Dyke, Arthur D., Marysville, Pa.
Van Sickle, F. L., Olyphant, Pa.
Vaughan, Jonas H., Everett, Mass.
Vaughan, I. J., Topeka, Ind.
Vickery, Herman F., Boston.
von Groll, Max C., Boston.
Voorus, C. W., Beaver Dam, Wis.
Wadsworth, John E., Skowhegan, Me.
Waite, Henry E., New York.
Wakefield, Homer, New York.
Wakelee, E. H., Big Flats, N. Y.
Walbright, G. W., Round Knob, Ill.
Waldrop, R. W., Bessemer, Ala.
Wald, Rudolf H., Boston, Mass.
Walker, Charles S., Keene, N.H.
Wallace, Arthur L., Nashua, N.H.
Wallace, Ellen A., Manchester, N. H.
Wallis, Samuel R., Miller, S. D.
Walsh, Charles J., Cambridge, Mass.
Walsh, Jas. J., New York.
Walsh, John E., Revere, Mass.
Ward, Freeman F., New York.
Ward, John P., Vevay, Ind.
Ward, R. J., Worcester, Mass.
Ward, E. L., Osceola, Pa.
Wardwell, M. A., Penobscot, Mass.
Warren, Franklin L., Bridgewater, Mass.
Warner, Robt. A., Baltimore, Md.
Wasgatt, Cecil E., Deer Isle, Me.
Watt, James L., Hackensack, N. J.
Watson, W. E., Pontiac, Mich.
Webb, Joel A., Providence, R. I.
Webber, Frederick W., Newton, Mass.
Webber, H. G., Wilbraham, Mass.
Webber, Stephen E., Calais, Me.
Webster, George W., Chicago.
Webster, I. D., Mankato, Minn.
Weld, G. Gilmore, Oldtown, Me.
Weeks, Ambrose H., Portland, Me.
Weeks, R. W., Manchester, N. H.
Weibel, E. G., Erie, Pa.
Weidman, John A., Dunkirk, N.Y.
Weidner, Calvin, Manchester, Conn.
Welch, H. E., Youngstown, O.
Welch, Stephen A., Providence, R. I.
Wells, Edward H., New York.
Wentz, B. F., Philadelphia.
Werber, Gustavus, Washington, D. C.
Weston, Harry R., Windsor, Vt.
Wetherill, Henry Emerson, Philadelphia.
Wey, H. O., Elmira, N. Y.
Whaley, Lewis, Birmingham, Ala.
Wheatland, Marcus F., Newport, R. I.
Wheeler, Harry S., Whippany, N. J.
Wheeler, J. T., Chatham, N. Y.
Whitcher, B. R., Boston.
Whitcomb, Harry H., Morristown, Pa.
White, Franklin W., Boston.
White, Marion L., Dixon, Ill.
White, Verdeil O., East Dixfield, Me.
Whitehill, George E., Everett, Mass.
Whiting, Geo. W. W., Somerville, Mass.
Whitney, Edward W., Northampton, Mass.
Whitney, H. L., Plymouth, Pa.
Whitney, Charles A., New York.
Wholey, C. C., Pittsburg, Pa.
Wightman, W. C., Wayne, Neb.
Wilder, Raymond S., Cambridge, Mass.
Wiliams, Chas. E., Houlton, Me.
Williams, John R., Rochester, N.Y.
Williams, Pearl, Providence, R. I.
Williams, R. R., Manning, Ia.
Williams, W. T., Mt. Carmel, Pa.
Williamson, Charles Spencer, Chicago.
Williamson, W. D., Portland, Me.
Willis, John L. M., Eliot, Me.
Wilmerding, Wm. E., Atlanta, Ga.
Wilson, J. C., Philadelphia, Pa.
Wilson, J. H., Beaver, Pa.
Wilson, John G., Montrose, Pa.
Wilson, J. W., Van Wert, O.
Wilson, L. D., Wheeling, W. Va.
Wilson, M. J., Warsaw, N. Y.
Wilson, R. Browning, Holbrook, Mass.
Wilson, Samuel M., Philadelphia.
Winston, Arthur L., Memphis, Tenn.
Witherington, J. B., Munford, Tenn.
Witherell, Carl H., Oakland, Me.
Witherspoon, J. A., Nashville, Tenn.
Witherstine, H. H., Rochester, Minn.
Withington, Charles F., Boston.
Wolfe, Samuel, Philadelphia.
Woods, George L., Springfield, Mass.
Woods, J. H., Brookline, Mass.
Wood, L. E., Poughkeepsie, N. Y.
Wood, Nathaniel K., Boston.
Wood, Walter H., Greeley, Colo.
Workman, Ralph A., Woodward, Okla.
Worthen, Chas. A., Lynn, Mass.
Worthen, Eugene M., Ashland, N. H.
Woodhull, J. B., North Bennington, Vt.
Woodman, Milton S., West Lebanon, N. H.
Woodruff, R. A., Pittsfield, Mass.
Woodside, Albert, Rockland, Me.
Worthington, Arthur Morton, Dedham, Mass.
Woodyard, S. W., Greeneville, Tenn.
Wright, Samuel St. J., Akron, O.
Wright, Winfred J., Duncannon, Pa.
Wyman, M., Boston, Ind.
Wyer, H. G., Kirkwood, Mo.
Yeager, Geo. C., Philadelphia.
Yoosuf, A. K., Worcester, Mass.
Young, John Franklin, Newburyport, Mass.
Young, L. J., Haverhill, Mass.
Young, Ralph R., Boston.
Young, W. M., Dallas, Tex.
Zapffe, Fred C., Chicago.
Zimmerman, H. A., Youngstown, Ohio.
Zimmermann, J. S., Youngstown, Ohio.

Section on Obstetrics and Diseases of Women.

Allen, M. May, Rochester, N. Y.
Allen, Clarence J., Winchester, Mass.
Altman, John T., Nashville, Tenn.
Andrews, Frank T., Chicago, Ill.
Anderson, Alexander L., Brooklyn, N. Y.
Asdale, Jos. W., Pittsburg, Pa.
Baker, C. D., Rohrersville, Md.
Backstrom, James L., Water Valley, Miss.
Bacon, Charles S., Chicago.
Baer, J. S., Camden, N. J.
Barrell, Charles Sewall, Boston.
Barrett, Channing W., Chicago.
Bartlett, C. W., Bennington, Vt.
Beer, Wm. F., Salt Lake, Utah.
Beaban, Albert L., Canandaigua, N. Y.
Bellville, Frank, Delaware City.
Berndt Daniel Albert, Portsmouth, Ohio.
Black, Laura M., Saco, Maine.
Blanchard, O. R., Jersey City.
Bliss, F. E., Warsaw, N. Y.
Boardman, William Elbridge, Boston.
Boldt, H. J., New York.
Bond, W. L., Somerville, Mass.
Bonlfield, C. L., Cincinnati, O.
Boswell, Charles J., Mounds, Ill.
Boyd, G. M., Philadelphia, Pa.
Bowman, John W., Lemoyne, Pa.
Bolster, A. S., Worcester, Mass.
Boyée, J. Wesley, Washington, D. C.
Burch, L. E., Nashville, Tenn.
Butz, R. E., York, Pa.
Buzzell, C. P., Conway, N. H.
Burrage, Walter L., Boston.
Bremmer, H. A., Ashton, Ill.
Briggs, Henry W., Wilmington, Del.
Broadrup, Geo. L., Cumberland, Md.
Brinkman, Geo. H., Sidney, N. Y.
Breitting, Joseph C., Lunenburg, Vt.

Bryan, Wm., West New Brighton, N. Y.
Bray, Chas. W., Portland, Me.
Bryson, Adelbert A., Fall River, Mass.
Cannaday, John E., Paint Creek, W. Va.
Carstens, J. H., Detroit, Mich.
Carver, R. H., Providence, R. I.
Churchill, John Darling, Plymouth, Mass.
Clark, John G., Philadelphia.
Clark, O. H., Kalamazoo, Mich.
Clark, S. M. D., New Orleans, La.
Claggett, L. S., Blairsville, Pa.
Connor, J. W. O., Biddeford, Me.
Cone, Dwight E., Fall River, Mass.
Collier, E. L., Roscoe, Pa.
Cullen, B. L., Jackson, Miss.
Craig, Daniel H., Boston.
Crowell, Samuel, Boston.
Crowell, H. C., Kansas City, Mo.
Davis, Bessie D., Cambridge, Mass.
Downs, A. A., Fairfield, Maine.
Davis, Effa V., Chicago.
Davis, J. D. L., Birmingham, Ala.
Davis, Ella M., Holyoke, Mass.
Davis, James C., Rochester, N. Y.
Darling, Chas. B., Boston.
Davenport, Francis H., Boston.
Davenport, James H., Providence, R. I.
Darnall, Wm. Edgar, Atlantic City, N. J.
Davis, Stephen R., Lynn, Mass.
De Vries, J. Carlisle, Brooklyn, N. Y.
Denning, Edward J., So. Boston.
Dearborn, Sam S., Nashua, N. H.
Dickes, John T., Portland, Ind.
Doane, Harriet M., Fulton, N. Y.
Dodge, Wm. E., Chicago.
Donoghue, Francis D., Boston.
Dorsett, Walter B., St. Louis.
Dorsey, F. B., Keokuk, Iowa.
Dudley, E. C., Chicago.
Dunning, Mary E., Newburgh, N. Y.
Dwyer, John E., Cambridge, Mass.
Earnest, John G., Atlanta, Ga.
Evans, F. W., Coös, N. H.
Evans, George B., Dayton, Ohio.
Fair, Robert P., Boston.
Ferrin, Carlisle Franklin, New London, Conn.
Fithian, J. W., Camden, N. J.
Fleming, Arthur Bowles, Tamaqua, Pa.
Flood, J. C. M., Steubenville, Ohio.
Forster, Davis, St. Louis.
Fort, R. E., Nashville, Tenn.
Fraser, J. C., Weymouth, Mass.
Frederick, C. C., Buffalo, N. Y.
Gageby, Lenore H., New Castle, Pa.
Gallant, A. Ernest, New York.
Garceau, Edgar, Boston.
Gardner, William S., Baltimore, Md.
Garrabrant, C., Atlantic City, N. J.
Gaston, Ida E., Philadelphia.
Gay, Herbert S., Boston.
Gillispie, G. B., Covington, Tenn.
Gledhill, Henry R., Jerseyville, Ill.
Glidden, C. H., Little Falls, N. Y.
Goelet, Augustin H., New York.
Goldthwaite, Seth Y., Boston.
Gordon, Seth C., Portland, Me.
Guertin, Auguste, Nashua, N. H.
Guthrie, W. A., Franklin, Ky.
Grad, Hermand, New York.
Groff, Charles E., Detroit.
Grant, W. H., Boston.
Graves, W. P., Boston.
Greeley, Jas. T., Nashua, N. H.
Green, Charles Montraville, Boston.
Hafford, Geo. C., Albion, Mich.
Hagen Ducker, G. L., Boston.
Hale, Willis L., North Attleboro, Mass.
Hall, C. Lester, Kansas City, Mo.
Hamilton, Annie Lee, Boston
Hammond, Joshua S., Butte.
Hardenbergh, Daniel B., Middletown, N. Y.
Hargrave, E. T., Norfolk, Va.
Harris, Philander A., Paterson, N. J.
Hare, Charles Henry, Boston.
Hartung, Henry, Chicago.
Hastings, Charles J., Toronto, Ont.
Henkel, Louis B., Jr., Annapolis, Md.
Hetrick, David Joseph, Harrisburg, Pa.
Healy, T. R., Newburyport, Mass.
Henry, W. O., Omaha, Neb.
Hicks, I. F., Dunn, N. C.
Higgins, Charles W., Providence, R. I.
Hill, Laura, Willimantic, Conn.
Harper, Frances A., Pittsburg, Kan.
Hubbard, H. V., Barnard, Vt.
Hunniston, Wm. H., Cleveland, O.
Humphrey, John F., Saratoga, N. Y.
Hutchinson, C. M., Waltham, Mass.
Hunt, Ernest L., Worcester, Hunner, Guy L., Baltimore.
Hyde, Harriet Baker, Greenwich, Conn.
Jack, Harvey P., Canisteo, N. Y.
Jamieson, Robert, A., Detroit, Mich.
Jarvis, Leonard, Claremont, N. H.
Jefferson, H. P., Boston, Mass.
Jacobus, Arthur M., New York.
Johnston, J. Ambrose, Cincinnati, Ohio.
Jones, C. C., Comfort, Texas.
Jones, Mary Scott, Boston.
Kaan, Geo. W., Boston.
Kelly, H. A., Baltimore.
Kelly, J. Thomas, Washington, D. C.
Kerrigan, John J., Michigan City, Ind.
Kidder, F. T., Woodstock, Vt.
Kieffer, A. R., St. Louis.
Kight, R. S., Norfolk, Va.
Konikow, Moses J., Boston.
Krum, Astley G., Erie, Pa.
Landry, G. E., Oldtown, Maine
Lanoie, J. E., Fall River, Mass.
Lanouette, J. E. A., Manchester, N. H.
Lee, W. George, Chicago.
Leonard, Milton H., New Bedford, Mass.
Lipes, H. Judson, Albany, N. Y.
Litzenberg, Jennings, C., Minneapolis, Minn.
Locke, Eva M., Nashua, N. H.
Lowder, Lillian Crockett, Bloomington, Ind.
Longenecker, Christian B., Philadelphia.
Longaker, Daniel, Philadelphia.
Loomis, E. E., Janesville, Wis.
MacCormick, John A., Boston.
MacVoy, Wm. E., Brookline, Mass.
Mac Leod, W. P., New York.
Manchester, Hiram B., Batavia, N. Y.
Manton, W. P., Detroit, Mich.
Mann, Fred W., Houlton, Me.
Marcy, Henry O., Boston.
Martin, Franklin H., Chicago.
Marvell, Mary W., Fall River, Mass.
Mastin, N. W., Wellsboro, Pa.
Mason, E. H., Brewton, Ala.
Mason, Nathaniel R., Boston.
Massey, G. Betton, Philadelphia.
Mayberry, E. N., So. Weymouth, Mass.
McAlexander, R. O., Indianapolis, Ind.
McBean, J. C., Applegate, Mich.
McKee, E. S., Cincinnati, Ohio.
McMurtry, Lewis S., Louisville, Ky.
McPherson, George E., Attleboro, Mass.
McSweeney, J. E., Barre, Vt.
Monash, David F., Chicago.
Miller, Aaron B., Syracuse, N. Y.
Miller, Vesta Delphene, Needham, Mass.
Mills, Henry M. Brooklyn, N. Y.
Montgomery, E. E., Philadelphia.
Montgomery, E. S., Pittsburg, Pa.
Moore, Albertus Adair, New York.
Munday, Bert, New York.
Murphy, Edward M., Lowell, Mass.
Murray, Grace P., New York.
Nason, Osmon, Cleander Baker, Medway, Mass.
Nason Inez Ford, Dover, N. H.
Nelson, Daniel T., Chicago.
Newell, Franklin S., Boston.
Newman, H. R., Chicago.
Nichols, John W., Farmington, Me.
Nielson, E. B., Boston.
Noble, Charles P., Philadelphia
Noble Thomas B., Indianapolis, Ind.
Norris, George P., Boston.
O'Neill, F. D., Biddeford, Me
Owen, A. B. Chicago.
Paddock, Chas. E., Chicago.
Palmer, H. D., Farmington, Me
Paine, A. K., Boston.
Pantzer, Hugo, O., Indianapolis.
Parmeter, Rolland L., Detroit.
Parmelee, William J., Worthington, Mass.
Parsons, Mary, Washington, D. C.
Perry, Alexander, Jr., Nashville.
Peterson, Reuben, Ann Arbor, Mich.
Pitts, Herman C., Providence.
Platt, Joseph S., Port Huron, Mich.
Polk, W. M., New York.
Potter, William Warren, Buffalo.
Poucher, J. Wilson, Poughkeepsie, N. Y.
Price, Anselm D., Harrodsburg, Ky.
Putney, Geo. E., Paynesville, Mass.
Rafferty, T. N., Robinson, Ill.
Read, Flora A., Fond du Lac, Wis.
Reddick, James T., Paducah, Ky.
Redfield, Charles I., Middletown, N. Y.
Reese, Frank D., Cortland, N. Y.
Reeks, T. Elm., New Britain, Conn.
Regar, Horace K., Philadelphia.
Reynolds, Edward, Boston.
Ries, Emil, Chicago.
Riley, Elizabeth A., Boston.
Ritter, Ella N., Williamsport, Pa.
Roberts, Ena B., Minneapolis.
Robinson, J. F., Manchester, N.H.
Rothrock, J. L., St. Paul.
Royster, Hubert A., Raleigh, N.C.
Russell, Julia W., Concord, N. H.
Sampson, John A., Albany, N. Y.
Saunders, Chas. A., Norfolk, Va.
Scherck, Henry J., St. Louis, Mo.
Schumann, Edward A., Philadelphia.
Scott, Wm. F., Port Washington, Wis.
Scroggs, J. A., Keokuk, Iowa.
Scull, Wm. B., Philadelphia.
Shanahan, T. J., Brookline, Mass.
Shoemaker, Geo. Erety, Philadelphia.
Sibinck, Abram L., Ashland, Ohio.
Simmons, Hannah C., Worcester, Mass.
Simpson, F. F., Pittsburg.
Skeel, R. E., Cleveland.
Skinner, W. F., Chambersburg, Pa.
Smith, A. W., Scranton, Pa.
Smouse, D. W., Des Moines, Ia.
Somers, John E., Cambridge, Mass.
Springer, Millard, Wilmington, Del.
Starbird, Edw. P., Boston.
Strauss, S., New York.
Strobell, C. W., Rutland, Vt.
Strohbehn, Edw. F., Davenport, Iowa.
Stone, Alexander J., St. Paul.
Storer, Malcolm, Boston.
Sullivan, Walter G., Providence.
Swain, Howard T., Boston.
Symonds, Alice G., Haverhill, Mass.
Tallant, Alice Weld, Philadelphia.
Tallman, Augustus L., Boston.
Taussig, Frederick J., St. Louis.
Templeton, J. M., Cary, N. C.
Thompson, John F., Portland, Me.
Thornes, George E., Port Chester, N. Y.
Tirrell, W. M., South Weymouth, Mass.
Tolson, F. R., Lafayette, La.
Tompkins, Christopher, Richmond, Va.
Topaz, Anna, Boston.
Torbert, James R., Boston.
Traves, William H., Jr. Boston.
Twitchell, Edward T., Boston.
Twombly, Edward L., Boston.
Vose, Robert H., Boston.
Wadsworth, Richard G., Boston.
Waldo, Ralph, New York.
Walton, William J., Dorchester, Mass.
Warren, Stanley P., Portland, Me.
Warne, R. C., Mitchell, S. D.
Washburn, George Hamlin, Boston.
Watkins, I. L., Montgomery, Ala.
Watson, Frank G., Boston.
Weiss, Edward A., Pittsburg.
Wheet, Fred E., Rumford Falls, Me.
Whiteaker, Hall, Mound City, Ill.
Whitman, Luther Oakes, Boston.
Whiton, Ross K., Quincy, Mass.
Will, O. B., Peoria, Ill.
Willard, L. E., Saco, Me.
Willington, Alfreda B., Pittsfield, Mass.
Willien, Leon J., Terre Haute, Ind.
Wilkins, A. M., So. Framingham, Mass.
Williams, C. E., Auburn, Me.
Wolcott, Grace, Boston.
Worcester, Alfred, Waltham, Mass
Yales, H. Wellington, Detroit.
Young, John Van Doern, New York.
Young, Roy D., Arlington, Mass.

Section on Surgery and Anatomy.

Abbott, C. S. Laconia, N. H.
Abbott, Edville G., Portland, Me.
Adams, Z. B., Boston.
Adams, Chancey, Concord, N. H.
Adler, Lewis A., Jr., Philadelphia.
Agnew, Fred F., Independence, Iowa.
Allaben, John E., Rockford, Ill.
Allen, Freeman, Boston.
Allen, John M., St. Johnsbury, Vt.
Allen, Lee G., Litchfield, Ill.
Allen, Lyman, Burlington, Vt.
Anderson, Albert, Wilson, N. C.
Anderson, A., New Britain, Conn.
Anderson, Jas., Salem, Ohio.
Andrews, John Lyman, New York.
Andrews, E. Wyllys, Chicago.
Applegate, W. A., Washington, D. C.
Arms, C. M., Williamsport, Pa.
Arzt, P. G., Balfour, N. D.
Ashhurst, Astley R. C., Philadelphia.
Atherton, Ella Blaylock, Nashua, N. H.
Averill, Geo. G., Cambridge, Mass
Ayres, Douglas, Fort Plain, N. Y.
Ayer, James C., New York
Ayres, Winfield, New York.
Babcock, W. Wayne, Philadelphia
Bacon, Wm. F., York Pa
Bacon, Theodore S., Springfield, Mass
Bacon, Leonard Woolsey, Jr., New Haven, Conn
Bain, Frank D., Kenton, Ohio.
Balch, F. G. Boston.
Baker, Chester Monroe, Hyannis, Mass
Baker A. C., Fergus Falls, Minn
Baldwin, S. C., Salt Lake City.
Ballard, W. R., Bay City, Mich.
Ballard, John T., New Bedford, Mass.
Barker, Adoniram J., Columbus, Ind.
Barkley, A. H., Lexington, Ky.
Barney, J. Dellinger, Boston.
Barnhill, James U., Columbus, O.
Barth, Louis, Grand Rapids, Mich.
Barrett, M. F., Brockton, Mass
Bartlett, Willard, St. Louis.
Batchelor, W. A., Milwaukee.
Beckley, C. C., Lancaster, Mass
Beech, Sylvester L., Boston.
Beach, William M., Pittsburg, Pa.
Beal, Howard W., Worcester, Mass.
Beckett, Francis H., Fall River, Mass.
Beebe, Theo. Chapin, Jr., Boston.
Bell, Charles W., Strong, Maine.
Bell, Robert E., Lowell, Mass.
Bell, G. F., Williamsport, Pa.
Belty, J. W., Hartford, Conn.
Benjamin, Arthur E., Minneapolis, Minn.
Bennet, Eben H., Lubec, Maine
Bennett, Wm. H., Hyde Park, Mass.
Bentley, Edwin, Little Rock.
Bertelin, John B., South Bend, Ind.
Bevan, Arthur D., Chicago.
Biggs, M. H., Philadelphia.
Binnie, J. F., Kansas City, Mo.
Binney, Robert W. Granite, Ill.
Bishop, William Thomas, Harrisburg, Pa.
Bisland, A. O., Mankato, Minn.
Black, R. D., Las Vegas, N. M
Black, Wm. T., Memphis, Tenn
Blake, J. B., Boston.
Blake, Jno. D., Baltimore
Blair, George K., Salem, Mass

Ir, J. E., Burlington, N. J.
isdell, Frank, Goffstown, N. H.
isucci, Ernesto, New York.
nwell, G. F., Nyack, N. Y.
ck, Jacob, Kansas City, Mo.
atwell, H. T., Manchester, N. H.
lles, William P., Boston.
ttomley, John T., Boston.
tsford, Mary E., San Francisco, Cal.
okwalter, H., Columbiana, O.
sher, Lewis C., Richmond, Va.
ncher, J. B., Hartford, Conn.
owers, Walter P., Clinton, Mass.
yce, D. C., Allegheny, Pa.
ackett, Elliott G., Boston.
adbury, Bial, E., Norway, Me.
adley, Newel R., Saginaw, Mich.
randon, John W., Clarksville, Tenn.
radshaw, John H., Orange, N. J.
ranson, Laura H., Iowa City, Ia.
rant, Austin C., Canton, Ohio.
rant, Edmund D., Canton, Ohio.
reed, Nathaniel P., Lyan, Mass.
rennan, J. J., Scranton, Pa.
rennecke, H. A., Aurora, Ill.
renneman, Richard E., Pittsburg, Pa.
rewster, George W. W., Boston.
ridge, W. C., Elgin, Ill.
riggs, Frederic M., Boston.
riggs, Charles Edwin, Cleveland, Ohio.
rinkman, Leon, Philadelphia.
ristow, Algernon Thomas, Brooklyn, N. Y.
Brooks, A. L., Audubon, Iowa.
Brooks, W. A., Jr., Boston.
Brown, Alphonso B., Newburyport, Mass.
Brown, B. J., Jr., Providence, R. I.
Brown, C. T., Waverly, Iowa.
Brown, Daniel J., Springfield, Mass.
Brown, Edward W., Northampton, Mass.
Brown, E. M., Chicago.
Brown, James S., Manchester, N. H.
Brown, John F., Waupun, Wis.
Brown, J. Edmund, Providence, R. I.
Brown, Martin M., North Adams, Mass.
Bruce, William Wallace, Casey, Ill.
Bryant, Joseph D., New York.
Bryant, J. F., Haverhill, Mass.
Bryant, J. F. Otis, Chester, Pa.
Bryant, Robert C., Richmond, Va.
Bryner, W. A., Nashville, Tenn.
Bryner, J. H., Ickesburg, Pa.
Buck, A. W., Fall River, Mass.
Buechner, W. H., Youngstown, O.
Bull, William T., New York.
Bull, H. R., Grand Junction, Colo.
Bunce, Philip E., Hartford, Conn.
Burnham, J. Forrest, Lawrence, Mass.
Burge, A. J., Iowa City City, Ia.
Burrell, H. L., Boston, Mass.
Burn, James W., West Union, O.
Butler, Joel I., Springfield, Mass.
Butterfield, F. A., Lawrence, Mich.
Buxton, Jos. T., Newport News, Va.
Cabot, Hugh, Boston.
Cain, W. G., Epping, N. H.
Caldwell, H. E., Blossburg, Pa.
Calkins, Irving R., Springfield, Mass.
Campbell, O. Beverly, St. Joseph, Mo.
Campbell, O. B., Ovid, Mich.
Campbell, James, Elgin, Ill.
Campbell, R. F., Watertown, S. D.
Campbell, William Francis, Brooklyn, N. Y.
Canedy, C. F., Greenfield, Mass.
Caulfield, P. E., Woburn, Mass.
Casper, Mich., Louisville, Ky.
Castle, Frank E., Waterbury, Conn.
Chandler, A. W., Compton, Ill.
Chandler, Fremont E., Chicago.
Chandler, Wm. J., South Orange, N. J.
Chase, Henry M., Boston.
Chassaignac, Chas., New Orleans, La.
Chandler, C. F., Montpelier, Vt.
Cheever, David, Boston.
Cheever, David W., Boston.
Cheever, W. R., Kenosha, Wis.
Choate, Horace H., Gloucester, Mass.
Chapman, G. A., Glens Falls, N. Y.
Chrisbeau, H. M., Philadelphia.
Churchill, Donald, Providence.
Clark, E. D., Indianapolis, Ind.
Clark, Edward R., Castleton, Vt.
Clark, Geo. O., Boston.
Clarke, Louis H., Holyoke, Mass.
Claybrook, E. B., Cumberland, Md.
Claydon, L. E., Red Wing, Minn.
Clayland, J. M., New York.
Clemons, E. Jay, Aberdeen, S. D.
Clinton, Fred S., Tulsa, I. T.
Claggett, F. P., Newport, N. H.
Clopton, Malvern D., St. Louis.
Coburn, Fordyce, Lowell, Mass.
Cochems, F. N., Salida, Colo.
Codman, Ernest Amory, Boston.
Coggswell, Samuel J., West Derry, N. H.
Colan, Francis W., Leominster, Mass.
Coley, William B., New York.
Collins, Clifford U., Peoria, Ill.
Colt, John D., Litchfield, Ill.
Combs, Clarendon J., Oshkosh, Wis.
Combs, Geo. W., Indianapolis, Ind.
Compton, W. W., Bessemer, Ala.
Comstock, G. F., Saratoga Springs, N. Y.
Connelly, Daniel, Kingston, N. Y.
Connell, F. Gregory, Salida, Colo.
Conner, H. L., Haverhill, Mass.
Counell, J. P., Pond du Lac, Wis.
Conner, Wilson C., Middletown, N. Y.
Conant, William M., Boston.
Cooke, A. B., Nashville, Tenn.
Cook, Joseph E., Cleveland, O.
Cook, L. H., Bluffton, Ind.
Coolidge, J. W., Bristol, N. H.
Coolidge, Frederic S., Pittsfield, Mass.
Coombs, Geo. H., Waldoboro, Me.
Coover, Frederick W., Harrisburg, Pa.
Cooney, H. C., Princeton, Minn.
Cooper, O. O., Hinton, W. Va.
Cordier, A. H., Kansas City, Mo.
Cottis, Geo. W., Batavia, N. Y.
Cotton, F. J., Boston.
Cones, William Pearce, Boston.
Cousins, W. L., Portland, Me.
Cowden, C. N., Fayetteville, Tenn.
Cown, C. E., Battle Creek, Iowa.
Cox, W. C., Everitt, Wash.
Cragin, D. B., Waterville, Maine.
Crile, George, Cleveland, Ohio.
Crisler, J. A., Memphis, Tenn.
Crosby, Walter T., Manchester, N. H.
Crain, M. K., Rutland, Vt.
Crowell, W. H., Wilmington, N. C.
Collins, Richard, Waltham, Mass.
Cunningham, Thomas M., Marquette, Mich.
Cunningham, W. M., Corona, Ala.
Cunningham, J. H., Jr., Boston.
Cummin, John W., Boston.
Cummins, J. P. J., Ticonderoga, N. Y.
Crispin, Antonio M., New York.
Cushman, B. G. W., Auburn, Me.
Cutler, Charles N., Chelsea, Mass.
Cushing, Harvey, Baltimore, Md.
Cutter, Arthur H., Lawrence, Mass.
Cutts, William B., Providence, R. I.
Daly, T. J., Lawrence, Mass.
Daly, Victor M., Pontiac, Ill.
Darrow, Daniel C., Moorhead, Minn.
Darrow, Edward M., Fargo, N. D.
Darrington, John, Yazoo City, Miss.
Day, F. M., Eugene, Ore.
Day, Hilbert Francis, Boston.
Daugherty, Charles A., South Bend, Ind.
Davis, Byron B., Omaha, Neb.
Davis, O. C. S., Augusta, Maine.
Davis, Lincoln, Boston.
Dawbarn, Robert H. M., New York.
Dean, Willis W., Sioux City, Ia.
Dearing, Henry L., Braintree, Mass.
Deaver, John B., Philadelphia.
De Garmo, W. B., New York.
De Normandie, R. L., Boston.
Delancy, William E., Slate Run, Pa.
Dennis, Bernard F., Niagara Falls, N. Y.
Dennis, Frederic S., New York.
Dennett, Daniel C., Winchester, Mass.
Dentsch, Wm. S., St. Louis.
Dillard, John W., Lynchburg, Va.
Disque, T. L., Pittsburg, Pa.
Dixon, Charles H., St. Louis.
Dixon, Archibald, Henderson, Ky.
Doane, Philip S., Chicago.
Dodd, J. I. F., Pittsfield, Mass.
Doege, Karl, Marshfield, Wis.
Doern, W. G., Milwaukee, Wis.
Doliff, Albert S., New Hampton, N. H.
Donnelly, James, Toledo, Ohio.
Dorr, E. E., Des Moines, Iowa.
Downey, J. H., Gainesville, Ga.
Drake, George S., St. Louis.
Drieshach, F. R., Dansville, N. Y.
Dudley, Augustus W., Cambridge, Mass.
Duncan, M. J., Dallas, Tex.
Dunlap, W. O., Sedalia, Mo.
Dunlap, Elbert, Dallas, Tex.
Dunn, J. B., St. Cloud, Minn.
Dunsmoor, F. A., Minneapolis, Minn.
Durant, Charles Edwin, Haverhill, Mass.
Dwight, Thomas, Nahant, Mass.
Dye, Frank Hazzard, Philadelphia.
Earl, Robert O., St. Paul, Minn.
Eastman, E. B., Portsmouth, N. H.
Eastman, Joseph Rhees, Indianapolis, Ind.
Edwards, Frank H., Evanston.
Ehrmann, Fred J. E., Chicago.
Eisendrath, Daniel N., Chicago.
Eisenberg, Philip Y., Norristown, Pa.
Eitel, George G., Minneapolis, Minn.
Eklund, J. J., Duluth, Minn.
Elam, W. T., St. Joseph, Mo.
Elmer, M. K., Bridgeton, N. J.
Elsberg, Charles A., New York.
Elsner, Simon L., Rochester, N. Y.
Emerson, George Edward, Boston.
Emerson, Kendall, Worcester, Mass.
Ensworth, Wm. H., East Boston.
Eschbach, H. C., Albia, Iowa.
Estes, W. L., South Bethlehem, Pa.
Eve, Duncan, Nashville, Tenn.
Everett, A. G., Friar's Point, Miss.
Fairchild, D. S., Clinton, Iowa.
Fairfield, W. J., Anderson, Ind.
Fall, C. P., Beatrice, Neb.
Faulkner, W. E., Boston.
Fell, Alexander G., Wilkesbarre, Pa.
Ferguson, Alexander Hugh, Chicago.
Ferguson, E. D., Troy, N. Y.
Ferguson, Robert Henry, Boston.
Fetherolf, F. A., Allentown, Pa.
Field, James B., Lowell, Mass.
Fields, D. B., Weaverville, Cal.
Fields, E. T., Ensley, Ala.
Filkins, Silas L., Albany, N. Y.
Finney, John M. T., Baltimore.
Fitz, G. W., Boston.
Fitzgibbon, T., Milwaukee, Wis.
Finn, Frederic A., Jersey City, N. J.
Flagg, Elisha, Boston.
Flanagan, Wm. F., Providence, R. I.
Fleming, J. C., Elkhart, Ind.
Fletcher, M. H., Asheville, N. C.
Flynn, Edward H., Marquette, Mich.
Forman, A. C., Bayonne, N. J.
Fox, F. E., Fulton, N. Y.
Franklin, Melvin M., Philadelphia.
Fraenenthal, Henry W., New York.
Freeman, Leonard, Denver, Colo.
Freiberg, Albert H., Cincinnati, Ohio.
Frey, E. W., Trenton, Ky.
Frick, W. J., Kansas City, Mo.
Fuller, D. E., Hastings, Mich.
Fuller, Edwin M., Bath, Maine.
Fuller, Eugene, New York.
Fulton, Z. M. K., Philadelphia.
Funk, C. C., Smith Center, Kan.
Gabler, G. L., Holyoke, Mass.
Gafford, C. C., Wymore, Neb.
Gage, Homer, Worcester, Mass.
Gage, J. Arthur, Lowell, Mass.
Gaie, J. A., Roanoke, Va.
Gant, Samuel G., New York.
Gardner, Fletcher, Bloomington, Ind.
Gardner, H. D., Scranton, Pa.
Garcelon, R., Lewiston, Maine.
Gaub, O. C., Pittsburg, Pa.
Gay, C. Bertram, Fitchburg, Mass.
Gay, George W., Boston, Mass.
Gay, Warren T., Boston, Mass.
George, Arthur P., Haverhill, Mass.
Germain, Harry H., Boston.
Gerrish, Frederic Henry, Portland, Maine.
Gibney, V. P., New York.
Gibby, Herbert B., Pittston, Pa.
Giddings, W. J., Gardiner, Me.
Gile, John M., Hanover, N. H.
Gillette, L. M., Battle Creek.
Gilman, Charles S., Boston.
Gilpatrick, R. H., Boston.
Gleason, J. H., Manchester, N. H
Glover, John J., Stuyvesant Falls, N. Y.
Goddard, Samuel Warren, Brockton, Mass.
Goodridge, Frederick J., Cambridge, Mass.
Godfrey, Joseph, Lancaster, Wis.
Goldstein, David D., New York.
Goldthwait, Joel E., Boston.
Goodhue, M. D., Dayton, Ohio.
Goodwin, James J., Clinton, Mass.
Goodhue, George, Dayton, Ohio.
Godfrey, Andrew, Ambler, Pa.
Gordon, W. Frank, Danbury, Conn.
Gordon, S. M., Fall River, Mass.
Graefe, Charles, Sandusky, O.
Graham, Alois B., Indianapolis, Ind.
Graham, David W., Chicago.
Grant, J. C., Lina, Wis.
Grant, W. W., Denver, Colo.
Graves, Robert J., Concord, N. H.
Gray, G. H., Lynn, Mass.
Gray, Frank D., Jersey City, N. J.
Greenough, Robert B., Boston.
Gregg, W. T. S., Calumet, Mich.
Green, Frederick R., Chicago.
Green, George Willard, Chicago.
Green, James S., Elizabeth, N. J.
Grier, Edgar B., Elizabeth, N. J.
Gudden, B. C., Oshkosh, Wis.
Guillet, Noel E., Manchester, N. H.
Guiteras, Ramon, New York.
Guthrie, Geo. W., Wilkesbarre, Pa.
Gummer, A. G., Buffalo, N. Y.
Gwyer, Frederick, New York.
Haecker, L. E., Hampton, Iowa.
Haggard, W. D., Nashville, Tenn.
Hagner, Francis R., Washington, D. C.
Haines, W. D., Cincinnati, Ohio.
Halderman, Stephen, Portsmouth, Ohio.
Hall, J. B., Jr., Boston.
Hall, J. C., Anguilla, Miss.
Hall, Nelson Read, Warren, R. I.
Hallett, Edward B., Gloucester, Mass.
Halsted, William S., Baltimore, Md.
Hamilton, J. W., Mt. Vernon, Ill.
Hancock, John C., Dubuque, Ia.
Hardon, Robert Wallace, Chicago.
Harrington, T. F., Milwaukee, Wis.
Harriman, A. H., Laconia, N. H.
Harriman, C. H., Whitinsville, Mass.
Harrington, Frances M., Providence, R. I.
Harris, Chas. H., Ft. Worth, Tex.
Harris, M. L., Chicago.
Hartshorn, Willis E., New Haven, Conn.
Hartwell, John B., Boston, Mass.
Haskell, Alfred William, Portland, Maine.
Hatch, Edward S., New Orleans, La.
Hatch, Leonard F., Lynn, Mass.
Hawkes, Charles E., Providence, R. I.
Hawley, D. C., Burlington, Vt.
Haydeo, A. M., Evansville, Ind.
Hayes, D. J., Milwaukee, Wis.
Hayman, Abe, Brooklyn, N. Y.
Haywood, J. Robert, Piqua, O.
Hazard, George L., Hollis, N. H.
Hazelton, George W., Haverhill, N. H.
Hazelton, William F., Billow Falls, Vt.

Hazzard, Thomas L., Allegheny, Pa.
Hearst, W. L., Cedar Falls, Ia.
Heffenger, Arthur C., Portsmouth, N. H.
Heffner, O. C., Pottstown, Pa.
Heldner, G. A., West Bend, Wis.
Helm, A. C., Beloit, Wis.
Helm, Walter B., Rockford, Ill.
Hendershot, Byron C., New Philadelphia, Ohio.
Hendricks, W. H., Tifton, Ga.
Hendon, George A., Louisville, Ky.
Henry, James E. L., Providence, R. I.
Hertzberg, G. R. R., Stamford, Conn.
Hetherington, William, Jersey City, N. J.
Hickey, James E., Springfield, Mass.
Hiett, G. W., Pittsburg, Pa.
Higgens, Frank A., Boston.
Hill, C. D., Jersey City, N. J.
Hill, J. W., South Bend, Ind.
Hill, F. C., Boston.
Hills, Louis L., Westbrook, Me.
Hills, T. Morton, Willimantic, Conn.
Hinchliffe, Frederick, Lowell, Mass.
Hirschman, Louis J., Detroit, Mich.
Holland, R. A., Calais, Maine.
Hollingsworth, Arthur, Providence, R. I.
Hollowbush, J. R., Rock Island, Ill.
Holman, Carl J., Mankato, Minn.
Holmes, Bayard, Chicago.
Holtzclaw, C., Chattanooga, Tenn.
Holyoke, Frank, Holyoke, Mass.
Homans, John, Boston.
Horner, M. W., Mt. Pleasant, Pa.
Hoover, T. N., Boonville, Ind.
Hopkins, Thos. A., St. Louis.
Horsley, J. Shelton, Richmond, Va.
Hough, Garry de N., New Bedford, Mass.
Houghton, E. F., Tilton, N. H.
Houghton, Montafix W., Providence, R. I.
House, A. F., Cleveland, Ohio.
Howard, Jos. E., Lawrence, Mass.
Howe, H. G., Hartford, Conn.
Howe, Walter C., Boston.
Hoye, Henry J., Providence, R. I.
Hubbard, Frank A., Taunton, Mass.
Hubbard, J. C., Boston.
Hubert, R. I., St. Cloud, Minn.
Hughes, J. P., Walnut Ridge, Ark.
Hughes, W. E., Pocahontas, Ark.
Humiston, Chas. E., Chicago.
Hunt, G. P., Pittsfield, Mass.
Hunt, W. J., Glens Falls, N. Y.
Jack, Ernest S., Melrose, Mass.
Jackson, Albert P., Oakfield, N. Y.
Jackson, Frank H., Houlton, Me.
Jackson, Ralph W., Fall River, Mass.
Jackson, Jabez N., Kansas City, Mo.
Jackson, W. D., Lowell, Mass.
James, T. A., Ashley, Pa.
Jayne, Walter A., Denver, Colo.
Jepson, William, Sioux City, Ia.
Jerome, Joseph N., Evansville, Ind.
John, D. St., Hackensack, N. J.
John, J. S., Bloomsburg, Pa.
Jonas, A. F., Omaha, Neb.
Jones, Daniel Fiske, Boston.
Jones, David N., Gaylord, Minn.
Johnston, George Ben, Richmond, Va.
Johnson, M. M., Hartford, Conn.
Johnson, W. D., Batavia, N. Y.
Jopson, John H., Philadelphia.
Keefe, John W., Providence, R. I.
Keller, Lester, Ironton, Ohio.
Kelly, W. D., St. Paul, Minn.
Kelly, James A., Philadelphia.
Kelly, J. G., Hornellsville, N. Y.
Kennedy T. C., Shelbyville, Ind.
Keene, Chas. H., Boston, Mass.
Keen, W. W., Philadelphia, Pa.
Kerr, J. P., Pittsburg, Pa.
Kerr, Norman, Chicago.
Kessel, George, Cresco, owa.
Kidner F. C. Boston.
Kimball, Rush W., Norwich, Conn.
King, Alfred, Portland, Maine.
King, J. A. Millville, Mass.
Kimpton Arthur R., Somerville Mass.
Kirby, Holder, New Bedford, Mass.
Kittrell, T. F., Texarkana, Ark.
Kline, Chas. D., Nyack, N. Y.
Klump, John A., Williamsport, Pa.
Knight, Chas. L., Boston.
Knight, J. C., Plant City, Fla.
Knott, Van Buren, Sioux City, Iowa.
Krouse, Louis J., Cincinnati, O.
Kurth, G. E., Lawrence, Mass.
Lack, Charles Eugene, Brooklyn, N. Y.
Lambert, John H., Lowell, Mass.
Lane, John William, Boston.
Laplace, Ernest, Philadelphia.
Larimore, Frank C., Mt. Vernon, Ohio.
Larsen, C. L., Buffalo, Minn.
Latta, Samuel W., Philadelphia.
Lawrence, Florus F., Columbus, Ohio.
Lawrence, J. Wilmot, Malden, Mass.
Laws, William V., Hot Springs, Ark.
Lee, Stephen G., East Orange, N. J.
Letcher, James Hughes, Henderson, Ky.
Leith, W. H., Lancaster, N. H.
Letcher, Joseph B., Shorter, Ala.
Lewis, A. C., Fall River, Mass.
Lenz, George, Gloversville, N. Y.
Lespinasse, Victor D., Chicago.
Link, J. A., Springfield, Ohio.
Littig, L. W., Iowa City, Iowa.
Little, J. W., Minneapolis, Minn.
Lloyd, Samuel, New York.
Loder, Percival E., Philadelphia.
Logan, Frank P. T., Gloucester, Mass.
Lamade, Albert C., Williamsport, Pa.
Long, Charles, Wilkesbarre, Pa.
Longe, B. D., Newport, Vt.
Loomis, F. E., Marcus, Iowa.
Lord, John P., Omaha, Neb.
Loughlen, Thomas B., Olean, N. Y.
Love, W. S., Winchester, Va.
Lovell, C. E., Whitman, Mass.
Lovett, Robert W., Boston.
Lowry, G. W., Hastings, Mich.
Lund, F. B., Boston.
Lyle, Henry Hamilton Moore, New York.
Lyman, C. B., Denver, Colo.
Lyman, J. V. R., Eau Claire, Wis.
Lumbard, Joseph Edward, New York.
Lynch, Chas. F., Springfield, Mass.
Lynch, J. M., New York.
Lyon, Donald B., Pawtucket, R. I.
Mackechnie, Horace P., Somerville, Mass.
Mackechnie, Arthur N., Cambridge, Mass.
MacKenzie, Kenneth A. J., Portland, Ore.
Maclay, A. I., Delavan, Ill.
MacLaren, Archibald, St. Paul.
MacMillan, A. L., Hanover, Mass.
MacMillan, J. A., Detroit, Mich.
Macrae, Donald, Jr., Council Bluffs, Iowa.
MacRae, John, Calumet, Mich.
Madill, G. C., Ogdensburg, N. Y.
Maes, Urban, New Orleans, La.
Magie, W. H., Duluth, Minn.
Mahon, John B., Pittston, Pa.
Mahony, Francis R., Lowell, Mass.
Mahoney, Stephen A., Holyoke, Mass.
Maloney, John B., Key West, Fla.
Mann, J. P., Philadelphia.
Marcy, Henry O., Jr., Boston.
Markley, P. L., Rockford, Ill.
Marsh, F. L., Mt. Pleasant, Pa.
Marsh, J. H., Fayetteville, N. C.
Martin, Collier F., Philadelphia.
Martin, E. Denegre, New Orleans, La.
Martin, Frank Baltimore.
Marvel, Emery, Atlantic City,
Mason, James S., Urbana, Ill.
Matas, Rudolph, New Orleans, La.
Matchette, W. H., Hancock, Mich.
Mathews, Joseph M., Louisville,
Matteson, Geo. A., Providence, R. I.
Mattison, Fitch C. E., Pasadena, Cal.
Maury, J. W. Draper, New York.
Maynard, S. E., Burlington, Vt.
Mayo, Wm. J., Rochester, Minn.
McAllister, Frederick D., Lawrence, Mass.
McArthur, Lewis L., Chicago.
McChord, Robert C., Lebanon, Ky.
McCormack, Arthur T., Bowling Green, Ky.
McClellan, Ben R., Xenia, Ohio.
McCoy, Ambrose, Jackson, Tenn.
McCoy, P. Y., Evansville, Ind.
McCracken, R. W., Union Grove, Wis.
McCready, S. R., Leetonia, Ohio.
McDonell, W. Neil, U. S. Navy.
McGrath, W. C., Eagle Grove, Ia.
McGrath, W. J., Elkader, Iowa.
McGlannan, Alexius, Baltimore.
McGillicuddy, Richard A., Turners Falls, Mass.
McGrew, F. A., La Porte, Ind.
McGuire, Stuart, Richmond, Va.
McKay, W. T., Arkansas City, Kan.
McKeozie, R., Philadelphia.
McKenna, John A., Lansdowne, Pa.
McKenna, John B., East Providence, R. I.
McKnight, E. J., Hartford, Conn.
McLeay, John D., Indianapolis, Ind.
McLean, Charles H., Denver, Colo.
McLennan, Roderick L., Syracuse, N. Y.
McManus, T. U., Waterloo, Iowa.
McMeekin, James W., Saginaw, Mich.
McMullen, Charles G., Schenectady, N. Y.
McOscar, Edward J., Ft. Wayne, Ind.
McRae, Floyd W., Atlanta, Ga.
McVeigh, J. A., Detroit, Mich.
Mead, G. N. P., Winchester, Mass.
Mendo, R. H., Great Bend, Kan.
Meader, Chas. E., Lynn, Mass.
Mecray, Paul M., Camden, N. J.
Meigs, Joe V., Lowell, Mass.
Mengel, S. P., Parsons, Pa.
Metcalf, Wm. F., Detroit, Mich.
Meyer, Willy, New York.
Michler, Henry D., Easton, Pa.
Miles, Geo. A., Somerville, Mass.
Miles, R. G., Newcastle, Pa.
Mills, W. P., Missoula, Manitoba
Miller, A. Merrill, Danville, Ill.
Miller, Elmer M., Woodsville, N. H.
Miller, E. P., Fitchburg, Mass.
Miller, M. L., Susquehanna, Pa.
Miller, S. R., Knoxville, Tenn.
Miller, Wm. G., Norristown, Pa.
Milliken, Samuel E., Dallas, Tex.
Milner, A. L., Bellows Falls, Vt.
Miner, Worthington W., Ware, Mass.
Mitchell, Alfred, Jr., Portland, Maine.
Mitchell, J. W., Providence, R. I.
Mixter, Samuel J., Boston.
Molitor, Nicholas, La Grande, Ore.
Monks, George H., Boston.
Moore, James E., Minneapolis, Minn.
Moore, John T., Galveston, Tex.
Mooring, C. W., Gloucester, Mass.
More, C. W., Eveleth, Minn.
Morgan, F. C., Felchville, Vt.
Morgan, Geo. P., Dover, N. H.
Morgan, Harold J., Ogdensburg, N. Y.
Morris, J. E. K., Olean, N. Y.
Morris, Robert T. New York.
Morton, A. W., San Francisco.
Mosby, Wm. Lindsay, Bardwell, Ky.
Moss, W. F., Maineville, Ohio.
Mudd, H. G., St. Louis.
Mueller, Frederick, Chicago.
Mulligan, Edward W., Rochester, N. Y.
Mullins Eugene N. Baldwinville, Mass.
Mumford, James G., Boston.
Muncy, Dwight H., Syracuse, N. Y.
Munger, E. E., Spencer, Iowa.
Munro, John C., Boston.
Murphy, E. S., Dixon, Ill.
Murphy, John B., Chicago.
Murphy, Joseph C., Taunton, Mass.
Murphy, W. S., Waukesha, Wis.
Murray Thomas J., Butte, Mont
Myers, Edward E., Boston.
Myers, John Franklin, Sodus, N. Y.
Myles, Leo T. Cambridge, Mass.
Nealey, E. T., Bangor, Maine
Neff, Frank O., Kansas City, Mo.
Newcomb, Arthur T., Pasadena, Cal.
Nichols, Edward Hale, Boston.
Nickolson, Joseph L., Camden, N. J.
Nicola, C. C., Melrose, Mass.
Niles, H. D., Salt Lake, Utah.
Nolen, Walter F., Boston.
Norris, O. L., Dreshler, Ohio.
Norwood, E. E., Kingston, N. Y.
Oak, Chas. A., Revere, Mass.
Oakes, Wallace Kilbourne, Auburn, Maine.
Oakman, Carl S., Detroit, Mich.
O'Briee, C. C., Groveton, N. H.
Ochsner, A. J., Chicago.
O'Connor, John E., Fall River, Mass.
O'Dea, Charles A., Erie, Pa.
O'Day, J. C., Oil City, Pa.
Odlorne, Walter B., Boston.
O'Hara, W. J. A., Bridgeport, Conn.
Olney, Thos. A., South Bend, Ind.
O'Neil, Richard F., Boston.
Osborn, George W., Bridgeport, Conn.
Osgood, George, Boston.
Ottis, D. M., Springfield, Ill.
Palmer, Ezra, Boston.
Palmer, Frank A., Mechanicsville, N. Y.
Palmer, W. R., Johnsonburg, Pa.
Palmer, W. T., Glenville, Minn.
Paschal, Frank, San Antonio, Tex.
Parcher, Geo. C., Saugus, Mass.
Parkham, Joseph G., Lynn, Mass.
Park, Roswell, Buffalo, N. Y.
Parker, David W., Manchester, N. H.
Parker, P. J., San Diego, Cal.
Painter, Charles F., Boston.
Parsons, John W., Portsmouth, N. H.
Parkhill, C. S., Hornellsville, N. Y.
Patterson, Wm. F., Boston.
Paul, Luther G., Boston.
Payne, Marshall J., Staunton, Va.
Peabody, Percy D., Webster, S. D.
Pearse, Herman E., Kansas City, Mo.
Peck, G. S., Youngstown, Ohio.
Pedigo, S. E., Marshfield, Ohio.
Pelton, O. L., Elgin, Ill.
Penning, Oliver P., Baltimore.
Pennington, J. R., Chicago.
Percy, J. F., Galesburg, Ill.
Perry, Herbert B., Northampton, Mass.
Peters, W. T., Burt, Iowa.
Phelps, John S., Boston.
Phippen, Hardy, Salem, Mass.
Pierce, Appleton H., Leominster, Mass.
Pillow, R. H., Butler, Pa.
Pinnes, Frank W., Newark, N. J.
Pitta Joaa C. da S., New Bedford, Mass.
Plimpton Warren O., New York.
Potter, A. Carleton, Boston.
Potter, T. E., St. Joseph, Mo.
Porter, W. A., Boston.
Porter, John L., Chicago.
Porter, Miles F., Ft. Wayne, Ind.
Powell, C. B., Albia, Iowa.
Powers, Charles A., Denver, Colo.
Prouty, Ira Joslin, Keene, N. H.
Preston, James L., Kingston, N. Y.
Pumphrey, R. J., Massillon, O.
Purdy, J. Spencer, Auburn, N. Y.
Purdue, G. C., Wichita, Kan.
Pyle, Immanuel, Jersey City, N. J.
Quimby, Wm. Carter, Boston.
Quinn, Stephen T., Elizabeth, N. J.
Ragan, O. H. Williams, Hagerstown, Md.
Ralls, Arthur W., Gadsden, Ala.
Ramsay, George D., Newport, R. I.
Ranchous, Walter E. M., Columbus, Ohio.
Rand, David H., Portland, Ore.
Randall, Floyd H., Bay City, Mich.
Randall H. E., Lapeer, Mich.
Rausehoff, Joseph, Cincinnati, O.
Rosenthal, M., Cape Girardeau, Mo.
Read, Frederick B., Osceola Mills, Pa.
Reardon, Daniel R., Quincy, Mass.
Reeder, J. D., Baltimore.
Rees, Geo. M., Calumet, Mich.
Reed, Robert J., Wheeling, W. Va.
Reid, W. R., Rome, N. Y.
Reilly, James A., Boston.

Reilly, J. P., Elizabeth, N. J.
Rendleman, James W., East St. Louis, Ill.
Ressegnie, Fred J., Saratoga Springs, N. Y.
Reynolds, O. H., Frankfort, Ky.
Richards, Clarence A., Rhinelander, Wis.
Richardson, F. T., Concord, Mass.
Richardson, Maurice H., Boston.
Richmond, E. D., Reading, Mass.
Roach, Alfred J., Lowell, Mass.
Roan, C. F., Chicago.
Robbins, Frederick W., Detroit, Mich.
Roberts, John B., Philadelphia.
Roberts, R. A., Kansas City, Kan.
Roberts, Wm. Owen, Louisville, Ky.
Robertson, Jason N., Wolcott, N. Y.
Robinson, F. J., Fairfield, Me.
Robinson, Samuel, Boston.
Robinson, Thomas J., Taunton, Mass.
Robrecht, John J., Philadelphia.
Rockwell, H. G., Amherst, Mass.
Rodman, Wm. L., Philadelphia.
Rogers, F. E., Littleton, Colo.
Rolfe, Wm. A., Boston.
Root, Joseph E., Hartford, Conn.
Rose, Lewis W., Rochester, N. Y.
Rosenthal, Maurice L., Ft. Wayne, Ind.
Rosser, Charles M., Dallas, Tex.
Rudolph, H. L., Gainesville, Ga.
Runyan, J. P., Little Rock, Ark.
Russell, Walter Burton, Springfield, Mass.
Russell, Thos. P., Oshkosh, Wis.
Ryder, G., Malden, Mass.
Sandberg, Karl F. M., Chicago.
Sarnberger, S. J., Cortland, N. Y.
Sanger, Eugene Boutelle, Bangor, Maine.
Sargent, E., Moline, Ill.
Sarles, W. T., Sparta, Wis.
Saunders, C. J., Fort Dodge, Ia.
Sawyer, Carl W., Marion, Ohio.
Sawyer, Walter S., Fitchburg, Mass.
Sayre, Reginald H., New York, N. Y.
Schachner, August, Louisville, Ky.
Schaeffer, Charles D., Allentown, Pa.
Scannell, David D., Boston.
Schell, Walter, Terre Haute, Ind.
Schlueter, Robert E., St. Louis.
Schirmer, Wm. C., Brooklyn, N. Y.
Seelye, Walter, Worcester, Mass.
Seidler, W. A., Jamaica, Iowa.
Sellers, R. B., Comanche, Tex.
Sever, James Warren, Boston.
Shaffer, O. H., Altoona, Pa.
Shaw, Edwin R., Las Vegas, N. Mex
Shea, Augustus W., Nashua, N. H.
Sheehan, M. D., Stoneham, Mass.
Sherbondy, J. A., Youngstown, Ohio.
Sherk, Henry H., Pasadena, Cal.
Sherman, Frank M., Newton, Mass.
Sherrill, J. Garland, Louisville, Ky.
Shope, E. L., Harrisburg, Pa.
Short, T. W., Elkhart, Ind.
Sikoesky, V. H., Salem, N. H.
Simmons, F. A., Brockton, Mass.
Simpson, Chas. E., Lowell, Mass.
Seekmen, Warren D., Manhattan, Kan.
Sheldon, John G., Kansas City, Mo.
Sill, Henry D., Cooperstown, N. Y.
Silsby, E. B., Rockland, Maine.
Sleeper, F. W., Boston.
Small, A. E., Clinton, Mass.
Smith, Andrew C., Portland, Ore.
Smith, Edgar R., Providence, R. I.
Smith, F. H., Lowell, Mass.
Smith, Franklin Buchanan, Frederick, Md.
Smith, Frederick G., Somerville, Mass.
Smith, H. L., Nashua, N. H.
Smith, Homer B., Boston.
Smith, J. L., Paris, Ark.
Smith, Mary Almira, Boston.
Smith, Marion R., McGraw, N. Y.
Smith, Oliver C., Hartford, Conn.
Smith, Stafford Baker, Haverhill, Mass.
Smith, Walter A., Springfield, N. Y.
Snow, H. E., Bucksport, Maine.
Sogerson, John L., Johnstown, Pa.
Soutter, Robert, Boston.
Spear, Walter M., Rockland, Me.
Spitzer, Wm. M., Scranton, Pa.
Squier, Angelo O., Springfield, Mass.
Stacey, H. J., Leavenworth, Kan.
Staunt, M., Fremont, Ohio.
Stanton, Joseph, Newton, Mass.
Stedman, George, Boston.
Steel, Wm. A., Philadelphia.
Stern, Alex. A., Rondout, N. Y.
Stevens, E. A., Mayfield, Ky.
Stewart, Charles W., Newport, R. I.
Stevens, J. L., Mansfield, Ohio.
Stewart, Robert W., Pittsburg, Pa.
Stickney, Henry L., Manchester, N. H.
Stillings, T. A., Concord, N. H.
Stillman, Stanley, San Francisco.
Stimson, John W., Fitchburg, Mass.
Stivers, M. A., Middletown, N. Y.
Stoltz, Charles, South Bend, Ind.
Stone, James S., Boston.
Stough, C. F., Colorado Springs, Colo.
Stremmel, S. C., Macomb, Ill.
Stroup, Geo. H., Eddington, Pa.
Stout, D. P., Vicksburg, Miss.
Sturge, Edgar, Scranton, Pa.
Sturgis, Benj. F., Jr., Salem, Mass.
Sturgis, Benj. F., Auburn, Me.
Sturgis, W. E., Stephensville, Tex.
Sturtevant, A. H., Augusta, Me.
Sutliff, Van Duyne A., Philadelphia.
Swarthout, E. F., Sykeston, N. D.
Sweetser, H. B., Minneapolis, Minn.
Swift, Wm. N., New Bedford, Mass.
Swinburne, George Knowles, New York.
Sylvester, C. B., Harrison, Me.
Talbott, Eugene F., Grinnell, Ia.
Tanner, Herbert B., Kaukauna, Wis.
Tanquary, J. H., St. Louis, Mo.
Tansey, Elmer E., Chicago.
Tainter, L. K., Fredericksburg, Texas.
Taylor, Asher C., Duluth, Minn.
Taylor, Alfred S., New York.
Taylor, B. Tunstall, Baltimore.
Taylor, Chas. B., What Cheer, Ia.
Taylor, Fred W., Provo, Utah.
Tenney, Benjamin, Boston.
Thayer, A. H., Grafton, W. Va.
Thomson, Chas. E., Scranton, Pa.
Thompson, Frederick H., Fitchburg, Mass.
Thompson, G. W., Winamac, Ind.
Thompson, M. G., Hot Springs, Ark.
Thorndike, Augustus, Boston.
Thorndike, Paul, Boston.
Thienhaus, C. O., Milwaukee, Wis.
True, W. H., Laconia, N. H.
Tinker, M. B., Clifton Springs, N. Y.
Tipton, W. R., Las Vegas, N. M.
Tobey, Geo. L., Clinton, Mass.
Toole, Arthur F., Birmingham, Ala.
Torrey, John P., Andover, Mass.
Townsend, Wisner R., New York.
Traylor, G. A., Augusta, Ga.
Trainor, John R., Fall River, Mass.
Trueheart, M., Sterling, Ill.
Trueman, H. S., Somerville, Mass.
Trowbridge, Edward H., Worcester, Mass.
Tukey, Frank M., Bridgeport, Conn.
Tupper, Paul Y., St. Louis, Mo.
Turman, J. G., Jesup, Ga.
Tuttle, Albert H., Cambridge, Mass.
Tuttle, James P., New York.
Turner, Wm. Geo., Fall River, Mass
Twitchell, G. P., Greenfield, Mass.
Twitchell, Herbert F., Portland, Maine.
Twitchell, Jas. W., Belleville, Ill.
Tystad, J. R., Norristown, Pa.
Upton, Chas. L., Shelburne Falls, Maine.
Vance, W. K., Bristol, Tenn.
Vander Veer, Albert, Albany, N. Y.
Vander Veer, Jas. N., Albany, N. Y.
Varney, M. E., Saratoga, N. Y.
Ver Meulen, John, McBain, Mich.
Victor, Agnes C., Boston.
Vincent, Beth, Boston.
Viles, Clarence A., Lowell, Mass.
Wagoner, G. W., Johnstown, Pa.
Wailes, H. S., Cambridge, Md.
Wakefield, R. W., Bar Harbor, Me.
Walker, Alonzo B., Canton, O.
Walcott, Henry J., Jr., Springfield, Mass.
Walker, Edwin, Evansville, Ind.
Walker, Frank B., Detroit, Mich.
Walker, H. O., Detroit, Mich.
Walker, John B., New York.
Wallace, Alonzo S., Nashua, N. H.
Wallace, William L., Syracuse, N. Y.
Walsh, F. A., Erie, Pa.
Warbasse, James P., New York.
Waring, T. P., Savannah, Ga.
Warren, B. S., Boston.
Warren, J. Collins, Boston.
Watkins, J. M., Troy, Ala.
Weaver, C. A., New Boston, N. H.
Weaver, W. G., Wilkesbarre, Pa.
Weaver, Joseph K., Norristown, Pa.
Webb, Daniel A., Scranton, Pa.
Weeks, L. C., Detroit, Minn.
Weidner, M. R., Dolton, Ill.
Weir, Robt. P., New York.
Wells, H. P., St. Louis.
Weiser, Walter R., Springfield, Mass.
Westbrook, Richard W., Brooklyn, N. Y.
Westmoreland, W. F., Atlanta, Ga.
Weston, Chas. G., Minneapolis, Minn.
Wetherell, Arthur B., Holyoke, Mass.
Wheaton, Clarence L., Chicago.
Wheeler, Charles D., Worcester, Mass.
Wheeler, John B., Burlington, Vt.
Whelan, Raymond E., Youngstown, Ohio.
Whisler, H. C., Smithfield, W. Va.
White, R. R., Temple, Tex.
White, George R., Savannah, Ga.
Whitten, T. J., Nokomis, Ill.
Whittemore, Lyman, Boston.
Whitney, Charles M., Boston.
Wible, F. E., Munhall, Pa.
Wiedow, Henry, Worthington, Minn.
Wieneke, Edward J., Schenectady, N. Y.
Wiggin, Frederick Holme, New York.
Wiggins, S. L., McKeesport, Pa.
Wilcox, Homer B., Kingston, Pa.
Wilder, Richard E., Whitefield, N. H.
Wilkins, George, Manchester, N. H.
Williams, C. C., Niles, Ohio.
Williams, E. K., Arkadelphia, Ark.
Williams, W. H., Lebanon, Ind.
Williamson, S. D., Malone, N. Y.
Willis, Charles A., Waltham, Mass.
Willis, Park Weed, Seattle, Wash.
Wilson, H. Augustus, Philadelphia.
Wilson, Lonis T., Boston.
Wilson, W. E., Pawtucket, R. I.
Witter, G. H., Wellsville, N. Y.
Wimberly, W. C., Ft. Gaines, Ga.
Winslow, Randolph, Baltimore.
Winterbotham, W. H., Salina, Kan.
Wishard, William N., Indianapolis, Ind.
Wood, C. B., Monongahela, Pa.
Wood, H. A., Waltham, Mass.
Woods, Edmund F., Janesville, Wis.
Woodman, James B., Franklin, N. H.
Woodward, Lemuel F., Worcester, Mass.
Woodward, Samuel B., Worcester, Mass.
Woodward, W. M., McKeesport, Pa.
Workman, J. M., Woodward, Okla.
Workman, H. M., Tracy, Minn.
Wright, Arthur L., Carroll, Ia.
Wright, Chas. E., Scales Mound, Ill.
Wright, E. S., Salt Lake, Utah.
Wright, John W., Bridgeport, Conn.
Wyeth, John A., New York.
Wyman, Hal C., Detroit, Mich.
Wynekoop, C. L., Chicago.
Yarbough, L. A., Covington.
Yeaton, Geo. W., Medway, Mass.
Yocom, James R., Tacoma, Wash.
Youmans, Thomas Grant, Columbus, Ohio.
Young, Hugh N., Baltimore.
Yount, Clarence Edgar, Prescott, Ariz.

Section on Hygiene and Sanitary Science.

Allen, M. K., Louisville, Ky.
Angwin, William, U. S. N.
Arnold, Will Ford, Washington, D. C.
Bailhache, Preston H., Stapleton, N. Y.
Barnes, Henry J., Boston.
Beatty, T. B., Salt Lake, Utah.
Birdsall, Samuel, Susquehanna, Pa.
Blanchard, R. J., Winnipeg, Manitoba.
Bowditch, Vincent Y., Boston.
Burr, Albert H., Chicago.
Butler, Geo. F., Chicago.
Brown, Ellen F., Chester, Pa.
Campbell, Edward R., Bellows Falls, Vt.
Chase, Arthur A., Plainfield, Conn.
Chase, H. Lincoln, Brookline, Mass.
Clarke, Wallace, Utica, N. Y.
Cook, C. H., Natick, Mass.
Cook, George, Conard, N. H.
Corss, Frederick, Kingston, N. Y.
Cumston, Charles G., Boston.
Crowder, Thomas R., Chicago.
Davenport, Bennett F., Boston.
Day, Clarence C., Newburyport, Mass.
Darlington, Thomas, New York.
Donaldson, W. H., Fairfield, Conn.
Durgin, Sam'l H., Boston.
Duchein, Chas. F., Baton Rouge, La.
Edmister, Frederick, Port Huron, Mich.
Egbert, Seneca, Philadelphia.
Farmer, William Francis, Holden, Mass.
Feild, Edw. E., Norfolk, Va.
Furbush, Charles Lincoln, Philadelphia.
Green, Charles O., Hornellsville, N. Y.
Harrington, Charles, Boston.
Harbaugh, Chas. H., Philadelphia.
Heg, Elmer E., Seattle, Wash.
Herzog, Maximilian, Manila, P.I.
Hoag, David Edward, New York.
Hodson, E. M., Centerville, N. H.
Holden, Geo. W., Denver, Colo.
Holton, Henry D., Brattleboro, Vt.
Howard, William Lee, Baltimore.
Hurd, Albert Gordon, Millbury, Mass.
Hurty, J. N., Indianapolis, Ind.
Kean, J. R., Washington, D. C.
Kellogg, J. H., Battle Creek,
Keyes, Edward L., Jr., New York.
Knopf, S. A., New York.
Jackson, Joe W., Barre, Vt.
Jones, S. Case, Rochester, N. Y.
Lake, A. D., Gowando, N. Y.
Lewis, Bransford, St. Louis.
Lewis, Denslow, Chicago.
Lowenstein, Fred P., Westfield, Mass.
Low, Julia Ross, South Berwick, Maine.
Lovering, P. A., Washington, D. C.
Lynch, Charles, Washington,
MacNicholl, T. Alexander, New York.
Mays, Thomas J., Philadelphia.
McClary, C. E., Syracuse, N. Y.
McCollum, John H., Boston.
McCormack, Joseph N., Bowling Green, Ky.
McGowan, Geo. D., Lawrence Mass.
Mercer, Alfred, Syracuse, N. Y.
Montgomery, Liston H., Chicago.
Morrison, Walter T., Spokane, Wash.
Nason, A. C., Newburyport, Mass.
Patton, George Farrar, New Orleans, La.
Pattrell, Arthur Ellis, No. Grafton, Mass.
Pilcher, Jas. Evelyn, Carlisle, Pa.

Porter, Joseph E., Key West, Fla.
Price, Marshall Langton, Baltimore.
Putnam, Helen C., Providence, R. I.
Reinhardt, George F., Berkeley, Cal.
Richards, R. U., Pawtucket, R. I.
Robin, Albert, Wilmington, Del.
Rowe, George H. M., Boston.
Royer, B. Franklin, Philadelphia.
Satterlee, Albert R., Buffalo, N. Y.
Small, Chas. F., Chicago.
Stewart, A. H., Philadelphia.
Stone, B. H., Burlington, Vt.
Sturgis, F. R., New York.
Sulter, A. Walter, Herkimer, N. Y.
Tenney, Elmer S., Boston.
Terry, Herbert, Providence, R. I.
Tolman, Julia, Arlington, Mass.
Tucker, F. A., Noblesville, Ind.
Turner, Harriet E., Indianapolis, Ind.
Valentine, Ferd. C., New York.
Walcott, Henry P., Cambridge, Mass.
Ward, R. H., Troy, N. Y.
Warman, David, Trenton, N. J.
Warren, Chas. Everete, N. Easton, Mass.
Washburn, F. A., Jr., Boston.
Washburn, Frank H., Jefferson, Mass.
Wesinger, J. A., Ann Arbor, Mich.
Whiteside, George S., Portland, Ore.
Wilbur, Sarah M., Springfield, Mass.
Woodruff, Chas. E., U. S. Army.
Woodward, R. M., Boston.
Wyman, Walter, Washington, D. C.

Section on Ophthalmology.

Abbe, Alanson J., Fall River, Mass.
Adams, Chas F., Trenton, N. J.
Allen, Geo. F., Aurora, Ill.
Allen, S. Busby, Riverhead, N. Y.
Alleman, L. A. W., Brooklyn, N. Y.
Amsden, A. F., Boston.
Archer, Minnie C., Houston, Tex.
Arnold, Francis J., Burlington, Vt.
Baker, Albert Rufus, Cleveland, Ohio.
Baker, H. B., Taunton, Mass.
Bailey, E. P., Oneida, N. Y.
Bailey, R. H., Gainesville, Tex.
Ball, James M., St. Louis.
Beard, Charles H., Chicago.
Beetham, A. C., Bellaire, Ohio.
Bennett, Arthur G., Buffalo, N. Y.
Berry, John C., Worcester, Mass.
Best, O. F., Providence, R. I.
Black, Nelson Miles, Milwaukee, Wis.
Black, Melville, Denver, Colo.
Bonner, Horace, Dayton, Ohio.
Borsch, Louis, Philadelphia.
Bowers, John W., Portland, Me.
Brawley, Frank E., Chicago.
Broughton, William R., New York.
Brown, Earl J., Chicago.
Brown, E. V. L., Chicago.
Brown, Edward J., Minneapolis, Minn.
Brown, Felix Manning, Hopkinsville, Ky.
Brown, James M., Gadsden, Ala.
Bryant, D. C., Omaha, Neb.
Buchanan, Mary, Philadelphia.
Bull, Charles Stedman, New York.
Bulson, A. E., Jackson, Mich.
Bulson, Albert E., Jr., Ft. Wayne, Ind.
Burroughs, Geo. M., Danielson, Conn.
Butler, W. K., Washington, D. C.
Burleigh, R. F., So. Braintree, Mass.
Callan, Peter A., New York.
Cannaday, C. L., Roanoke, Va.
Cannaday, A. A., Roanoke, Va.
Capps, E. D., Ft. Worth, Tex.
Carvelle, H. D. W., Manchester, N. H.
Chapman, Vernon A., Muskegon, Mich.
Cheney, Frederick E., Boston.
Claiborne, J. H., New York.
Clement, Geo. Colburn, Haverhill, Mass.
Cogan, Edith Ives, Boston.
Coleman, W. Franklin, Chicago.
Collins, Elmer, Duluth, Minn.
Cooke, S. P. E., Gloucester, Mass.
Connor, Leartus, Detroit, Mich.
Crane, C. A., Canton, Ohio.
Crilly, Alex. R., Columbia, Pa.
Crain, W. G., Springfield, Mass.
Crockett, Ernest A., Lewiston, Maine
Crockett, Marguerite Standish, Boston.
Crockett, R. L., Oneida, N. Y.
Croft, Benjamin P., Greenfield, Mass.
Crosby, R. J., Kansas City, Mo.
Currie, A. N., Hutton, N. Dak.
Cutler, Colman Ward, New York
Davidson, John P., Richmond, Va.
Davis, A. E., New York.
De Lue, Frederick S., Boston.
Derby, George S., Boston.
Derby, Hasket, Boston.
Dixon, Lewis S., Boston.
Dixon, Geo. S., New York.
Dowling, Oscar, Shreveport, La.
Duane, Alexander, New York.
Dunn, Jas. W., Cairo, Ill.
Duncan, Joseph L., Pittsburg, Pa.
Edward, Calvin R., Menominee, Mich.
Ellen, E. C., Memphis, Tenn.
Ellis, Edward Keith, Boston.
Ellis, H. Bert, Los Angeles, Cal.
Emery, Chas. H., Bedford, Ind.
Estabrook, Charles T., Worcester, Mass.
Fisher, Herschel, Lebanon, Ohio.
Fleming, Geo. A., Baltimore.
Foster, Dean, Stamford, Conn.
Foster, Gard, Clyde, N. Y.
Fox, L. Webster, Philadelphia.
Frankhauser, Fremont, W., Reading, Pa.
Frank, Mortimer, Chicago.
Franklin, Clarence P., Philadelphia.
Frey, C. L., Scranton, Pa.
Fritz, Emdon, Manchester, N. H.
Gardner, Clarence R., Northampton, Mass.
Gibson, Robert D., Youngstown, Ohio.
Gould, George M., Philadelphia.
Green, John, Jr., St. Louis.
Greenwood, Allen, Boston.
Gribilin, H. E., Rockland, Me.
Gilbert, Frank Y., Portland, Me.
Grove, Benjamin H., Buffalo, N. Y.
Grove, Wm. T., Eureka, Kan.
Hagar, W. A., South Bend, Ind.
Hall, Wm. Dudley, Boston.
Hammond, C. B., Nashua, N. H.
Hanna, Hugh, Philadelphia.
Harvey, N. Darrell, Providence, R. I.
Hansell, Howard F., Philadelphia.
Haskell, Henry H., Boston.
Hawkins, Joseph F., Providence, R. I.
Gawley, Clark W., Chicago.
Heckel, Edward B., Pittsburg, Pa.
Heffernan, David A., Boston.
Herron, J. T., Jackson, Tenn.
Hill, H. E., Streator, Ill.
Holmes George J., New Britain, Conn.
Holt, Erastus Eugene, Portland, Maine.
Hopkinson, George, Boston.
Horgan, Edward, Philadelphia.
Horlbeck, Henry, Columbia, S. C.
Howell, Landen, Buffalo, N. Y.
Hubbell, Alvin A., Buffalo, N. Y.
Hulen, Yard H., San Francisco.
Ingalls, James W., Brooklyn, N. Y.
Irwin, V. J., Springfield, Mass.
Jackson, Edward Denver, Colo.
Jackson, Oliver H., Fall River, Mass.
Jack, Edwin E., Boston.
Jones, Elsie W., Lynn, Mass.
Kelleher, Patrick F., Cambridge, Mass.
Kellner, Geo. P., Lafayette, Ind.
Kilcullf, B. F., Marshalltown, Ia.
Kilburn, Henry W., Boston.
Kipp, Charles J., Newark, N. J.
Kistler, O. F., Wilkesbarre, Pa.
Knapp, Arnold New York.
Kolbeck, Charles W., Charleston, Mass.
Kress, Palmer J., Allentown, Pa.
Lambert, Walter E., New York, N. Y.
Lautenbach, Louis J., Philadelphia.
Leary, Montgomery E., Rochester, N. Y.
Lewis, E. J., Sank Center, Minn.
Ledbetter, S. L., Birmingham, Ala.
Lester, H. S., Streator, Ill.
Lewis, Eugene Richard, Dubuque, Iowa.
Lewis, Harold J., Rochester, N. Y.
Libby, George F., Denver, Colo.
Lorinz, Robert G., Boston.
Louchery, D. C., Clarksburg, W. Va.
Lowell, W. Holbrook, Boston.
Luedde, Wm. Henry, St. Louis.
Marlow, Frank Wm., Syracuse, N. Y.
Marple, W. B., New York.
Martin, H. H., Savannah, Ga.
May, Charles H., New York.
May, George W., Willimantic, Conn.
McCleuatban, J. C., Connellsville, Pa.
McCoy, Thos. J., Los Angeles.
McDavitt, Thos., St. Paul, Minn.
McDonald, Samuel J., Boston.
McIntire, Charles, Easton, Pa.
Meanor, William C., Beaver, Pa.
Meierhof, Edward L., New York.
Meiers, Reuben V., Lowell, Mass.
Merrill, W. H., Lawrence, Mass.
Miles, Henry T., Bridgeport, Conn.
Moon, John H., Bridgeton, N. J.
Morrison, Frank A., Indianapolis, Ind.
Moulton, Herbert, Fort Smith, Ark.
Muncaster, S. B., Washington, D. C.
Nottage, H. P., Goshen, Mass.
Nutter, Chas. F., Nashua, N. H.
O'Connor, Dennis F., Worcester, Mass.
Oettiker, James, Platteville, Wis.
Parker, Edward F., Charleston, S. C.
Parker, H. C., Boston.
Parker, Walter R., Detroit, Mich.
Parks, Edward Luther, Boston, Mass.
Patterson, James A., Colorado Springs, Colo.
Payne, C. S., Liberty, N. Y.
Peavler, G. M., Bristol, Tenn.
Posey, Wm. Campbell, Philadelphia.
Pontius, Paul J., Philadelphia.
Price, Geo H., Nashville, Tenn.
Pusey, Brown, Chicago.
Quackenbos, Alex., Boston.
Randolph, R. L., Baltimore.
Ranly, John, Cincinnati, Ohio.
Rau, Ernest, Bowling Green, Ky.
Reber, Wendell, Philadelphia.
Relk, J. N., Baltimore.
Ring, G. Oram, Philadelphia.
Risley, Samuel D., Philadelphia.
Roberts, W. H., Pasadena, Cal.
Rodman, Charles S., Waterbury, Conn.
Rogers, F. T., Providence, R. I.
Rogers, T. Avery, Plattsburg, N. Y.
Russell, E. Reid, Charlotte, N. C.
Santee, Leon B., Marlboro, Ohio.
Savage, Giles Christopher, Nashville, Tenn.
Scales, J. W., Pine Bluff, Ark.
Schaefer, Otto, Baltimore.
Schlichter, Chas. H., Elizabeth, N. J.
de Schweinitz, G., Philadelphia.
Sears, W. H., Huntingdon, Pa.
Sharp, Walter N., Indianapolis, Ind.
Shoemaker, Wm. T., Philadelphia.
Shumway, Edward A., Philadelphia.
Sites, J. McKee, Martinsburg, W. Va.
Smith, Daniel B., Cleveland, O.
Smith, Eugene, Detroit, Mich.
Smith, F. A., Troy, N. Y.
Smyth, R. Somers, Boston.
Spalding, Fred M., Boston.
Spilsbury, E. A., Yonkers, N. Y.
Spratt, Charles Nelson, Minneapolis, Minn.
Sulzer, G. A., Portsmouth, Ohio.
Sumner, Arthur F., Concord, N. H.
Stacey, C. F., Boston.
Standish, Myles, Boston.
Stauffer, Fred, Salt Lake, Utah.
Stevens, George T., New York.
Stevens, Henry B., Boston.
Stockwell, Charles B., Port Huron, Mich.
Stevenson, Mark D., Akron, Ohio.
Stark, Charles C., Cleveland, O.
Swasey, Edward, Worcester, Mass.
Sweet, William M., Philadelphia.
Sylvester, Alvie W., Pittsfield, Mass.
Tait, Thomas W., Philadelphia.
Taylor, Lewis H., Wilkesbarre, Pa.
Tenney, John A., Boston.
Thomason, J. W., Huntsville, Tex.
Thomson, Edgar Steiner, New York.
Thompson, Peter Hunter, Boston.
Timberman, Andrew, Columbus, Ohio.
Tingley, Louisa Paine, Boston.
Todd, Frank C., Minneapolis, Minn.
Toms, S. W. S., Nyack, N. Y.
Townsend, G. E., Bowling Green, Ky.
Tydings, Oliver, Piqua, Ohio.
Van Benschoten, Geo. W., Providence, R. I.
Varick, Wm. R., Concord, N. H.
Verhoeff, F. H., Boston.
Valk, Francis, New York.
Voorhees, Sherman, Elmira, N. Y.
Wadsworth, O. F., Boston.
Wanser, L. W., Boston.
Watson, J. Wm., West Hartford, Vt.
Weeks, John E., New York.
Weisser, Edward A., Pittsburg, Pa.
Wescott, Cassius D., Chicago.
Wiener, Meyer, St. Louis.
Wilder, Wm. H., Chicago.
Williams, Charles H., Boston.
Williams, Edward R., Boston.
Wood, Casey A., Chicago.
Würdemann, Harry Vanderbilt, Milwaukee, Wis.
Wynn, Charles A., Greensburg, Pa.
Zentmayer, William, Philadelphia.
Ziegler, S. Lewis, Philadelphia.

Section on Diseases of Children.

Abt, Isaac Arthur, Chicago, Ill.
Acker, T. J., Croton-on-Hudson, N. Y.
Acker, George N., Washington, D. C.
Allen, Gardner W., Boston, Mass.
Allgood, J. E., Liberty, S. C.
Amberg, Samuel, Baltimore, Md.
Amesse, J. W., U. S. M. H. Service, New York.
Ayer, Thomas H., Westboro, Mass.
Baker, Geo. W., Ogden, Utah.
Baird, J. M., Columbus, Ga.
Barker, F. N., Norway, Me.
Bartlett, H. I., Norway, Me.
Berry, R. D., Springfield, Ill.
Blakely, David N., Boston.
Booth, William G., Seattle, Wash.
Bowditch Henry I., Boston
Bowyer, F. F., Jersey City, N. J.
Brecht, E. F. L., Buffalo, N. Y.
Brewer, Walter C., Columbus, Miss.
Brown, C. W. M., Elmira, N. Y.
Brown, Daniel R. Salem, Mass.
Brown, Orland J., North Adams, Mass.
Browning, Charles C., Monrovia, Cal.
Bughee, Marion L., White River Junction, Vt.
Butler, William J., Chicago.
Chesebro, Edmund D., Providence, R. I.
Churchill, Frank S., Chicago, Ill
Clark, W. R., East Liverpool, Ohio.
Colton, A. J., Buffalo, N. Y
Connelly, John M., Boston.
Cook, John C., Chicago.
Cooperrider, Charles A., Columbus, Ohio.
Cotton, Alfred C., Chicago.
Combs, Warner R., Pine River, Wis
Coughlin, John H., New York.
Crandall, Floyd M., New York.
Craigin, George A., Boston, Mass.
Cunningham, John, Las Vegas, N. M.

Curry, Edmund F., Fall River, Mass.
Day, F. L., Bridgeport, Conn.
Donaldson, J. Frank, Salem, Mass.
Drayer, L. P., Fort Wayne, Ind.
Drew, Frederick Prescott, Dedham, Mass.
Dunn, Charles Hunter, Boston.
Eltcrich, Theodore J., Pittsburg.
English, D. E., Millburn, N. J.
Farmer, F. E., St. Johnsbury, Vt.
Fennessey, John F., Boston.
Fairbanks, Arthur Willard, Boston.
Fay, William E., Boston.
Frederick, William, Pittsburg.
Gafney, H. D., Ware, Mass.
Germann, Melinda K., Quincy, Ill.
Goler, G. W., Rochester, N. Y.
Graham, Edwin E., Philadelphia.
Gutman, Jacob, New York.
Hack, Thomas H., Proctor, Vt.
Hall, Walter D., Medford, Mass.
Hamill, Samuel M., Philadelphia.
Hammond, Henry L., Killingly, Conn.
Hanson, D. S., Cleveland.
Harvey, Robert H., Chicago.
Hastings, Robert W., Brookline, Mass.
Hess, Julius H., Chicago.
Hildreth, E. A., Wheeling, W. Va.
Hillis, R. J., Juniata, Pa.
Hines, E. A., Seneca, S. C.
Hollapeter, Philadelphia.
Holmes, Arthur, D., Detroit.
Horman, G. A., Hamilton, Ohio.
Houghton, Frederick W., Council Bluffs, Iowa.
Hubbard, J. C., Holyoke, Mass.
Hughes, W. L., Indiana Harbor, Ind.
Hulet, H. L., Allentown, N. Y.
Hutchinson, Walter P., Abington, Mass.
Hyde, Edward E., Chicago.
Irving, Samuel W., New Britain, Conn.
Johnson, Loren B. T., Washington, D. C.
Johnstone, Mary M. S., Chicago.
Jones, Eleanor C., Philadelphia.
Jordan, William H., Providence, R. I.
Kelly, Michael, Fall River, Mass.
Kelley, Samuel W., Cleveland, Ohio.
Keogh, John V., Dubuque, Iowa.
Kelleher, Wm. H., Woburn, Mass.
Keenan, Herbert J., South Boston.
Kennard, H. D., Peabody, Mass.
Knipe, R., Norristown, Pa.
Kerley, Charles G., New York.
Kilmer, Theron Vendell, New York.
Kyzer, John W., Kansas City, Mo.
Lackner, Ernest, Chicago.
Lauce, A. J., Portsmouth, N. H.
Le Boutillier, Theodore, Philadelphia, Pa.
Levins, Nathan N., Boston.
Long, William W., Birmingham, Ala.
Loweuburg, Harry, Philadelphia.
Lockary, J. L., Boston.
Mahoney, Francis X., Boston.
Mahoney, G. C., Somerville, Mass.
Manases, Titus, Carbon Hill, Ala.
Mangan, John J., Lynn, Mass.
McKihlen, W. W., Worcester, Mass.
McMurray, Francis M., Fitchburg, Mass.
McVea, Charles, Baton Rouge, La.
McAlister, Alex., Camden, N. J.
McClanahan, Harry M., Omaha.
MacFarlane, T. J., New York.
Merrill, Julia D., Chicago.
Mitchell, William, Highlandville, Mass.
Michael, May, Chicago, Ill.
Miller, J. R., Rockhill, S. C.
Morse, John Lovett, Boston.
Mowry, Jesse E., Providence, R. I.
Moxley, N. K., Ironton, Ohio.
Munro, Catherine N., Providence.
Murphy, Walter G., East Hartford, Conn.
Northrop, W. P., New York.
Palmer, Haven, Plymouth, N. H.
Parsons, Frank L., Boston.
Pisek, G. R., New York.
Pratt, Chas. A., New Bedford, Mass.
Richmond, Allen Pierce, Dover, N. H.
Ross, Lucretius H., Bennington, Vt.
Roth, Thomas Morgan, Boston.
Rowland, Russell Sturgis, Detroit.
Rupp, F. A., Lewistown, Pa
Seward, Walter M., New York.
Shelly, Edwin Taylor, Atchison, Kansas.
Silver, Lewis M., New York.
Smith, H. F. M., Orange, Mass.
Smith, Frank Llewellyn, Bridgeport, Conn.
Snyder, J. Ross, Birmingham, Ala.
Southworth, Thomas S., New York.
Sprague, J. L., Providence, R. I.
Spicer, George T., Providence, R.I.
Stans, Ralph, Lewisburg, Pa.
Steele, Albert Edward, Boston. Mass.
Stone, Ralph E., Beverly, Mass.
Stone, Ellen A., Providence, R. I.
Storey, Thomas Andrew, Boston.
Strasser, August Adrian, Arlington, N. J.
Sylvester, Charles P., Boston.
Sweet, Mary F., Syracuse, N. Y.
Taylor, John Madison, Philadelphia.
Taylor, J. Gurney, Philadelphia.
Tinley, Mary Louis, Council Bluffs, Iowa.
Townsend, Charles W., Boston.
Van de Bogert, Frank, Schenectady, New York.
Van Der Slice, James W., Chicago.
Wahrer, C. F., Ft. Madison, Iowa.
Walls, Frank X., Chicago.
Warren, Henry S., Boston.
Watson, Wm. T., Baltimore, Md.
Watson, Elliot B., Williamstown, Vt.
Watts, Henry F. R., Boston.
Weinstein, Joseph, New York.
Wigton, H. A., Hanna, Wyo.
Wheeler, Lucia A., Worcester, Mass.
Wyncoop, Edward J., Syracuse, N. Y.
Wylie, Eugene C., Boston. Mass.

Section on Stomatology.

Allen, W. A., E. Hampstead, N.
Andrews, R. R., Cambridge, Mass.
Anthoine, I. G., Nashua, N. H.
Belyea, F. S., Brookline, Mass.
Bill, B. J., Genoa Junc., Wis.
Birmingham, R. M., Lawrence, Mass.
Bennett, Lewis F., Beloit, Wis.
Beardman, Waldo E., Boston.
Bogue, Edward A., New York.
Bundy, Frank E., Boston.
Branigan, Edw. W., Boston.
Braunwarth Anna M., Chicago.
Braunwarth, Emma L., Muscatine, Iowa.
Briggs, Edward Cornelius, Boston.
Brown, Geo. V. I., Milwaukee, Wis.
Canedy, Francis J., Shelburne Falls, Mass.
Carlton, Harry P., San Francisco.
Clark, Harry E., Sheridanville, Pa.
Conklin, Gustavus, Orwell, Pa.
Cook, Irving S., Georgiaville, R. I.
Cooke, Wm. Parker, Boston.
Culkin, J. R., Rochester, N. Y.
Davis, T. T., Pittsburg, Pa.
Donaldson, John B., Canonsburg, Pa.
Doubleday, Arthur W., Boston.
Eames, George Franklin, Boston.
Edmunds, George F., Bristol, Vt.
Estes, Nathan A., Newport, R. I.
Fiechi, C., New York.
Fillebrown, Thomas, Boston.
Flanagan, Andrew J., Springfield, Mass.
Fletcher, M. H., Cincinnati, O.
Fogg, Frederick S., Boston.
Foster, W. S., Pittsburg, Pa.
Fowler, I. N., Lebanon, N. H.
Gifford, U. G., Avondale, Pa.
Haines, I., Cambridge, Mass.
Hagerty, J. P., Pittsburg, Pa.
Harrison, Henry, Boston.
Hodgdon, Ralph F., Somerville, Mass.
Hogner, R., Boston.
Holt, John D., Berlin, N. H.
Hopkins, Sam'l A., Boston.
Hornbeck, James L., Catasauqua, Pa.
Horne, R. G., Watertown, Mass.
Hower, H. Y., Mifflinville, Pa.
Howell, W. E., Haleville, Ala.
Huline, Albert E., Andover, Mass.
Kimball, Charles Otis, New York.
Kinsman, Edgar O., Cambridge, Mass.
Kirk, James A., Pittsburg, Pa.
Kunkel, Henry Kingston, Pa.
Latham, V. A., Chicago.
Lawler, William P., Lowell, Mass.
Lindstrom, Carl R., Boston.
McManus, James, Hartford, Conn.
McMarrow, Frank, Syracuse, N. Y.
MacDonald, C. W., Boston.
Marsh, James E., Springfield, Mass.
Marston, E. P., Monmouth, Me.
Martin, Miles, Boston.
Maxfield, Geo. A., Holyoke, Mass.
Montgomery, Edward M., Boston.
Moyer, S. R., Monroe, Wis.
Page, A. Kidder, Boston.
Pepper, W. L., Philadelphia.
Pillsbury, Warren W., Newburyport, Mass.
Power, J. E., Providence, R. I.
Ryder, James W., Boston.
Reynolds, C. S., Kennett Square, Pa.
Rheln, Meyer L., New York.
Rinard, C. C., Homestead, Pa.
Rogers, Jesse Thomas, Savannah, Ga.
Sanders, W. B., Troy, Ala.
Savage, Geo. E., Worcester, Mass.
Schamberg, Norris I., Philadelphia.
Sheldon, S. H., Portland, Ore.
Shepard, Luther D., Boston.
Sherman, Frank J., Ballston, N.Y.
Smith, Frank Baily, Washington, R. I.
Smith, Eugene H., Boston.
Smith, W. C., Lynn, Mass.
Steeves, Alice M., Boston.
Stevens, Chas. E., Boston.
Stevens, Seriah, Boston.
Talbot, Eugene S., Chicago.
Taylor, Frank T., Boston, Mass.
Walton, R. D., Frankfort, Maine.
Wehle, W. J., West Bend, Wis.
Wheeler, Herbert Locks, New York.
Whitmore, Albion S., Boston.
Winsor, F. L., Laurens, N. Y.
Wolburn, Frank Homer, Boston.

Section on Nervous and Mental Diseases.

Abbott, E. Stanley, Waverley, Mass.
Abbott, Florence H., Taunton, Mass.
Allen, Alfred Reginald, Philadelphia.
Angell, Edward B., Rochester, N. Y.
Ayres, Samuel, Pittsburg, Pa.
Baker, Smith, Utica, N. Y.
Baldwin, Henry C., Boston.
Barnes, F. H., Hartford, Conn.
Barré, J. A., Fall River, Mass.
Baugh, A. W., Paoli, Pa.
Beattie, T. J., Kansas City, Mo.
Bell, Samuel, Detroit, Mich.
Belt, Henry, New York City.
Benjamin T. Burley, Worcester, Mass.
Bliss, M. A., St. Louis, Mo.
Booth, J. Arthur, New York.
Briggs, L. V., Boston.
Bullard, E. L., Milwaukee, Wis.
Burr, C. B., Flint, Mich.
Burr, Charles W., Philadelphia.
Brooks, Edith May, Roxbury, Mass.
Brown, Frederick W., Franklin, Pa.
Brown, George A., Barre, Mass.
Browne, C. A., Ludlow, Vt.
Browning, William, Brooklyn.
Brownrigg, A. B., Nashua, N. H.
Byrne, Harry F., Westfield, Mass.
Calkins, Marshall, Springfield, Mass.
Camp, C. D., Philadelphia.
Canfield, Wm. C., Bristol, R. I.
Caples, B. M., Waukesha, Wis.
Chase, Walter G., Boston, Mass.
Channing, Walter, Brookline, Mass.
Chapman, W. H., Ingleside, Neb.
Colburn, Harry H., Boston.
Collins, Joseph, New York.
Coe, Henry Waldo, Portland, Ore.
Coffin, C. E., University Place, Neb.
Coggeshall, F., Boston.
Congdon, Charles E., Buffalo, N.Y.
Connett, A. H., Great Bend, Kan.
Coon, Geo. B., East Warpole, Mass.
Corey, Francis E., Alhambra, Cal.
Cowles, Edward, Boston.
Cullen, Thomas S., Baltimore.
Crafts, Leo M., Minneapolis.
Crothers, T. D., Hartford, Conn.
Dana, Charles L., New York.
Daubenspeck, Chas. F., Cochranton, Pa.
Delehanty, Edward, Denver.
Dewey, Richard, Wauwatosa, Wis.
Dewey, Chas. G., Boston.
Dercum, Francis X., Philadelphia.
Diefendorf, A. R., Middletown, Conn.
Donley, John E., Providence.
Donohoe, George, Independence, Iowa.
Drew, Charles A., Bridgewater, Mass.
Dutton, Charles, Wakefield, Mass.
Edes, Robert T., Boston.
Fernald, Guy G., Waverley, Mass.
Fisher, Edward D., New York.
Frazier, Chas. H., Philadelphia.
Flood, Everett, Palmer, Mass.
Fry, Frank R., St. Louis, Mo.
Fuller, Daniel H., Boston.
Gates, G. W., Boston.
Gillette, Wm. J., Toledo, Ohio.
Gordon, Alfred, Philadelphia.
Granger, F. B., Boston.
Graham, Douglas, Boston.
Graver, Earl E., Columbus, Ohio.
Graves, William W., St. Louis.
Grinker, Julius, Chicago.
Havilan, W. C., Worcester, Mass.
Hawke, W. W., Philadelphia, Pa.
Hecht, D'Orsay, Chicago, Ill.
Herdman, Wm. Jas., Ann Arbor.
Hill, Gershom H., Des Moines.
Hills, Frederick L., Concord, N.H.
Hitchcock, Charles, Detroit.
Hoppe, Herman H., Cincinnati.
Howard, Herbert B., Boston.
Hughes, Charles H., St. Louis.
Hunt, James Ramsay, New York.
Hutchings, Richard H., Ogdensburg, N. Y.
Hutchinson, Charles, Portland, Me.
Inch, G. F., Kalamazoo, Mich.
Inglis, David, Detroit, Mich.
Jelly, Arthur C., Boston.
Jelly, George F., Boston.
Jewett, Fred B., Howard, R. I.
Jones, W. Alex., Minneapolis.
Kennedy, Edward A., Palmer, Mass.
Keniston, Jas. M., Portland, Me.
Kilbourne, Arthur, Rochester, Minn.
Kindred, Jos. J., New York.
Kingman, Eugene, Providence, R. I.
Knapp, Philip Coombs, Boston.
Krauss, Wm. C., Buffalo, N. Y.
Langdon, F. W., Cincinnati, Ohio.
Lathrop, M. C., Dover, N. H.
Leonard, Wellington W., Akron, Ohio
Leszynsky, Wm. M., New York.
Linenthal, Harry, Boston.
Little, Charles S., Laconia, N. Y.
Lucas, Henry H., Paterson, N. J.
Mackie, L. V. G., Attleboro, Mass.
McCarthy, D. T., Philadelphia.
McCaw, Wm., Providence, R. I.
McGregor, Robert, Saginaw, Mich.
McSweeney, P. E., Burlington, Vt.
Mallon, Peter D., Morris Plains, N. J.
Mettler, L. Harrison, Chicago.
Merrill, A. E., Somerville, Mass.
Miller, Henry W., Taunton, Mass.
Mills, Charles K., Philadelphia.
Millspaugh, Daniel T., Paterson, N. J.
Mitchell, Harry W., Danvers, Mass.
Moody, G. H., San Antonio, Tex.
Moore, Richard C., Omaha, Neb.
Morrow, Charles H., Gloucester, Mass.
Morton, Wm. J., New York.
Moyer, Harold N., Chicago.
Nichols, Arthur H., Boston.
Osgood, Gilman, Rockland, Mass.
Ormsby, Oliver C., Rexburg, Idaho.
Ordway, Mabel D., Boston.
Palmer, Sarah Ellen, Boston.
Parker, Moses Greeley, Lowell, Mass.
Peterson, Frederick, New York.
Pershing, Howell T., Denver, Colo.

Pierson, Clarence, Jackson, La.
Prince, Morton, Boston.
Punton, John, Kansas City, Mo.
Putnam, J. W., Buffalo, N. Y.
Rhein, J. H., West Philadelphia.
Riggs, Charles Eugene, St. Paul Minn.
Robie, W. F., Baldwinville, Mass.
Rutledge, F. E., Newberry, Mich.
Sawin, Charles D., Boston.
Schwab, Sidney I., St. Louis.
Scribner, E. V., Worcester, Mass.
Searcy, J. T., Tuscaloosa, Ala.
Sears, Julia Seton, Boston.
Shattuck, Geo. L., Providence.
Sherman, E. Amelia, National, Ia.
Simpson, F. T., Hartford, Conn.
Sinis, F. Robertson, Melrose, Mass.
Sinkler, Wharton, Philadelphia.
Skolfield, E. B., Bangor, Maine.
Smith, A. Noel, Dover, N. H.
Spiller, Wm. G., Philadelphia.
Stack, S. S., Milwaukee, Wis.
Starr, M. Allen, New York.
Stephenson, F. H., Syracuse, N. Y.
Strong, Sylvester E., Saratoga Springs, N. Y.
Sweeney, Arthur, St. Paul, Minn.
Taylor, Isaac M., Morganton, N. C.
Thomas, H. M., Baltimore.
Thomas, John Jenks, Boston.
Thompson, Chas. E., Gardner, Mass.
Thurlow, J. Howard, Boston.
Tomlinson, H. A., St. Peter, Minn.
Tuttle, George T., Waverly, Mass.
Twohey, John J., Buffalo, N. Y.
Upson, Henry S., Cleveland, O.
Voje, J. H., Oconomowoc, Wis.
Walton, G. L., Boston.
Waterman, George A., Boston.
Webber, S. G., Boston.
Weisenbourg, T. H., Philadelphia.
Wherry, J. W., Dansville, N. Y.
White, Walter H., Boston.
Willitts, Theo. L., Harrisburg, Pa.
Witherle, Charles B., Portland, Maine.
Wood, H. Walton, Fairhaven, Mass.
Work, Hubert, Pueblo, Colo.
Yarros, Rachelle S., Chicago.
Zenner, Philip, Cincinnati, O.

Section on Cutaneous Medicine and Surgery.

Alderson, M. E., Russellville, Ky.
Allen, John Thomas, Brownsville, Tenn.
Alexander, T. B., Seltuate, Mass.
Ankrim, W. F., Pittsburg, Pa.
Aud, C. Z., Cicilian, Ky.
Bauna, Henry Clay, Syracuse, N. Y.
Baum, William L., Chicago.
Biggs, E. L., Hot Springs, Ark.
Boggs, Russell H., Pittsburg, Pa.
Brayton, A. W., Indianapolis, Ind.
Brennan, T. F., San Francisco.
Bradley, Mark S., Hartford, Conn.
Buckley, George W., Boston.
Bufford, John Henry, Boston.
Bulkley, L. Duncan, New York.
Burns, F. S., Boston.
Butler, G. E., Fall River, Mass.
Calvin, W. D., Ft. Wayne, Ind.
Carrier, Albert E., Detroit, Mich.
Clack, J. Morgan, Rockwood, Tenn.
Cocks, Edmund L., New York.
Cook, John W., Pendleton, Ind.
Cornwell, Herbert C. de V., New York.
David, Charles Thomas, New York.
Davis, William H., Denver, Colo.
Dickson, J. A., Ashtabula, Ohio.
Dix, George A., Worcester, Mass.
Doughty, James W., Phippsburg, Maine.
Earle, Sam'l T., Baltimore, Md.
Ellwood, Thomas, Sharon, Pa.
Everett, Oliver H., Worcester, Mass.
Fenyes, Adalbert, Pasadena, Cal.
Fewsmith, Joseph, Newark, N. J.
Flock, Edward Beecher, Philadelphia, Pa.
Flynn, John L., Cambridge, Mass.
Foerster, O. H., Milwaukee, Wis.
Foster, Barzillai B., Portland, Maine.
Foster, Burnside, St. Paul, Minn.
Foster, Horace K., Peabody, Mass.
Fox, Charles James, Hartford, Conn.
Fuller, Frederick H., Walpole, Mass.
Frank, Louis F., Milwaukee, Wis.
Gotthelf, W. S., New York.
Gibson, J. M., Melndoe Falls, Vt.
Gnichtel, A. L., New York.
Guild, T. E., Boston.
Halberstadt, A. H., Pottsville, Pa.
Harding, George F., Boston.
Hartung, H. H., Boston.
Haynes, Mabel S., Boston.
Heidingsfeld, M. L., Cincinnati, Ohio.
Hixon, Edwin C., Boston.
Holland, Hubert T., Boston
Howe, James Sullivan, Boston.
Jepson, S. L., Wheeling, W. Va.
Jones, S. W., Franklin, N. H.
Juerkins, T. L., Lynn, Mass.
Kassabian, Mihran K., Philadelphia.
Keaney, Henry J., Everett, Mass.
Kessler, J. B., Iowa City, Iowa.
Kilroy, P. K., Springfield, Mass.
Kimball, Harry Waldo, Providence, R. I.
Knight, Marcus W., Milford Mass.
Kirlin, Charles F., Troy, N. Y.
Langfitt, N. J., Allegheny, Pa.
Lieberthal, David, Chicago.
Lothrop, Howard A., Boston.
Luce, Thomas W., Portsmouth.
MacKillop, Daniel, Cambridge,
McDonnell, Ralph A., New Haven, Conn.
McEwen, Ernest L., Chicago.
Marquardt, Chas. H., La Crosse, Wis.
Menage, H. E., New Orleans, La.
Morrow, Prince A., New York.
Meek, Edith L., Boston.
Nahertt, Frederick, Syracuse, N. Y.
Nelson, Henry S., Minneapolis, Minn.
Palmer, Albert H., Marlboro, N. Y.
Parke, B. R., Wellsville, Ohio.
Peckham, Frank E., Providence, R. I.
Perry, A. P., Boston.
Piffard, H. G., New York.
Post, Abner, Boston.
Purdy, Charles H., Jersey City, N. J.
Ravogli, Augustus, Cincinnati, Ohio.
Rice, Daniel S., Hastings, Pa.
Rice, H. Hamilton, Boston.
Riegelhaupt, Samuel, Cleveland, Ohio.
Rushford, Edward A., Salem, Mass.
Saville, Sumner C., Boston.
Scudder, Charles L., Boston.
Shoniager, Lee S., Boston.
Smith, C. M., Boston.
Stelwagon, Henry W., Philadelphia.
Stern, Chas. A., Hartford, Conn.
Stearns, B. W., Binghamton, N. Y.
Stevens, Frank W., Bridgeport, Conn.
Stockwell, Lydia, Atchison, Kan.
Sutton, H. T., Zanesville, Ohio.
Swarts, Gardner T., Providence, R. I.
Thorndike, Townsend W., Boston.
Towle, Harvey G., Boston.
Twitmyer, J. H., Sharksville, Pa.
Varney, H. R., Detroit, Mich.
Vinyard, G. T., Amarillo, Texas.
Weiss, Ludwig, New York.
Wheeler, David E., Buffalo, N. Y.
White, Charles J., Boston.
White, James C., Boston.
Wormelle, Chas B., Boston.

Section on Laryngology and Otology.

Abbott, Harlan P., Providence.
Adams, C. J., Kokomo, Ind.
Allen, John Howard, Portland, Maine
Andrews, Albert H., Chicago.
Anderson, Willis S., Detroit, Mich.
Bacon, Edw S., Providence, R. I
Baker, Charles H., Bay City, Mich.
Baldway, Mary E., Newport, R. I.
Barnhill, John F., Indianapolis.
Blake, Clarence John, Boston.
Blodgett, John H., Boston.
Bishop, Frederic Courtney, New Haven, Conn.
Boardman, Wm. Sydney, Boston.
Borden, Charles R. C., Boston.
Brainerd, John B., Boston.
Brayton, Roland M., Dorchester, Mass.
Brody, Frank Robert, Lowell, Mass.
Brown, John Edwin, Columbus, Ohio.
Bryant, Alice G., Boston.
Bryant, W. Sohier, New York.
Butler, Margaret F., Philadelphia.
Burns, Louis J., Philadelphia.
Byington, J. F., Battle Creek, Mich.
Carpenter, E. R., El Paso, Tex.
Carroll, James J., Baltimore.
Casselberry, W. E., Chicago.
Chenery, William E., Boston.
Clark, Frederick I., Westfield, Mass.
Clark, J. P., Boston.
Cleary, James, Cambridge, Mass.
Clementson, W. A., Braddock, Pa.
Coakley, Cornelius G., New York
Cobb, Albert C., Marion, Mass.
Cobb, C. M., Lynn, Mass.
Cobb, Frederick C., Boston.
Collin, Lewis A., New York.
Colwell, N. P., Chicago.
Coolidge, Algernon, Jr., Boston.
Corwin, Theo. W., Newark, N. J.
Crockett, Eugene A., Boston.
Crossfield, Frederic S., Hartford, Conn.
Cryer, Matthew H., Philadelphia.
Cott, Geo E., Buffalo, N. Y.
Curran, Simon F., Boston
Davis, Gilman, Portland, Maine.
Davis, J. Leslie, Philadelphia.
Dench, Edward B., New York.
Derrison, Charles E., New York.
Driver, W. E., Norfolk, Va.
Drury, Dana Warren, Boston.
Duel, Arthur B., New York.
Dunlap, H. W., Battle Creek, Mich.
Eliot, Johnson, Washington, D. C.
Emerson, Francis P., Boston.
Farlow, John W., Boston.
Fielding, Fred G., Glens Falls, N. Y.
Fisher, Alvah A., Providence, R. I.
Fitzgerald, W. H., Hartford, Conn.
Freedman, Louis Mark, Chelsea, Mass.
Freer, Otto Tiger, Chicago.
Getchell, Albert C., Worcester, Mass.
Gildea, P. F., Colorado Springs, Colo.
Goodale, Joseph L., Boston.
Goff, Waldo Percy, Clarksburg, W. Va.
Greene, Joseph B., Birmingham, Ala.
Griffin, Walter A., Sharon, Mass.
Guiler, Robt., Williamsport, Pa.
Hamilton, R. J. C., Chicago.
Hammond, Philip, Boston.
Hardie, T. M., Chicago
Harland, Wm. G. B. Philadelphia.
Harris, T. J., New York
Harooner, David, Jr., Worcester, Mass.
Hilscher, F. W., Spokane, Wash.
Holcombe, Chas. H., Trenton, N. J.
Holmes, Edgar M., Boston.
Holmes, May Salona, Worcester, Mass.
Hurd, Lee Maidment, New York.
Hurley, John Joseph, Boston.
Ingals, E. Fletcher, Chicago.
Jack, Frederick L., Boston.
Jillson, Franklin C., Boston.
Kearney, John H., Fitchburg.
Kelchner, Wm. T., Camden, N. J.
Kenefick, Joseph A., New York.
Kennon, B. R., Norfolk, Va.
Kerrison, Philip D., New York.
Kerr, Isabelle D., Boston.
Kimball, Irving E., Portland, Me.
Knowles, William F., Boston.
Langmaid, Sam'l W., Boston.
Lawrence, N. Louise, Boston.
Large, S. H., Cleveland, Ohio.
Leach, W. J., New Albany, Ind.
Lecompte, Walter A., Boston.
Leland, G. A., Boston.
Lewis, G. Griffin, Syracuse, N. Y.
Lutz, Stephen H., Brooklyn, N. Y.
Lyon, Frederick D., Boston.
McDonald, Dennis J., New York.
McGaban, C. F., Aikin, S. C.
McIntosh, Herbert M., Boston.
McKimmie, O. A. M., Washington, D. C.
McLaughlin, Henry V., Brookline, Mass.
Mabon, John S., Allegeny, Pa.
Mayer, Emil, New York.
Mears, D. W., Scranton, Pa.
Michaels, Alfred, New York.
Mills, James, Janesville, Wis.
Morse, Henry Lee, Boston.
Mosher, Harris P., Boston.
Menze, Frederick, Chicago.
Myles, Robert C., New York.
Norman, Seaton, New Orleans, La.
Noyes, Margaret L., Boston.
O'Brien, John F., Boston.
Pake, S. G., Superior, Wis.
Parrish, Edward E., Memphis, Mo.
Pearson, Charles L., Boston.
Pennell, William W., Mt. Vernon, Ohio.
Pfingst, Adolph O., Louisville, Ky.
Pierce, Chas. W., Boston.
Pierce, E. W., Meriden, Conn.
Pierce, Norval H., Chicago.
Pischel, Kaspar, San Francisco.
Plummer, Edward M., Boston.
Prince, A. E., Springfield, Ill.
Procter, Percy E., Gloucester, Mass.
Powers, Jr., Geo. Hermann, Boston.
Power, James F., New York.
Putnam, J. M., Chelsea, Mass.
Quinlan, Francis J., New York.
Randall, Wm. L., Shelton, Conn.
Reardon, Timothy J., Boston.
Relk, H. O., Baltimore.
Rice, Walter J., Boston.
Richards, Geo. L., Fall River, Mass.
Robertson, Charles M., Chicago.
Roe, John O., Rochester, N. Y.
Rogers, Albert E., Boston.
Rosenhelm, Sylvan, Baltimore.
Shambaugh, Geo. E., Chicago.
Shores, H. T., Northampton, Mass.
Shurly, Burt R., Detroit, Mich.
Smith, Harmon, New York.
Smith, S. MacCuen, Philadelphia.
Smyth, Herbert E., Bridgeport, Conn.
Snow, Sargent F., Syracuse, N. Y.
Spear, Edmund D., Boston.
Sprague, Frank B., Providence, R. I.
Steers, William H., Brooklyn, N. Y.
Stubbs, F. Gurney, Chicago.
Strong, F. P., Boston.
Sulter, F. C., La Crosse, Wis.
Tenney, William W., Canton, Mass.
Titterington, J. R., Dallas, Tex.
Tobey, George L., Jr., Boston.
Tolman, Henry, Jr., Boston.
Torrison, George A., Chicago.
Wales Ernest de Wolfe, Boston.
Walker, David Harold, Boston.
Warner, C. T., Marlford, Mass.
Welch, Cullin F., San Francisco.
White, Leon Edward, Boston.
Yancey, Robert S., Dallas, Tex.
Yankaver, Sidney, New York.

Section on Pharmacology and Therapeutics.

Abbott, W. C., Chicago.
Adams, Charles W., Cambridge,
Baer, Almerin W., Chicago.
Benedict, A. L., Buffalo, N. Y.
Burdick, A. S., Chicago.
Butler, James N., New York.
Brown, Percy, Boston.
Chase, C. S., Waterloo, Iowa.
Cohen, Solomon Solis, Philadelphia.
Croftan, A. C., Chicago.
Dickerson, W. L., St. Louis.
Diehl, C. Lewis, Louisville, Ky.
Dorr, Henry I., Philadelphia.
Elphorn, Max, New York
England, Joseph W., Philadelphia.
Fisher, R. W., Salt Lake City.
French, J. M., Milford, Mass.
Fullerton, E. B., Columbus, Ohio.
Gerstein, Maurice, Boston

Gifford, John H., Fall River, Mass.
Gilbert, R. B., Louisville, Ky.
Hallberg, C. S. N., Chicago.
Hannum, J. W., Ludlow, Mass.
Hill, J. Sutcliffe, Bellows Falls, Vt.
Houghton, E. M., Detroit, Mich.
Hunt, Reid, Washington, D. C.
Hurwitz, Abraham J., Boston.
Hynson, Henry P., Baltimore.
Jenne, J. N., Burlington, Vt.
Johnston, Geo. C., Pittsburg, Pa.
Jones, C. P., Vineland, N. J.
Jones, Philip Mills, San Francisco.
Kebler, Lyman F., Washington, D. C.
Kellogg, Kenneth E., New Britain, Conn.
Kremers, Edward, Madison, Wis.
Knight, Charles E., Kirkland, Mass.
Leonard, Charles Lester, Philadelphia.
Leonard, Edwin, Jr., Jersey City, N. J.
Lewis H. Edwin, New York.
McGee, J. R., Cleveland, Ohio.
Mansfield, James A., Boston.
Morgan, Forde, New York.
Motter, Murray Galt, Washington, D. C.
Nagle, John T., New York.
Osborne, Oliver T., New Haven, Conn.
Piper, Frank, Boston.
Plummer, Frank J., Malden, Mass.
Price, John C., Scranton, Pa.
Puckner, W. A., Chicago.
Randall, G. M., Boston.
Rauschkolb, John, Columbus, O.
Reilly, Thomas F., New York.
Riley, Cassius M., St. Louis.
Ritter, John, Chicago.
Robinson, William J., New York.
Simmons, George H., Chicago.
Slack, Henry R., La Grange, Ga.
Stern, Heinrich, New York.
Stewart, Zella White, Grand Forks, N. Dak.
Stoddard, F. R., Shelburne, Vt.
Spenzer, John George, Cleveland, Ohio.
Taylor, C. F., Philadelphia.
Taylor, J. J., Philadelphia.
Thrush, M. Clayton, Philadelphia.
Tompkins, W. W., Charleston, W. Va.
Tracy, Edward A., Boston.
Tyrode, Maurice Vejux, Boston.
Wallace, Frank H., Boston.
Waugh, William Francis, Chicago.
Wescott, W. C., Atlantic City, N. J.
Wheatley, F. G., No. Abington, Mass.
White, Wm. R., Providence, R. I.
Wilbert, M. I., Philadelphia.
Williams, Ennion G., Richmond, Va.
Wood, Horatio C., Jr., Philadelphia.
Yarbrough, Charles C., Detroit, Mich.

Section on Pathology and Physiology.

Aaron, Charles D., Detroit, Mich.
Adler, Isaac, New York, N. Y.
Anderson, August, Lincoln, Neb.
Ames, Burdett L., Brookline, Mass.
Baldwin, Frederick A., St. Louis, Mo.
Bartlett, C. J., New Haven, Conn.
Beates, Henry, Jr., Philadelphia, Pa.
Bellamy, William W., Dorchester, Mass.
Bierring, Walter L., Iowa City, Iowa.
Bishop, Louis Fargeres, New York, N. Y.
Black, Stanley P., Pasadena, Cal.
Bolin, I. Albert, Philadelphia, Pa.
Bowditch, H. P., Boston, Mass.
Cannon, Walter B., Cambridge, Mass.
Clements, Joseph, Nutley, N. J.
Coplin, W. M. L., Philadelphia, Pa.
Christian, Henry A., Boston, Mass.
Dearborn, George Van Ness, Boston, Mass.
Erlanger, Joseph, Baltimore, Md.
Folin, Otto, Cambridge, Mass.
Fox, Herbert, Philadelphia, Pa.
Frey, Max von, Wuerzburg, Germany.
Franz, Shepherd Ivory, Waverley, Mass.
Fulton, Frank T., Providence, R. I.
Gay, Frederick P., Boston, Mass.
Grauer, Frank, New York, N. Y.
Gould, E. H., Springfield, Mass.
Hall, Frank J., Kansas City, Mo.
Hall, Winfield S., Chicago.
Harris, H. F., Atlanta, Ga.
Hemmeter, John C., Baltimore, Md.
Hirsh, Jose L., Baltimore, Md.
Hodges, C. F., Worcester, Mass.
Jack, Geo. N., Penewa, N. Y.
Jackson, Fred K., Burlington, Vt.
Jackson, J. Henry, Barre, Vt.
Kinyoun, J. J., Glenolden, Pa.
Kirk, W. H., Pitts, Pa.
Kotz, A. L., Easton, Pa.
Knabe, Helen, Indianapolis, Ind.
Ladd, Louis W., Cleveland, Ohio.
Litterer, Wm., Nashville, Tenn.
Loeb, Leo, Philadelphia, Pa.
Longstreth, Morris, Philadelphia.
Longcope, W. T., Philadelphia, Pa.
Love, J. King, Easton, Pa.
Lombard, Warren P., Ann Arbor, Mich.
Lynch, J. L., Winona, Minn.
MacCallum, W. G., Baltimore, Md.
Macdonald, William G., Boston, Mass.
McClintock, Chas. T., Detroit, Mich.
McFarland, Joseph, Philadelphia.
Mallory, Frank B., Boston, Mass.
Mandlebaum, F. S., New York.
Meader, Isabel M., Watertown, N. Y.
Meyer, Gustave M., New York.
Meltzer, S. J., New York, N. Y.
Mortimer, W. Golden, New York.
Ohlmacher, A. P., Detroit, Mich.
Orton, Samuel T., Columbus, Ohio.
Ophüls, William, San Francisco, Cal.
Page, Calvin G., Boston, Mass.
Porter, Wm. T., Boston, Mass.
Pritchard, William Percival, Fall River, Mass.
Rankin, Watson S., Wake Forest, N. C.
Reitman, Ben. L., Chicago, Ill.
Rhodes, Frederick, A., Pittsburg, Pa.
Rich, Charles E., Lynn, Mass.
Robertson, H. E., Red Wing, Minn.
Roseman, M. J., Washington, D.C.
Redfearn, Joseph, Hudson, Mass.
Rosenberger, Randle C., Philadelphia, Pa.
Ruediger, Gustav F., Chicago, Ill.
Salant, William, New York, N. Y.
Smith, Claude A., Atlanta, Ga.
Smith, Theobald, Boston, Mass.
Smith, William T., Hanover, N.H.
Southard, E. E., Cambridge, Mass.
Steiner, Walter R., Hartford, Conn.
Stengel, Alfred, Philadelphia, Pa.
Stone, Warren B., Schenectady, N. Y.
Stevens, Harold Elmer Ellsworth, Boston, Mass.
Turner, Edward L. D., Providence, R. I.
Tyzzer, Ernest Edward, Wakefield, Mass.
Van Cott, Joshua M., Brooklyn, N. Y.
Vaughan, Victor C., Ann Arbor, Mich.
Welch, William H., Baltimore, Md.
Wenstrand, D. E. W., Milwaukee, Wis.
Wilson, Louis B., Rochester, Minn.
Wolbach, S. Burt, Boston.
Wood, Francis Carter, New York.
Wynn, Frank B., Indianapolis, Ind.

Miscellaneous.

THOSE WHO EXPRESSED NO PREFERENCE FOR ANY SECTION.

Abbe, Frederick R., Boston.
Adams, John D., Boston, Mass.
Adams, W. H., Northampton, Mass.
Adams, Wm C., Taunton, Mass.
Adams, Chas. S., Wollaston, Mass.
Ahearne, C. A., Lynn, Mass.
Ahearne, C. A. Jr., Salem, Mass.
Alexander, Clara J., Boston, Mass.
Alexander, Jas. R., Charlotte, N. C.
Aldrich, Albert C., Somerville, Mass.
Allen, Horatio C., New Bedford, Mass.
Allisous, Nathaniel, St. Louis,
Ames, Justin D., Norridgewock, Me.
Andrews, Harold V., Boston,
Ashley, W. W., Ouray, Colo.
Ayer, James B., Boston, Mass.
Bacon, Jonas E., Brockton, Mass.
Bacon, Newton S., Cambridge, Mass.
Babeman, F. A., Franklin, N. H.
Bailey, Wm. T., Boston.
Balboni, Gerardo M., Boston,
Baldwin, F. W., Danvers, Mass.
Baldwin, Herman T., Chestnut Hill, Mass.
Ballou, Charles O., Providence, R. I.
Barker, James F., Albany, N. Y.
Barnes, Allan F., Cambridge, Mass.
Barton, George C., Minneapolis, Minn.
Barstow, Henry T., Boston, Mass.
Bartlett, Charles Watson, Marshfield, Mass.
Bartlett, O. L., North Pittsfield, Mass.
Barrows, Benj. S., Hartford, Conn.
Bateman, Frank Elliot, Somerville, Mass.
Beaton, A. A., Franklin, N. H.
Benner, H. O., So. Framingham, Mass.
Bernard, B. L., Boston, Mass.
Berry, John J., Portsmouth, N. H.
Binney, Horace, Boston, Mass.
Blanchard, Irving, D., Hartford, Conn.
Blackwood, Jas. M., Newcastle, Pa.
Black, Frank W., Ligonier, Ind.
Bold, Valentine J., Philadelphia.
Bowles, Geo. H., Boston, Mass.
Bowen, J. T., Boston, Mass.
Boyd, Frank P., Northfield, Minn.
Bradley, William Edwin, Estherville, Iowa.
Bradford, E. H., Boston.
Bradshaw, Arthur B., Providence, R. I.
Bragg, Francis A., Foxborough, Mass.
Bragg, Leslie Raymond, Webster, Mass.
Brazill, Frank H., Greenville, R. I.
Briggs, A. R., Ashaway, R. I.
Briggs, Eldorado, Wilmington, Ohio.
Braum, Ida M., New Bedford, Mass.
Broughton, Arthur Nicholson, Boston, Mass.
Breck, Samuel, Boston, Mass.
Brown, D. C., Danbury, Conn.
Brown, David R., Danville, Vt.
Bower, Herbert H., Pleasant City, Ohio.
Borne, J. A., Everett, Mass.
Brickett, Beatrice H., Newton Center, Mass.
Brown, R. E., Everett, Mass.
Bromlee, H. F., Danbury, Conn.
Brush, Frederic, Boston, Mass.
Brownell, F. Y., Canajoharie, N. Y.
Bryant, Lewis L., Cambridge, Mass.
Bullard, Marguerite J., Putnam, Conn.
Bullard, William N., Boston.
Burns, H. H., Plymouth, Mass.
Butler, Richard B., Fall River, Mass.
Caisse, G. E., Lowell, Mass.
Callahan, Joseph Thomas, Woburn, Mass.
Calkin, B. H., Boston.
Candlish, A. H., New York.
Carriel, U. B., Jacksonville, Ill.
Carolin, Wm. T., Lowell, Mass.
Carpenter, E. G., East Greenwich, R. I.
Cantrell, C. E., Greenville, Tex.
Cavill, Lizzie Maud, Somerville, Mass.
Chase, Edwin L., Shrewsbury, Mass.
Chandler, Henry B., Boston.
Chandler, N. F., Medford, Mass.
Chartens, M. A., Worcester, Mass.
Charter, L. R., West Union, W. Va.
Cholerton, Herbert, Somerville, Mass.
Cheney, Frederick L., Wayne, Maine.
Chute, Arthur L., Boston.
Church, Chas. A., Millbury, Mass.
Clapp, Arthur M., Springfield, Mass.
Clark, Leonard B., Waverly, Mass.
Clark, O. H., Kalamazoo, Mich.
Cleaves, Jas. E., Medford, Mass.
Cluner, C. C., Boston.
Cobb, Farrar, Boston.
Cochrane, J. D., Saco, Maine.
Cook, E. C., York, Maine.
Coolp, Abbott, Chicopee, Mass.
Cooper, Almon, Brookline, Mass.
Collins, Orville W., South Framingham, Mass.
Commons, Ernest L., Richmond, Ind.
Condict, Arthur W., Dover, N. J.
Cook, Hugh F., Newark, N. J.
Connell, Arthur J., Fall River, Mass.
Councilman, W. L., Bay State Road, Mass.
Costello, John H., Boston.
Crawford, Sarah M., Boston.
Crisler, J., Jackson, Miss.
Crocker, John M., Cambridge, Mass.
Crafts, Nicholas M., North Adams, Mass.
Crosby, L. M., Boston.
Crowell, Andrew J., Charlotte, N. C.
Crum, Charles W. R., Jefferson, Md.
Crutcher, J. R., Memphis, Tenn.
Culbertson, N. W., Massillon, O.
Cushman, Andrew B., So. Dartmouth, Mass.
Cushman, Geo. T., Boston.
Curel, C. L., Pittsburg, Pa.
Cutts, Harry M., Brookline, Mass.
Daniel, Edwin A., Boston.
Davis, Gwilym G., Philadelphia.
Davidson, H. D., Springfield, Mass.
Davis, Josephine G., New York.
Day, Herbert C., Exeter, N. H.
Day, James A., Waltham, Mass.
Deane, F. Russell, Medford, Mass.
Delaney, Martin D., Alexandria, Va.
Devine, William H., Boston.
Dennett, Alonzo G., Lowell, Mass.
Dinsmoor, S. M., Keene, N. H.
Dipon, Wallace W., Portland, Me.
Dixon, Robt. B., Boston.
Dodge, Arthur M., Newton Center, Mass.
Doolittle, Edgar B., Hazelton, Pa.
Dubois, Eoline Church, Cambridge, Mass.
Duckering, Florence W., Boston.
Duckworth, Milton, Carolina, R. I.
Dunham, S. A., Buffalo, N. Y.
Dutcher, W. A., Boston.
Drake, Ervin T., Franklin, N. H.
Dreyfus, Edna W., Brookline, Mass.
Drohan, Jas. H., Brookline, Mass.
Earde, C. P., New York.
Eaton, W. G., Lowell, Mass.
Edgerton, Howard K., Lebanon, Tenn.
Edson, R. O'M., Boston.
Elbert, Samuel G., Wilmington, Del.
Ellis, A. G., Philadelphia.
Ellsworth, S. W., Quincy, Mass.
English, W. F., Saginaw, Mich.
Evans, Britton D., Morris Plains, N. J.
Everett, E. E., Boston.
Ewell, Ernest W., Lancaster, N. Y.
Fallon, F. F., Worcester, Mass.
Farnsworth, D. B., Springfield, Mo.
Farrington, Leander M., Brookline, Mass.
Faulkner, Herbert K., Keene, N. H.
Fenwick, J. R., Chelsea, Mass.
Ferguson, G. H., Saginaw, Mich.
Fernald, Chas. A., Boston.
Friedman, Leo Victor, Boston.
Flinn, Edward W., Dedham, Mass.
Fiske, Eustace L., Fitchburg, Mass.
Folsom, Chas. F., Boston.
Forbes, Edwin B., Detroit, Mich.
Forster, Robert W., Lawrence, Mass.

Fourtin, E. R., Waltham, Mass.
Fox, William Yale, Taunton, Mass.
Francis, Carleton S., Brookline, Mass.
French, L. Melville, Manchester, N. H.
Gregory, Geo. A., Boothbay Harbor, Maine.
Fretz, H. G., Philadelphia.
Gallinger, Ralph E., Concord, N. H.
Gallgher, Eugene T., Boston.
Garvin, Augustus H., Salem, Mass.
Garber, Frank W., Muskegon, Mich.
Gardner, Archibald Robert, Lowell, Mass.
Gardner, Charles M., Pittsfield, Mass.
Gardner, Harriet M., Cambridge, Mass.
Garland, George M., Boston.
Gaver, W. E., Mt. Airy, Md.
Gavin, John H., Boston.
Gavin, M. T., Boston.
Gay, Fritz W., Malden, Mass.
Geddes, Louis A. O., Beverly, Mass.
Gilbert, Daniel D., Boston.
Gillespie, R. L., Portland, Ore.
Gill, M. H., Hartford, Conn.
Glass, James, So. Framingham, Mass.
Gomberg, Max B., Providence, R. I.
Goodman, Samuel, Boston.
Gosten, N. R., Baltimore.
Grandson, Wilfred G., Charlestown, Mass.
Grant, J. Edward, New York.
Greeley, Jane Lincoln, Jamestown, N. Y.
Green, James S., Boston.
Greene, Ransom A., Lowell, Mass.
Greene, Thomas F., Boston.
Greenley, T. W., Baltimore.
Gregory, William E., Stroudsburg, Pa.
Griffin, Nathan L., Bradford, N. H.
Griswold, Vernon M., Fredonia, N. Y.
Grosvenor, Joseph W., Buffalo, N. Y.
Hall, H. Porter, Leominster, Mass.
Hamilton, F. A., Columbus, Ohio.
Hamlin, E. F., Statesville, N. C.
Hammond, Roland, Providence, R. I.
Hammond, Wm. J., Boston.
Handy, Harvey T., Apponang, R. I.
Hannaford, Chas. Wm., Portsmouth, N. H.
Hapgood, Lyman S., Cambridge, Mass.
Harlow, G. A., Tyngsboro, Mass.
Harnley, G. H., Barnstead, N. H.
Harriman, Polly, Lynn, Mass.
Harrington, Francis B., Boston.
Hatcher, Robt. A., New York.
Hatchett, William J., Somerville, Mass.
Hawkins, F. L., Meredith, N. H.
Hayes, C. H., Pittsburg, Pa.
Hayes, W. L., Cambridge, Mass.
Head, W. C., Johns, Ala.
Heaton, Thurman H., Cambridge, Mass.
Hefferman, M. T., Decatur, Ill.
Herb, Isabella C., Oshkosh, Wis.
Herriman, W. D., Chicago.
Hewitt, Wm. O., Attleboro, Mass.
Heyward II, H. Timbridge, Vt.
Hill, E. Dwight, Plymouth, Mass.
Hodgdon, Andrew H., Dedham, Mass.
Holt, H. Allen, Maine.
Honburg, W. O., Everett, Mass.
Hood, Mary G., Newton Center, Mass.
Hooker, Edward D., Arlington, Mass.
Houghton, S. A., Brookline, Mass.
Howe, Oliver H., Cohasset, Mass.
Howell, Thomas, Worcester, Mass.
Howland, Joseph B., Gardner, Mass.
Hunt, Wm. O., Newton, Mass.
Hunting, Nathaniel S., Quincy, Mass.
Hurley, Daniel B., Boston.
Hutchinson, C. P., Auburndale, Mass.
Ickes, E. M., Fremont, Ohio.
Ingalls, G. H., Boston.
Irish, J. C., Lowell, Mass.
Jackson, A. J., New Jersey
Jackson, Charles W., Monson, Mass.
Jennings, Curtis H., Fitchburg, Mass.
Johnson, Wellington, Augusta, Maine.
Jones, Geo. W., Chelsea, Mass.
Jones, Gilbert Norris, Wellesley Hills, Mass.
Jones, Grace, Toledo, Ohio.
Joslin, Fisher M., Voorheesville, N. Y.
Julinsky, C. F., Boston.
Keenehaus, F. A., Milwaukee, Wis.
Keller, F. J., Paterson, N. J.
Kelley, Jacob S., Providence, R. I.
Kelley, M. J., Watertown, Mass.
Kellogg, E. W., Milwaukee, Wis.
Kellogg, Frederic L., Roxbury, Mass.
Kennedy, A. G., Boston.
Kent, G. R., Newark, N. J.
Kirby, James R., Clinton, Mass.
Kern, L. C., Waverly, Iowa.
Kingsbury, Walter W., Malden, Mass.
Kinson, H. R., Filchville, Vt.
Kirk, T. T., Pittsburg, Pa.
Knowlton, John G., Exeter, N. H.
Knowlton, C. D., Boston.
Kyle, E. H., Ithaca, N. Y.
Lalor, W. P., Trenton, N. J.
Lawler, O. C., Chicago.
Lambert, F. De Forest, Salem, Mass.
Lamoureux, J. E., Lowell, Mass.
Langdon, Robert M., Englewood Cliffs, N. J.
Lard, Sidney Archer, Ipswich, Mass.
Lawrence, Arthur A., Natick, Mass.
Leahy, Thomas J., Cambridge, Mass.
Leard, John S. H., Boston.
Leavitt, B. C., Denver, Colo.
Leele, Julia E., New Haven, Conn.
Legg, Arthur T., Boston.
Lemaire, Wellard W., Lynn, Mass.
Leonard, Henry Fiske, Boston.
Leslie, C. F., Clyde, Kan.
Lett, Isidore, Boston.
Lewis, Maurice J., New York.
Lewis, Philip, Gorham, Maine.
Little, John M., Jr., Boston.
Loveland, J. E., Middletown, Conn.
Lowber, Alex, Wilmington, Del.
Lowd, H. M., Swampscott, Mass.
Lowell, Alverne P., Fitchburg, Mass.
Luehr, Edward, So. Chicago.
Lyman, Frank, Duluth, Minn.
Lyons, Herbert H., Fitchburg, Mass.
MacArthur, Charlotte B., Willard, N. Y.
MacArthur, George E., Ipswich, Mass.
McAdams, J. P., Lowell, Mass.
McBride, James H., Pasadena.
McCormick, Thos. J., Boston.
McCrimmon, F. W., Butte, Mont.
McDonald, James S., Boston.
McEvoy, George A., Roxbury, Mass.
McFee, N. D., Haverhill, Mass.
McIntire, Herbert B., Cambridge.
McKenna, Francis P., Boston.
McKenzie, John Robert, Cambridge, Mass.
McKnight, W. B., Mansfield, Tex.
McLeod, J. Scott, Boston.
McMann, Wm. H., Boston.
McMichael, W. B. Y., Boston.
McNulty, John J., New York.
Madden, W. D., Boston.
Magee, John A., Lanaan, Mass.
Mains, Charles F., Boston.
Mateur, Hugh D., Haverhill, Mass.
Malone, Charles, Boston.
Manning, Hugh R., Louisville, Ky.
Mansfield, Henry T., Needham, Mass.
Marlon, Horace E., Boston.
Martin, Jos. P., New Orleans, La.
Mason, Lewis D., Brooklyn, N. Y.
Mayberry, F. E., Boston.
Medalia, Leon S., Boston.
Melvin, J. T., Lagnache, Colo.
Meriwether, C. P., Walnut Ridge, Ark.
Metcalf, B. H., Winthrop, Mass
Middleton, Willis J., Quincy, Mass.
Miller, Vesta D., Needham, Mass.
Milliken, Herbert E., Waterville, Maine
Minot, Charles S., Boston
Minot, James Jackson, Boston.
Mitchell, Ezra, Lancaster, N. H.
Moffitt, Herbert C., San Francisco.
Mondino, José F., Montevideo, Uraguay Rep.
Moore, Alfred M., Brighton, Colo.
Moore, Elmer E., East Providence Center, R. I.
Moore, George Colton, Boston.
Morey, Gustavus B., Manchester, N. H.
Morrison, John S., Lafayette, Ind.
Morse, Charles A., New Market, N. H.
Murdock, F. W., Brockton, Mass.
Murphy, Charles O., New York.
Murphy, Fred T., Boston.
Murphy, Timothy J., Boston.
Nevers, Harry H., Bingham, Me.
Newbecker, Minerva M., Ord, Neb.
Newcomet, Wm. L., Philadelphia.
Nichols, John H., Tewksbury, Mass.
Norton, George E., Cambridge, Mass.
Novy, F. G., Ann Arbor, Mich.
Noyes, Ernest H., Newburyport, Mass.
Nute, Marion, Boston.
Nute, William H., Exeter, N. H.
O'Connor, John J., Holyoke, Mass.
Odell, R. W., Detroit, Mich.
Olin, F. H., Southbridge, Mass.
O'Malley, W. H., Kinsman, Ill.
Osborne, Caroline A., Worcester, Mass.
Osgood, Robert B., Boston.
O'Sullivan, John J., Lawrence, Mass.
Ovalock, M. G., Worcester, Mass.
Palmer, Lewis M., South Framingham, Mass.
Parker, Albert Munro, Boston, Mass.
Parker, Walter H., Boston.
Parkes, S. H., Reading, Mass.
Patee, W. H., Manchester, N. H.
Paten, Chas. C., Boston.
Patterson, C. F., Rye, N. H.
Patrick, Hugh, Chicago.
Payne, S. M., New York.
Peables, A. M., Auburn, Maine.
Peabody, F. B., Richmond, Me.
Pease, B. D., Greenville, N. H.
Pease, Edward Allen, Boston.
Perkins, Frank, Manchester, N. H.
Perkins, Frank B., West Derry, N. H.
Perry, Henry J., Boston.
Peters, John M., Providence, R. I.
Phillips, James Lee, Providence, R. I.
Phillips, J. R., Northfield, Minn.
Piersol, Geo. A., Philadelphia.
Pierson, John C., Hartford, Conn.
Pillsbury, Chas. W., Saco, Maine.
Pills, Rufus, Murfreesboro, Tenn.
Plimpton, Lewis Henry, Norwood, Mass.
Plummer, Frank W., Malden, Mass.
Porteus, Jas. S., Taylor, Pa.
Pothier, Joseph C., New Bedford, Mass.
Potter, F. W., So. Framingham, Mass.
Potter, William H., Boston.
Pratte, Arthur A., Keene, N. H.
Presley, W. J., Allendale, Mich.
Provan, Robert, Boston.
Putnam, Charles P., Boston.
Putnam, Ralph, Winchester, Mass.
Quint, Norman P., West Midway, Ala.
Record, Wellington, Wollaston, Mass.
Reed, Charles A. L., Cincinnati, Ohio.
Rees, Chas. M., Charleston, S. C.
Reynolds, H. M., Boston.
Rice, Robert A., Fitchburg, Mass.
Richarcson, Anna G., Boston.
Richardson, William L., Boston.
Richardson, Wm. S., Marlborough, Mass.
Ricketts, R. M., Cincinnati, Ohio.
Ricly, Compton, Baltimore.
Ring, A. H., Arlington Heights, Mass.
Ripley Fred J., Brockton, Mass.
Rollins, Chandler, Boston.
Robbins, Wm. Bradford, Boston.
Rodgers, Charles W., Dorchester, Mass.
Rogers, Charles C., Farmington, N. H.
Rogers, O. T., Boston
Rose, Alanson D., Providence, R. I.
Rudden, John T., Bellows Falls, Vt.
Ryan, D. M., Ware, Mass.
Ryan, Michael, Dayton, Ohio.
Sabine, G. K., Brookline, Mass.
Sala, St. Elmo M., Rock Island, Ill.
Sanborn, F. J., Spencer, Mass.
Sanders, W. H., Montgomery, Ala.
Sargeat, Geo. A., Boston.
Saunders, Geo., Superior, Wis.
Scales, Robert B., Dorchester, Mass.
Schneider, J. P., Palmer, Mass.
Schöney, L., New York.
Schultz, Baltz Overton, Louisville, Ky.
Sears, H. E., Beverly, Mass.
Sell, E. H. M., Summit, N. J.
Sellers, Ira J., Birmingham, Ala.
Seymour, F. W., Boston, Mass.
Shay, Thomas M., Boston.
Shea, John J., Beverly, Mass.
Shea, Michael I., Chicopee Falls, Mass.
Sheppard, S. A. D., Boston.
Sherman, H. J., Cleveland, Ohio.
Shiels, George Franklin, New York.
Silver, C. D., Plattsburg, N. Y.
Simmons, Channing C., Boston.
Simmons, H. M., Baltimore.
Sisler, G. W., Water Valley, Miss.
Skelton, C. W., Providence, R. I.
Skinner, John Oscar, Washington, D. C.
Slaymaker, J. M., Philadelphia.
Smith, Alfred C., Brockton.
Smith, Anna G., Toledo, Ohio.
Smith, William H., Boston.
Smith, F. L., Stafford Springs, Conn.
Smith, H. W., N. Scituate, R. I.
Smith, P. M., Boston.
Smith, R. S., Saegertown, Pa.
Smithwick, Marsena, P., Boston.
Spaulding, Roger, Duxbury, Mass.
Specht, Edmund E., New York.
Spofford, Henry M., Batavia, N. Y.
Sprowls, J. N., Claysville, Pa.
Sprowls, N. J., Northfield, Mass.
Stack, Chas. F., Hyde Park, Mass.
Staples, John W., Franklin, N. H.
Staples, C. H., Malden, Mass.
Stearns, Robt. T., New Bedford, Mass.
Stedman, Joseph C., Boston.
Stemsred, A. A., Dawson, Minn.
Stevens, F. H., Tenants Harbor, Maine.
Stevens, Edmund H., Cambridge, Mass.
Stevens, George B., Boston.
Stevens, Chas. B., Worcester, Mass.
Stewart, J. O., Cedarville, Ohio.
Stickney, Edwin P., Arlington, Mass.
Stickney, Geo. A., Beverly, Mass.
Stickney, V. H., Dickinson, N. D.
Stinchfield, A. W., Rochester, Minn.
Stodder, C. W., Marshfield Hills, Mass.
Storrs, Eckley R., Hartford, Conn.
Stubbs, H. J., Wilmington, Del.
Stubbs, Ralph P., Wilmington, Del.
Sturgis, John I., New Gloucester, Maine.
Sullivan, M. B., Dover, N. H.
Sullivan, Timothy D., Calais, Maine.
Swan, Eugene L., Brooklyn, N. Y.
Swan, Wm. D., Cambridge, Mass.
Swasey, Wm. B., Cornish, Md.
Sweetsir, C. L., Lowell, Mass.
Tanguay, J. Edgar, Woonsocket, R. I.
Taylor, J. George, Brookline, Mass.
Taylor, T. M., New York.
Tefft, Benj. F., Jr., Riverpoint, R. I.
Thayer, Augustus S., Portland, Maine.
Thomas, Benjamin, Palo Alto, Cal.
Thomas, G. F., Peebles, Ohio.
Thompson, Charles O., Boston.
Thompson, J. N., Boston.
Thorn, E. C., Jr., Deerfield, Mass.
Thornton, James Brown, Boston.
Tigh, Frederick, Newburyport, Mass.
Tilly, Wm. T., Pryor Creek, I. T.
Towne, Geo. Scott, Saratoga, N.Y.

Trautman, Rodney E., Logansport, Ind.
Trask, John W., Lynn, Mass.
Turman, A. E., Richmond, Va.
Turner, B. F., Memphis, Tenn.
Valleau, A. J., Wolcott, Vt.
Vanderhoof, F. D., Phelps, N. Y.
Vander Laau, John, Muskegon, Mich.
Vickery, Lucia, F., Boston.
Vobel, von F., Lebanon, N. H.
Walker, Robt. J., Chicago.
Waller, Charles Curtis, No. Troy, Vt.
Walker, Eloise, Hudson, N. Y.
Walker, W. Dacre, Peabody, Mass.
Wallin, Mathilda K., New York.
Walsh, Joseph, Augusta, Maine.
Ward, Parker M., Houlton, Me.
Ward, S. R., Richmond, Ill.
Washington, Walter S., Newark, N. J.
Wathen, Wm. H., Loulsville, Ky.
Watkins, R. Q., New York.
Wayland, A. Bledsoe, Crozet, Va.
Webber, Amos P., New Bedford, Mass.
Webber, Norman B., Manchester, N. H.
Webber, Wallace E., Lewiston, Maine.
Webster, George A., Boston.
Welch, E. H., Winsted, Conn.
Welch, John F., Quincy, Mass.
Welch, W. C., New Haven, Conn.
Wells, W. Scott, Adamsville, R. I.
Wentworth, Arthur H., Boston.
Wentworth, Ernest, Auburn, Me.
Wetherby, B. J., Wilkesbarre, Pa.
Wheatley, L. F., Meriden, Conn.
Wheeler, J. M., Burlington, Vt.
Whitaker, Clarence W., Worcester, Mass.
Whitaker, Wm. J., Pryor Creek, I. T.
White, R. C., Willimantic, Conn.
Whitney, H. B., Denver, Colo.
Whittier, F. N., Brunswick, Me.
Whorisky, John J., Cambridge, Mass.
Wilkinson, A. M., St. James, Mich.
Willard, W. G., Chicago.
Williams, Francis H., Boston.
Williams, Frank P., Boston.
Williams, Geo. S., Muskegon, Mich.
Williams, Harold, Boston.
Wood, Albert, Worcester, Mass.
Woodman, Daniel N., Yarmouth, Maine.
Woodward, Johnson R., Oxford, Mass.
Woodworth, D. S., Fitchburg, Mass.
Worsham, B. M., Austin, Texas.
Yates, Cora G., Pawtucket, R. I.
York, George Wm., Buffalo, N. Y.
Zanes, D. Wayland, Boston.

Miscellaneous.

B. THOSE WHO MARKED MORE THAN ONE SECTION.

Adams, John Boston.
Albee, George M., Worcester, Mass.
Allen, Bradford, Nashua, N. H.
Auten, Frank E., Belleville, Ill.
Averell, Charles W., North Reading, Mass.
Baker, David E., Newtonville, Mass.
Baldwin,, Sanford C., S. Framingham, Mass.
Baird, J. M., Boston.
Barney, B. A., Hornell, N. Y.
Barrett, Albert M., Ann Arbor, Mich.
Bayley, N. R., Haverstraw, N. Y.
Beam, David R., Conshohocken, Pa.
Burt, Frank L., Boston.
Bicknell, Ralph E., Swampscott, Mass.
Blankenhorn, H., Orrville, Ohio.
Boutwell, Horace Keith, Winchester, Mass.
Bontecou, R. B., Troy, N. Y.
Boynton, Perry S., New York.
Buettner, John J., Syracuse, N. Y.
Butts, Harry, Bangor, Maine.
Burt, J. D., Farmersville, Texas.
Burlingame, D. E., Elgin, Ill.
Bradley, W. J., Cedar Rapids, Ia.
Brawley, R. V., Salisbury, N. C.
Briggs, Henry Harrison, Asheville, N. C.
Brailsford, A. Willie, Mullins, S. C.
Brock, R. V., Waynesburg, Pa.
Brown, Francis H., Boston.
Brown, Nathan W., Toledo, Ohio.
Cabot, Arthur T., Boston.
Cadwell, C. T., Poughkeepsie, N. Y.
Campbell, M. G., Atlanta, Ga.
Carbaugh, Eugene, Kansas City, Mo.
Cary, E. H., Dallas, Tex.
Carrall, James W., Buffalo, N. Y.
Carruth, Sidney S., Dorchester, Mass.
Cathcart, R. S., Charleston, S. C.
Chadwick, Henry D., Waltham, Mass.
Chambers, T. R., Jersey City, N. J.
Chamberlain, M. L., Boston.
Chapman, W. L., Providence, R. I.
Chase, Julian A., Pawtucket.
Clarke, Augustus P., Cambridge, Mass.
Cleland, James, Jr., Detroit, Mich.
Clough, O. F., Poultney, Vt.
Cobb, Charles Henry, Boston.
Colt, Henry, Pittsfield, Mass.
Conner, Annie L., Philadelphia.
Conboy, Philip, Rochester, N. Y.
Congdon, Charles E., Nashua, N. H.
Connor, Chas. F., New Bedford.
Corser, J. B., Scranton, Pa.
Currie, J. Z., Cambridge, Mass.
Cruton, Samuel Boyce, Syracuse, N. Y.
Craig, Joseph D., Albany, N. Y.
Croskey, John Welsh, Philadelphia.
Cronin, Thomas J., Worcester, Mass.
Crumb, C. W., Utica, N. Y.
Cronin, Michael J., Boston.
Croston, J. F., Haverhill, Mass.
Demarest, Fred F. C., Passaic, N. J.
Dickeson, Morton P., Media, Pa.
Doty, E. A., Oxford, Iowa.
Dolan, W. A., Fall River, Mass.
Dougherty, S. C., Paris, Ky.
Dougherty, Thos. J., Somerville, N. H.
Duckett, John Davis, Houston, Texas.
Dwinell, W. G., Pawtucket, R. I.
Eagleton, Wells P., Newark, N. J.
Eastman, F. P., South Bend, Ind.
Edwards, G. P., Nashville, Tenn.
Ellis, Dion S., Worcester, Mass.
Ely, William S., Rochester, N. Y.
Ewen, W. L., Alloway, N. J.
Fair, John F., Cambridge, Mass.
Farr, E. L., Boston.
Fay, J. M., Northampton, Mass.
Feley, Charles P., Cambridge, Mass.
Fish, Fred Starr, Lime Ridge, Wis.
Fishbein, Louis, Boston.
Fletcher, R. W., South Boston.
Formad, Marie K., Philadelphia.
Foster, E. E., New Bedford, Mass.
Foster, John M., Denver, Colo.
Foster, W. Brownley, Richmond, Va.
Franz, A., Holyoke, Mass.
French, Charles E., Lowell, Mass.
French, Charles L., Clinton, Mass.
Garland, W. R., Plymouth, N. H.
Gildersleeve, C. C., E. Woodstock, Conn.
Goodman, Thos. B., Cobden, Ill.
Gould, Alfred H., Boston.
Goux, L. J., Detroit, Mich.
Gorham, Geo. H., Bellows Falls, Vt.
Gray, F. S., Troy, Vt.
Grant, Jas. G., Akron, Ohio.
Grant, Geo. H., Richmond, Ind.
Greeley, G. H., Merrimack, N. H.
Greene, Edward M., Boston.
Griggs, John B., Stamford, Conn.
Gwathmey, James T., New York.
Haddock, Charles W., Beverly, Mass.
Hastings, T. W., New York.
Hayes, Frederick L., Brookline, Mass.
Harper, Jas. G., Carbondale, Pa.
Hart, Frank E., Canton, Ohio.
Harrold, E. O., Marion, Ind.
Hawley, A. W., Seattle, Wash.
Hayes, E. S., Eau Claire, Wis.
Hebbard, Ellary C., Boston.
Highsmith, J. F., Fayetteville, N. C.
Hill, J. Frederick, Waterville, Maine.
Hodges, Fletcher, Indianapolis, Ind
Hodgdon, E. P., Laconia, N. H.
Horne, B. Frank, Conway, N. H.
House, Charles F., Painesville, Ohio.
Howard, C. W., Shoreham, Vt.
Howard, E. Clarence, Philadelphia.
Howe, Joseph D., Cheshire, Mass.
Huddle, Garland E., Bowling Green, Ky.
Hughes, Laura A. C., Boston.
Huntington, Geo., Hopewell, Jct., N. Y.
Jackson, A. W., Milford, Mass.
Johnson, Cyrus U., West Berkshire, Vt.
Joves, Arthur T., Providence.
Jersey, J. W., Greenville, S. C.
Kassabian, Nathan H., Coopersville, Mich.
Kelley, Joseph H., Boston.
Kelley, Daniel J., Worcester, Mass.
King, Chas. Lee, Pasadena, Cal.
Kline, W. J. K., Greensburg, Pa.
Kittridge, Frank E., Nashua, N. H.
Kirkpatrick C. F., Ashland, Neb.
Kosmak, Geo. W., New York.
Kuhn, Chas. F., Detroit, Mich.
Leahey, George H. A., Lowell, Mass.
Lee, Edward Wallace, New York.
Lee, Jack, Columbus, Ky.
Lindley, D. C., New Castle, Pa.
Lockhart, Joseph S., Cambridge, Mass.
Lovell, D. B., Worcester, Mass.
Lowney, John F., Fall River, Mass.
Lynch, Robert J., Bridgeport, Conn.
Mackie, Geo., Anteson, Mass.
Magee, R. S., Topeka, Kan.
Marsh, Arthur W., Worcester, Mass.
Marshall, N. M., Portland, Me.
McAllister, J. C., Ridgway, Pa.
McElfarth, C. W., Baltimore.
Mcintosh J. R., St. John, N. B.
McKeeby, W. C., Syracuse, N. Y.
McNaughton, F. H., Denver, Colo.
McRady, F. S., Petersburg, Tenn.
Meisenbach, A. H., St. Louis.
Morgan, Chas. E., Somerville, Mass.
Moulton, W. B., Portland, Maine.
Morse, Vernon H. C., Cambridge, Mass.
Murphy, Frances C., Boston.
Munroe, J. P., Davidson, N. C.
Newhall, Herbert W., Lynn, Mass.
Neuman, Leo H., Albany, N. Y.
Nichols, E. M., Barton, Vt.
Nichols, J. T. G., Cambridge, Mass.
Norris, Albert L., Cambridge, Mass.
Norris, Albert P., Cambridge, Mass.
Northley, H. S., Joliet, Ill.
O'Connor, F. H., Brattleboro, Vt.
Otis, E. F., Lake George, N. Y.
Otis, Edward O., Boston.
Panzner, E. J., Detroit, Mich.
Partridge, H. G., Providence, R. I.
Paulish, Andrew S., Kansas City, Kan.
Peck, George A., New Rochelle, N. Y.
Peck, A. T., Spencer, Mass.
Pennell, W. J., Auburn, Maine.
Petit, A. W., Nashua, N. H.
Phillips, C. J., Chicago.
Pond, Gardner Perry, San Francisco.
Prescott, C. D., New Bedford, Mass.
Prescott, Henry D., New Bedford, Mass.
Purinton, H. H., Lewiston, Me.
Putnam, W. E., Whiting, Ind.
Pyfer, Howard F., Norristown, Pa.
Quimby, Thos. F., Minneapolis, Minn.
Richardson, Chas. H., Pittsfield, Mass.
Ring, Henry W., New Haven, Conn.
Robinson, W. D., Philadelphia.
Rogers, John, New York.
Ross, George G., Philadelphia.
Rose, John H., Hartford, Conn.
Rose, Henry A., Fall River, Mass.
Rondi, Arthur M., Norton, Mass.
Rowe, G. D., Boone, Iowa.
Rowen, Henry S., Boston.
Rucker, W. C., Vineyard Haven, Mass.
Ruml, W., Cedar Rapids, Iowa.
Sachs, Bernard, New York.
Sanborn, G. P., Boston.
Sanderson, A. J., San Francisco.
Sanes, K. I., Pittsburg, Pa.
Scanlan, Thos. J., Boston.
Schell, J. T., Philadelphia.
Schuffield, H. M., Canton, Ohio.
Sedgwick, Otis White, Wales, Mass.
Schneck, Jacob, Mt. Carmel, Ill.
Sheffield, Herman B., New York
Shirk, G. W., Cornwall-on-Hudson, N. Y.
Silver, Henry W., New York
Simmons, B. B., Talledega, Ala.
Smith, Owen, Portland, Maine.
Smirnow, Louis, Bridgeport, Conn.
Snow, Morton, Chicago.
Southard, W. F., San Francisco.
Sullivan, Edward C., Brooklyn, N. Y.
Sullivan, F. A., Haverhill, Mass.
Stein, Geo. W., Norristown, Pa.
Stone, D. E., Mt. Pleasant, Md.
Stone, H. H., Phoenix, Ariz.
Stuart, Francis H., Brooklyn, N. Y.
Taylor, James, Jr., Worcester, Mass.
Tinkham, H. C., Burlington, Vt.
Tirry, C. C., South Bend, Ind.
Thompson, David, Denver, Colo.
Thomsen, Wm. J., Portage, Wis.
Totman, D. M., Syracuse, N. Y.
Tower, Frederick R., Boston.
Townsend, David, Brookline, Mass.
Truesdale, Philemon E., Fall River, Mass.
Tully, Edw. J., Fitchburg, Mass.
Walker, J. B., Effingham, Ill.
Walker, J. E., Hornell, N. Y.
Walsh, Frederick W., Rockville, Conn.
Ware, Martin W., New York.
Webster, J. P., Chicago.
West, Edward G., Boston, Mass.
Wilbur, H. G., Fall River, Mass
Wilkinson, Oscar, Washington, D. C.
Williams Joseph, Boston.
Wheeler, H. H., Indianapolis, Ind.
White, H. Warren, Boston.
Woodruff, L., Columbus, Ohio.
Worthington, H. C., Oak Park, Ill.
Wylie, Ella R., Boston.
Young, Edgar W., Everett, Mass.

Marriages

ERNEST E. DAVIS, M.D., to Miss Frances Ross, both of Avon, Ill., June 2.

JOHN A. GIBSON, M.D., Leesburg, Va., to Miss Frances Louise Perry, June 2.

MAX R. DINKELSPIEL, M.D., to Miss Ida Kline, both of Philadelphia, June 6.

WILLIAM H. DALEY, M.D., to Miss Rae M. O'Dowd, both of Chicago, June 12.

CLYDE C. WINTER, M.D., Presho, S. D., to Miss Lena Sutter of St. Louis, June 5.

Daniel G. Monaghan, M.D., to Miss Mary Sullivan, both of Denver, Colo., June 13.

Frank Potts, M.D., Toluca, Ill., to Miss Mabelle Thompson of Lacon, Ill., June 14.

O. B. Hawley, M.D., to Miss Elizabeth Burdum, both of Corning, Iowa, May 29.

J. D. Motheral, M.D., Cotulla, Texas, to Miss Julia Howard, Devine, Texas, June 12.

J. de Voine Guyot, M.D., to Miss Flora May Harrison, both of Philadelphia, May 29.

Rodney E. Troutman, M.D., to Miss A. Twells, both of Logansport, Ind., June 2.

Stewart R. Roberts, M.D., Oxford, Ga., to Miss Louise Welch of Atlanta, June 6.

Harry Silsby Finney, M.D., Rawlins, Wyo., to Miss Mollie Beeler of Omaha, June 9.

Joseph D. Cain, M.D., Indianapolis, to Miss Mary Fallon Rainey of Chicago, June 5.

Harry Cornwell Hays, M.D., to Miss Mary Mohr, both of Kansas City, Mo., June 14.

N. A. Archer, M.D., Jellico, Tenn., to Miss Rubie Gatliff of Williamsburg, Ky., recently.

John W. McDonald, M.D., Dubuque, Iowa, to Miss Blanche O'Brien of St. Louis, June 5.

Alfred Cramer, M.D., to Miss Anna Browning Doughten, both of Camden, N. J., June 9.

James Mac Evitt, M.D., Brooklyn, N. Y., to Miss Elizabeth Mary Phelan, Chicago, June 13.

Frank Albert Ford, M.D., Altoona, Pa., to Miss Rachel Boyd Dunn of Philadelphia, June 20.

Thomas G. Hawley, M.D., to Miss Marie Christiana Gerhard, both of St. Louis, May 3.

S. S. Kosfr, M.D., Sunbury, Pa., to Cynthia E. Williams, M.D., of Buffalo, N. Y., June 1.

John W. Elder, M.D., Albuquerque, N. M., to Miss Minnie Lay, at Richmond, Va., June 14.

Frank R. Hansen, M.D., Lakefield, Minn., to Miss Helen Chapin of Cresco, Iowa, June 7.

William H. Witherstine, M.D., Rochester, Minn., to Miss Ida Dahlem of Joliet, Ill., June 1.

E. O. Dennis, M.D., Zanesville, Ohio, to Miss Elizabeth Eakin of Columbus, Ohio, June 6.

Curtis M. Wray, M.D., Monitor, Ind., to Miss Gertrude Skinner of Lafayette, Ind., June 5.

William Emory Hyskell, M.D., Wilcox, Pa., to Miss Mary Hays Bell of Altoona, Pa., June 6.

Henry Durst Jones, M.D., Schleswig, Iowa, to Miss Anna Mae Hall of Denison, Iowa, June 3.

Eugene Harris, M.D., Seattle, Wash., to Miss Marybell Hamill of Massillon, Ohio, May 24.

C. R. Fishel, M.D., Dellroy, Ohio, to Miss Emma Maude Hudson of Delaware, Ohio, June 7.

Josephine S. Lindstrom, M.D., and Robert W. Stickelberger, both of Oberon, N. D., June 13.

Guy David Engle, M.D., Wilkinsburg, Pa., to Miss Miriam Emily Young of Pittsburg, June 6.

Henry Houghton, M.D., New York City, to Miss Caroline Carmack of Columbus, Ohio, June 9.

Hugh C. Arey, M.D., Merriam Park, St. Paul, Minn., to Miss Mabel Lane of Minneapolis, June 20.

Frank J. Duffey, M.D., Brooklyn, N. Y., to Miss Joan Reeves, at Washington, D. C., June 6.

Robert W. Miller, M.D., Martinsburg, Va., to Miss Grace McCraney, Washington, D. C., June 1.

E. G. Wilson, M.D., Moscow, Mich., to Miss Mary Kries of Peoria, Ill., at Somerset, Mich., May 27.

John D. Frazer, M.D., Singerglen, Va., to Miss Sarah Penn Farish of Orange County, Va., June 6.

Jay C. Ducker, M.D., to Miss Nina E. Cheney, both of Belleville, Kan., at Denver, Colo., June 5.

Louis B. Henkel, Jr., M.D., Annapolis, Md., to Miss Etta Hamlin Rayle, at La Plata, Md., June 6.

George Wilbert Cottis, M.D., Batavia, N. Y., to Eliza A Fancher, M.D., of Albion, N. Y., June 1.

Mathew Thomas Rothwell, M.D., Telluride, Colo., to Miss Rowena Gaynor Wittle of Denver, June 6.

Thomas E. Peters, M.D., Flora, Ind., to Miss Ella Withers of Decatur, Ind., at Anderson, Ind., May 31.

Charles W. Fleenor, M.D., Holston Valley, Tenn., to Miss Josephine St. John of Bristol, Va., June 20.

Arthur Myles Ward, M.D., Boston, Mass., to Miss Diadama Irene Sharp of Houlton, Maine, June 6.

Theodore H. Hoch, M.D., Michigan City, Ind., to Miss Lenora MacNiven of Worcester, Mass., June 18.

William E. McClanahan, M.D., to Miss Susie Cecilia McGuinness, both of Baltimore, Md., Nov. 26, 1905.

William R. Murray, M.D., Minneapolis, Minn., to Miss Elizabeth Chapin Eaton of Nyack, N. Y., June 9.

Horace M. Fritz, M.D., Quincy, Pa., to Miss Irene A. Relly of Quincy Township, Pa., at Waynesboro, June 2.

Thomas Benton Fisher, M.D., Dallas, Texas, to Miss Susie Gahagan of Waxahachie, Texas, at Dallas, June 6.

Clarence Duncan Cudworth, M.D., Millers Falls, Mass., to Miss Florence Beckner of Johnson City, Tenn., June 5.

Egbert Wilson Sproule, M.D., Peterson, Iowa, to Miss Gertrude Gallaher of Toronto, Ont., at Spencer, Iowa, June 6.

Hal Clement Wyman, M.D., to Miss Lulu Anita Weeks, both of Detroit, Mich., at Mount Vernon, N. Y., June 12.

Deaths

George Augustus Ketchum, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1846; a heroic worker during the yellow-fever epidemic of 1847-48; one of the organizers of the Medical College of Alabama, and dean and professor of theory and practice of medicine in that institution; one of the four delegates sent to the convention at Montgomery in 1861, which passed the ordinance of secession; surgeon of the Fifth Alabama Infantry, C. S. A., during the Civil War; a member of the general council of Mobile; a prominent figure in the organization of the Alabama Medical Association; for 35 years president of the Mobile Board of Health, died at his home in Mobile, May 29, after an illness of several weeks, aged 81.

William Martin Findlay, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1867; a member of the American Medical Association, Medical Society of the State of Pennsylvania, Blair County Medical Society, and Altoona Academy of Medicine; one of the most prominent physicians of western Pennsylvania; elected a delegate to the American Medical Association at its Boston meeting; a member of the medical staff of the Altoona Hospital, and for several years representative from Blair County of the State Board of Health; a veteran of the Civil War; twice a member of the local school board, died suddenly at his home in Altoona, from cerebral hemorrhage, June 2, aged 63.

Mary Putnam Jacobi, M.D. Ecole de Médecine, Paris, France, 1871; the first woman to be admitted to the Paris School of Medicine; one of the most distinguished woman physicians of her time; a notable writer on educational and kindred subjects; the first woman to be admitted to membership in the New York Academy of Medicine; some-time professor of materia medica in the Woman's Medical College of New York and in the Post-Graduate Medical School; for 12 years dispensary physician at Mount Sinai Hospital, and visiting physician at St. Mark's Hospital, died at her home in New York City, June 10, after an illness of more than four years, aged 63.

Emerson M. Sutton, M.D. Bellevue Hospital Medical College, New York, 1891; a member of the American Medical Association, Western Surgical and Gynecological Association, Illinois State, Peoria County, Peoria City and Military Tract medical societies; staff surgeon for the Cottage and Deaconess Hospital, Peoria, and local surgeon for the Iowa Central and Chicago & Northwestern Railways; one of the most prominent surgeons and gynecologists of Central Illinois, fearing insanity, committed suicide, June 19, by shooting himself through the head.

Robert Shoemaker Ives, M.D. Medical Institution of Yale College, New Haven, Conn., 1866; a member of the Connecticut Medical Society, New Haven County Medical Society, and New Haven Medical Society; for many years a member of the American Medical Association; consulting physician to the New Haven Hospital; a prominent practitioner of New Haven, died at his home in New Haven, June 9, from appendicitis, a few hours after operation, aged 64.

Samuel H. Lowry, M.D. Bellevue Hospital Medical College, New York City, 1873; a member of the board of censors of the Madison County (Ala.) Medical Society; formerly vice-president and censor of the Medical Society of the State of

Alabama, and for many years health officer of Huntsville, died at his home in that city, June 7, from paralysis, after a long illness, aged 56.

John Davis Hawkes, M.D. Medico-Chirurgical College of Philadelphia, 1904, of Philadelphia; vice-president of the Pancoast Anatomical Society, and member of Pierce Neurological Society, Mann Orthopedic Society and Fox Ophthalmological Society, died at Saranac Lake, N. Y., April 9, after an illness of several months, from tuberculosis, aged 27.

Donald McLean Barstow, M.D. College of Physicians and Surgeons in the City of New York, 1892; a member of the New York State Medical Association; assistant surgeon of the New Amsterdam Eye and Ear Hospital, and a prominent eye and ear specialist of New York City, died suddenly in Portland, Maine, June 9, aged 38.

Jason B. Roach, M.D., for 30 years a practitioner of Augusta, Ohio; a member of the Ohio legislature in 1858; who served three years with the One Hundred and Twenty-sixth Ohio Volunteer Infantry during the Civil War, died at his home in Alliance, Ohio, March 18, from uremia, after an illness of a year, aged 79.

George Hunt Hibler, M.D. College of Physicians and Surgeons in the City of New York, 1904; formerly house surgeon in the Harlem Hospital, and also in the Katonah (N. Y.) Sanatorium, died at the home of his mother in Morristown, N. J., March 31, from tuberculosis, after an illness of a year and a half, aged 27.

Charles Victor Starke, University of Upsala, Sweden, 1889; a member of the American Medical Association; for two years a resident of the Argentine Republic, and since 1892 a practitioner of Rockford, Ill., died at his home in that city, June 10, from nephritis, after a protracted illness, aged 53.

Ephraim McDowell Coffey, M.D. Transylvania University, Medical Department, Lexington, Ky., 1852; division surgeon in the Confederate service during the Civil War; formerly sheriff and treasurer of Platte County, Mo., died at his home in Platte City, June 6, after an illness of two weeks, aged 77.

Henry C. Kasselman, M.D. Universityof Michigan Homeopathic Medical College, Ann Arbor, 1883, for many years a member of the faculty of the Southwestern Homeopathic College, Louisville, Ky., died at his home in Midway, Ky., May 25, from tuberculosis, after a long illness, aged 45.

Morgan M. Lowe, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1885; a member of the parish and state medical societies; a well-known physician of Algiers, La., died at his home in that city, June 4, from appendicitis, after an illness of one week, aged 50.

John Adams Wakeman, M.D. Worthington Medical College, Medical Department of Ohio University, Worthington, Ohio, 1838; Hahnemann Medical College, Philadelphia, 1853; formerly of Centralia, Ill., died at the home of his daughter in Minneapolis, Minn., June 8, aged 91.

Emil H. Klueber, M.D. Medical Department of the University of Iowa, Keokuk, 1863; during the Civil War surgeon of an Illinois regiment; for about 20 years a practitioner of Topolobampo, Mexico, was murdered while attending an Indian patient, Dec. 23, 1905.

Julian Carroll Kendrick, M.D. University of Louisville, Medical Department, 1877; of Downey, Cal.; for two years in the Confederate service during the Civil War; coast surgeon general of the United Confederate Veterans, died at Los Angeles, Cal., May 31, aged 59.

Harry Lee Hinds, M.D. Medical College of Alabama, Mobile, 1904, a practitioner of Jackson County, Ala., died at the City Hospital, Huntsville, April 21, after an operation for tuberculosis of the hip, from which he had suffered for a considerable time, aged 24.

Alexander B. Newton, M.D. Rush Medical College, Chicago, 1867; a member of the La Crosse County Medical Society; hospital steward throughout the Civil War, died at his home at Bangor, Wis., June 6, after an illness of more than a year, aged 63.

James G. La Roe, M.D. Bellevue Hospital Medical College, New York City, 1873, a member of the board of health of Greenpoint, Brooklyn, died at his home in that city, June 2, from cerebral hemorrhage, after an illness of four days, aged 55.

Charles H. Rockwood, M.D. Cleveland Medical College, Medical Department of Western Reserve College, Cleveland, 1869, formerly a practitioner of Amherst, Ohio, died at the home of his daughter in Lorain, Ohio, June 2, from cerebral hemorrhage, aged 65.

Samuel P. Boardman, M.D. University of Wooster, Medical Department, Cleveland, Ohio, 1897; a prominent practitioner of Springfield, Ill., while a sufferer from melancholia, committed suicide by drowning in the Springfield reservoir, June 1.

Frederick W. Deichman, M.D. Eclectic Medical College of the City of New York, 1873; a surgeon during the Franco-Prussian War; a member of the Bristol Medical Association, died at his home in Bristol, Conn., June 6, from nephritis, aged 57.

Arthur Thomas Cheatham, M.D. Jefferson Medical College, Philadelphia, who retired from practice 25 years ago on account of ill-health, died in his home at Atlanta, Ga., March 25, from heart disease, after an illness of 24 hours, aged 74.

James M. McAdams, M.D. Miami Medical College, Cincinnati, 1871, a Confederate veteran, died May 30, at his home in Nevada, Mo., from pneumonia, following an accident in which he suffered a fracture of several ribs, aged 74.

William E. Phillips, M.D. Eclectic Medical Institute, Cincinnati, 1854; Jefferson Medical College, Philadelphia, 1857; a surgeon during the Civil War, died at his home in Wyoming, Ky., May 30, from appendicitis, aged 76.

George Oscar Jobes, for many years a practitioner of Indiana; state sanitary officer during the Civil War, died at the City Hospital, Indianapolis, from arteriosclerosis, February 16, after an illness of two weeks, aged 83.

John Frederick Scoresby Eastgate, M.D. College of Physicians and Surgeons in the City of New York, 1880, died at his home in Ellenville, N. Y., June 2, from pulmonary edema, after an illness of two weeks, aged 49.

Charles A. Hoff, M.D. Miami Medical College, Cincinnati, 1874, some-time on the staff of the Ohio State Hospital, Dayton, died at his home in St. Louis, June 11, from rheumatism, after an illness of five years, aged 56.

Thomas Watkins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868, a Confederate veteran, died at his home in Memphis, Tenn., May 31, after an illness of nearly a year, aged 65.

Edwin T. Jones, M.D. New York University, New York City, 1883, of Queens, Long Island, N. Y., acting chief of staff of the Jamaica Hospital, died suddenly in Utica, N. Y., June 11, from cerebral hemorrhage, aged 56.

Henry Austin Carrington, M.D. Harvard University Medical School, Boston, 1848, a member of the Bristol (Conn.) Medical Association, died at his home in Bristol, June 9, after a long period of invalidism, aged 79.

Frederick R. Hodgson, M.D. Saginaw Valley Medical College, Saginaw, Mich., 1900, of Rives Junction, Mich., died at the City Hospital, Jackson, Mich., June 2, from appendicitis, after a short illness, aged 30.

Joseph Fuller Durant, M.D. Eclectic Medical Institute, Cincinnati, 1854, for several years alderman of Quincy, Ill., died at his home in that city, June 5, from heart disease, after a short illness, aged 74.

Arthur S. Sanders, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1881, died at his home in Hot Springs, Ark., June 7, from septicemia, due to a carbuncle of the neck, aged 59.

Sebastian Hiriart, M.D. Tulane University of Louisiana, 1896, of Plaquemine, La., died at the New Orleans Sanitarium, March 17, from pleurisy with effusion, after an illness of several months, aged 59.

John H. Schiermann, M.D. Medical Department of Washington University, St. Louis, 1892, for several years a clinical instructor in that institution, died at his home in St. Louis, June 5, aged 41.

Frank Curtis Dolley, M.D. University of Vermont, Burlington, a member of the Maine Medical Association, was found dead in bed in Casa Grande, Ariz., from heart disease, March 16, aged 50.

Howard Phillips, M.D. Long Island College Hospital, Brooklyn, N. Y., 1882, died at his home in Stillwater, N. Y., April 21, from hemorrhage of the stomach, after a long illness, aged 54.

Warren H. Thomas, M.D. Hahnemann Medical College and Hospital, Chicago, 1877, of Elkhart, Ind., died suddenly from angina pectoris while making a professional call, June 7, aged 63.

Thaddeus E. Sanger, M.D. Hahnemann Medical College, Philadelphia, 1868, of Littleton, N. H., died in a hospital in Boston, June 6, from heart disease, after an operation, aged 74.

Millard F. Lee, M.D. Bellevue Hospital Medical College, New York City, 1876, of Columbus, Ohio, died at the Shepherd Sanitarium in that city, June 4, from tuberculosis, aged 58.

Joseph Bruner, M.D., one of the oldest practitioners of Mecklenberg County, N. C., died suddenly from heart disease while making a professional call near Matthews, May 2, aged 66.

Murdoch McGregor, M.D. Harvard University Medical School, Boston, 1863, a surgeon in the Army during the Civil War, died at his home in River Port, N. S., March 6, aged 70.

Hobart Richardson, M.D. Dartmouth Medical School, Hanover, N. H., 1868, died at his home in Benton, Maine, May 28, from cerebral hemorrhage, after an illness of one week.

John Quincy Adams French, M.D., a practitioner of Hillsboro, N. H., for more than 50 years, died in Hillsboro Upper Village, April 24, two days after an accident, aged 78.

Elisha Ely, M.D. College of Physicians and Surgeons in the City of New York, 1848, a pioneer practitioner of California, died at the home of his daughter in Redlands, May 8.

George B. Harry, M.D. Hahnemann Medical College, Philadelphia, a surgeon in the Spanish-American War, formerly of Dolington, Pa., died recently in Oklahoma, aged 32.

George W. Draper, M.D. Albany (N. Y.) Medical College, 1858, died at his home in Syracuse, N. Y., June 8, from nephritis, after an illness of more than a year, aged 73.

William H. Hugg, a pioneer practitioner of Portland, Mich., died at his home in that place, April 30, from tumor of the intestines, after an illness of one year, aged 80.

Enos S. Swain, M.D. Kentucky School of Medicine, Louisville, 1860, a surgeon in the federal service during the Civil War, died recently at his home in Smithville, Ky.

George Wigg, M.D. Essex Homeopathic Medical Institute, Colchester, England, 1863, died suddenly at his home in Portland, Ore., May 31, from heart disease, aged 68.

Thomas C. Rhoads, M.D. New York University, New York City, 1865, formerly city physician of Weehawken, N. J., died suddenly in New York City, May 30, aged 62.

Frederick Goodwin, M.D. Vermont Medical College, Rutland, 1889, died at his home in Bayfield, N. B., February 11, from nephritis, after a long illness, aged 45.

Gilbert L. Gifford, M.D. Hahnemann Medical College, Philadelphia, 1863, died suddenly at his home in Hamilton, N. Y., from heart disease, June 11, aged 64.

John L. Simpson, M.D. Atlanta (Ga.) Medical College, 1889, died suddenly from heart disease at his home in Houston Heights, Texas, May 19, aged 52.

Paris Shoaff, M.D. Western Pennsylvania Medical College, Pittsburg, 1892, died from tuberculosis at his home in New Castle, Pa., June 6, aged 37.

Moses Hubbard, M.D. Missouri Medical College, St. Louis, 1856, founder of Alla College, Roseland, Texas, died at his home in that city, May 26.

Adam Miesse, M.D. Eclectic Medical Institute, Cincinnati, 1868, a veteran of the Civil War, died at his home in Noblesville, Ind., May 31, aged 65.

King R. Cutler, M.D. Eclectic Medical Institute, Cincinnati, 1892, died at his home in Houston, Texas, May 31, from heart disease, aged 55.

Hall Curtis, M.D. Harvard University Medical School, Boston, 1857, of Boston, died recently at his country place in Beverly Farms, Mass.

Joseph John William Roberts Boyer, M.D., died at his home in Barrie, Ont., February 12, from pneumonia, after an illness of 10 days, aged 51.

Seymour Putnam, M.D. Bellevue Hospital Medical College, New York City, 1876, formerly of Joplin, Mo., died in Kansas City, Mo., May 26.

A. C. Hardin, M.D. Physio-Medical College, Cincinnati, Ohio, died at his home in Elkton, Ky., Dec. 20, 1905, from senile debility, aged 76.

James Miller, Jr., passed assistant surgeon, United States Navy, died in the Cable Station, Midway Island, from appendicitis, May 13.

Harry Haxall, M.D. College of Physicians and Surgeons, Baltimore, 1882, died suddenly at his home in Providence Forge, Va., June 8.

Robert Liston, M.D. Eclectic Medical College of the City of New York, 1875, died at his home in Albany, N. Y., June 1, aged 72.

William T. Brown, M.D. Jefferson Medical College, Philadelphia, 1859, died recently at his home in Altus, Ark., aged 78.

Alexander R. Shaw, M.D. Hahnemann Medical College, Philadelphia, 1857 died at his home in Philadelphia, June 11.

James W. Dupree, M.D. New Orleans School of Medicine, 1870, of Baton Rouge, La., died in Cincinnati, May 25.

I. A. Ketron, M.D. Atlanta (Ga.) Medical College, 1876, died at his home in Clarkesville, Ga., April 12, aged 58.

Jacob Hoke, M.D. Chicago Medical College, 1869, died at his home in Cordova, Ill., May 28, aged 90.

J. T. B. Ford, M.D. (Examination, Alabama), died at his home in Pollard, Ala., May 26, aged 73.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

SOMNOFORM.

DOWAGIAC, Mich., June 5, 1906.

To the Editor:—Where can I get information on the effects of Somnoform, a new dental anesthetic? I wish to find whether or not there have been any fatal or bad effects from its use as an anesthetic. I read an article some time ago in which it was stated that there have been several fatalities from its use. I have lost the article, but think it was in THE JOURNAL. Please send me the required information, or tell where I can obtain it.

W. E. PARKER, M.D.

ANSWER.—Somnoform, prepared by C. De Trey & Co., Berlin, Germany, is said to be a mixture of ethyl chlorid 60 parts, methyl chlorid 35 parts and ethyl bromid 5 parts. The relative value of ethyl chlorid and methyl chlorid as compared with ether and chloroform is still an open question, as also is their relative safety of administration. In a general way they have been found to stand, both in effect and safety, between nitrous oxid and ether. W. J. McCardie (*British Medical Journal*, March 17, 1906, p. 616), cites a number of fatalities from the use of ethyl chlorid and also states that several deaths have occurred from somnoform.

DENATURED ALCOHOL.

LOGANSPORT, IND., June 11, 1906.

To the Editor:—Will you please tell me what denatured alcohol is, or what process it undergoes or what adulterations are made to produce denatured alcohol as referred to in the recent bill passed by Congress? J. Z. POWELL.

ANSWER.—The bill recently enacted authorizing the withdrawal from bond of tax-free denaturized alcohol for certain purposes, specifies that alcohol must be mixed "with denaturing material suitable to the use for which the alcohol is withdrawn, but which destroys its character as a beverage and renders it unfit for liquid medicinal purposes." It further directs that the nature and quantity of denaturing material shall be prescribed by the commissioners of Internal Revenue.

In England, the denaturated alcohol sold at retail contains either 10 per cent. of crude wood alcohol, or else 0.275 per cent. petroleum oil. Under certain conditions alcohol used for manufacturing may be denaturized by addition of other substances.

In Germany, the article offered for miscellaneous sale is denaturized by addition of pyridin and crude wood alcohol, but other additions are authorized for particular lines of manufacture.

Miscellany

Lack of Lime the Basis for Tuberculosis.—P. Ferrier in France and G. Fisac in Spain have recently called attention anew to the importance of lime in the prevention and cure of tuberculosis. The former preaches that the lack of a sufficient proportion of lime in the body is the reason that the tubercle bacilli gain an easy foothold and flourish. Fisac, on the other hand, has been proclaiming the immunity to tuberculosis of persons whose occupation involves the handling of lime and inhalation of lime dust. Ferrier declares that the condition of the teeth is the criterion as to the strength of the resistance that can be offered the bacilli. Tuberculous subjects have poor teeth, as a rule, friable and subject to acute caries. Treatment and prophylaxis should aim to make and to keep the teeth strong and sound, and the tuberculous process will then be found conquered. No acid food, or food inducing acid fermentation, should be allowed, and both food and drinks

should aim to "recalcify the organism." The beverage should be alkaline mineral waters rich in calcium bicarbonates. A glass should be taken half an hour before each meal. This cleanses the stomach and prepares it for the food. During or after each meal he orders a cachet containing 0.4 gm. each of calcium carbonate and tribasic calcium phosphate with 0.35 gm. of sodium chlorid. If the secretion of hydrochloric acid is deficient he prescribes further a teaspoonful of a solution of 2.5 gm. calcium chlorid in 100 gm. distilled water. He is convinced that whenever there is acute dental caries there is phosphaturia, but the latter may be transient and ignored, while the condition of the teeth is a constant and faithful index of the lime values of the organism. The benefit ascribed to country air and to residence at the seashore may possibly be due to the change to water and soil containing more lime. Ferrier's latest communication appeared in the *Bull. Soc. Med. des Hôp.*, xxiii, No. 12, 1906. Sergent's experience during the last eighteen months apparently confirms his assumptions. Rénon also reported a remarkable absence of tuberculosis in a certain town since lime kilns have become numerous there. Some persons who were already tuberculous are now in robust health after working in the kilns.

State Boards of Registration

COMING EXAMINATIONS.

MARYLAND Board of Medical Examiners, Baltimore, June 20-23. Secretary, J. McP. Scott, Hagerstown.

ARIZONA Board of Medical Examiners, Phoenix, July 2-3. Secretary, Ancil Martin, Phoenix.

UTAH State Board of Medical Examiners, Salt Lake City, July 2-3. Secretary, R. W. Fisher, Salt Lake City.

NORTH DAKOTA State Medical Examining Board, Grand Forks, July, 3-5. Secretary, H. M. Wheeler, Grand Forks.

WASHINGTON State Medical Examining Board, Tacoma, July, 3-5. Secretary, C. W. Sharples, Seattle.

RHODE ISLAND State Board of Health, State House, Providence, July, 5-6. Secretary, G. T. Swarts, Providence.

NEW HAMPSHIRE State Medical Board, Concord, July 6-7. Regent, H. C. Morrison, Concord.

ARKANSAS State Medical Examining Board, Little Rock, July 1 Secretary, J. P. Runyan, Little Rock.

BOSTON State Board of Registration in Medicine, State House, Boston, July 10-11. Secretary, Edwin B. Harvey, Boston.

CONNECTICUT Medical Examining Board, City Hall, New Haven. July 10-11. Secretary, Charles A. Tuttle, New Haven.

MAINE Board of Registration of Medicine, State House, Augusta, July 10-11. Secretary, W. J. Maybury, Saco.

OREGON State Board of Medical Examiners, Portland, July 10-12. Secretary, Byron E. Miller, Portland.

VERMONT State Board of Medical Registration, Burlington, July 10-12. Secretary, W. Scott Nay, Underhill.

WEST VIRGINIA State Board of Health, Charleston, July 10-12. Secretary, H. A. Barbee, Point Pleasant.

WISCONSIN State Board of Medical Examiners, Madison (Park Hotel), July 10-12. Secretary, J. V. Stevens, Jefferson.

SOUTH DAKOTA Board of Medical Examiners, Watertown, July 11-12. Secretary, H. E. McNutt, Aberdeen.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, D. C., July 12. Secretary, W. C. Woodward, Washington, D. C.

Georgia April Report.—Dr. E. R. Anthony, secretary of the Regular Board of Medical Examiners of Georgia, reports the written examination held at Atlanta, April 5-6, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 90, of whom 86 passed and 4 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
College of P. and S., Atlanta, (1906), the grades of 77, 79, and 80 were reached by one each, 81 and 82 by three each, 83 by five, 84 by two, 85 by three, 86 by ten, 87 by five, 88 by three, 89 by four, 91 by one, 92 by two, 94, 95 and 97 by one each.		
Atlanta School of Medicine (1906), the grade of 80 was reached by two, 81 by one, 82 by two, 83 and 84 by three each, 88 by one.		
Mebarry Med. Coll.	(1905) 89; (1906) 78, 79, 82, 84, 87, 88	
University of the South	(1905) 77, 79; (1906)	81
University of Nashville	(1906)	85
Leonard Med. Coll.	(1906) 79, 83, 84, 87,	87
Tennessee Med. Coll.	(1905)	88
Chattanooga Med. Coll.	(1899) 85; (1902) 77; (1906)	75
Vanderbilt University	(1893)	80
College of P. and S., New York	(1888)	81
College of P. & S., Baltimore	(1904)	79
Baltimore Med. Coll.	(1897)	86
Maryland Med. Coll.	(1904)	76
University of Tennessee	(1901)	80
Kentucky School of Medicine	(1880)	75

FAILED. College.	Year Grad.	Per Cent.
College of P. & S., Atlanta	(1906)	67, 74
Chattanooga Med. Coll.	(1901)	66
University of Georgia	(1905)	73

Kentucky May Report.—Dr. J. N. McCormack, secretary of the State Board of Health of Kentucky, reports the written examination held at Louisville, May 15, 1906. The number of subjects examined in was 14; total number of questions asked, 110; percentage required to pass, average 70, not less than 60 in any one branch. The total number of candidates examined was 35, of whom 23 passed, including 2 osteopaths, and 12 failed, including 4 osteopaths. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University of Louisville	(1906) 70, 72, 74, 74, 76, 79, 85	
Eclectic Medical Institute (Cincinnati)	(1906)	84, 84
Medical College of Ohio	(1905)	78, 83
Vanderbilt University	(1905)	75, 83
Louisville Med. Coll.	(1905)	79
Medico-Chirurgical College, Philadelphia	(1905)	78
Kentucky University	(1905)	78
University of Nashville	(1904)	76
College of P. and S., St. Louis	(1906)	76
Meharry Med. Coll.	(1906)	75, 75
New York Homeo. Med. Coll.	(1901)	74

FAILED.		
University of Tennessee	(1906)	64
Eclectic Medical Institute, Cincinnati	(1906)	69
University of Nashville	(1901)	64
Barnes Med. Coll.	(1906)	68
Kentucky University	(1903)	61
University of Louisville	(1906)	66, *74
Kentucky School of Medicine	(1898)	57

* Made below 60 on two subjects.

The following questions were asked:

SURGERY.

1. Differentiate between appendicitis, gallstone colic and renal colic. 2. When would it be necessary to catheterize a male and how would you do it? What difficulties and dangers would you expect to encounter? 3. Discuss the complications of gonorrhea in the female, and tell when you would consider a male cured of this disease. 4. How would you reduce (a) a dislocation of the humerus downward at the shoulder, and (b) a dislocation of the humerus at the hip joint? 5. Differentiate between pleurisy with effusion and empyema. 6. Differentiate between a sprained ankle and Pott's fracture, and give the pathologic anatomy of the latter. 7. Define (a) sepsis, (b) antisepsis, (c) asepsis, (d) volvulus and (e) endothelium. 8. On what symptoms would you establish a diagnosis of syphilis, and describe its secondary manifestations. 9. Describe in detail an inguinal hernia: (b) under what circumstances would you call it strangulated; and (c) describe what steps you would take before deciding that an operation was necessary for strangulated hernia.

MENTAL AND NERVOUS DISEASES.

1. Define (a) mania, (b) delusion, (c) aura, (d) cretinism and (e) idiocy. 2. Describe and give the pathology of anterior poliomyelitis. 3. Describe a section of the spinal cord at one of the following levels—the seventh cervical vertebra, the fourth dorsal or the second lumbar. 4. Tell what you know of the reflex nervous system. 5. Under what conditions would you be willing to state that a person was incapable of writing a will?

CHEMISTRY.

1. What inorganic salts enter into the formation of human bone, and give a method for detecting one base and one acid among them. 2. Define (a) specific gravity, (b) valence. 3. Define glycogen. Where does it occur in the body? 4. Give in detail a test for arsenic in the stomach at a postmortem examination. 5. Define (a) crystallization, (b) efflorescence, (c) organic chemistry, (d) acid and (e) base. 6. Describe in detail two methods for testing urine for albumin. 7. Describe in detail a quantitative test for urea. 8. What is the chemical composition of blood? 9. Name ten elements. 10. Give the chemical constituents of water, air and bile.

ANATOMY.

1. Describe the fourth ventricle. 2. Describe the bladder and give its relations. 3. Describe two of the following: The superior maxillary bone, the os innominatum, the dorsal portion of the vertebral column. 4. Describe the brachial plexus. 5. Describe one of the following muscles: Omohyoid, deltoid, quadriceps extensor. 6. Describe (a) the femoral vein, (b) the trachea. 7. Give the gross anatomy of the pancreas. 8. Describe the transverse colon. 9. Give the histology of the kidney. 10. Describe (a) the circle of Willis, and (b) tell what structures pass through the foramen of Vesalius.

OBSTETRICS.

1. Describe the mechanics of a normal labor. 2. How would you diagnose and manage a breach presentation? 3. Describe the development of the ovum after impregnation and tell what structures develop from each layer of the blastoderm. 4. Tell how to diagnose and how to repair a recent laceration of the perineum. In what proportion of cases are they found? 5. Give the cause, pathology, and symptomatology of milk leg or phlegmasia alba dolens. 6. How would you diagnose placenta previa, and how would you manage a case before, during and after labor? 7. Describe exactly the application of forceps in an occiput posterior case in the superior strait. 8. Under what circumstances would you be called on to do a rapid manual dilatation of the os uteri at full term and how would you do it? 9. A multipara has been in labor several hours, the membranes have ruptured and the right hand and a pulsating cord are in the vagina. Tell exactly what you would do. 10. (a) What is a postpartum hemorrhage? (b) How would you prevent it, and (c) how would you manage an extreme case?

OTOLOGY.

1. Give the causes of deafness and state what may be done to relieve it. 2. Under what circumstances would it be necessary to have an operation done in mastoiditis? 3. How would you diagnosticate acute otitis media and what would you do for it? 4. Describe (a) the labyrinth and (b) the Eustachian tube. 5. How would you remove a bean from the external auditory canal.

ETIOLOGY AND PHYSICAL DIAGNOSIS.

1. Describe the normal heart sounds and give the points of greatest intensity for each of the heart murmurs. 2. How would you differentiate between acute gastritis, ulcer of the stomach, hypertrophy of the stomach and hyperacidity? 3. Give objective and subjective symptoms of pulmonary emphysema. 4. Define bronchial breathing. What is its cause and in what diseases may it be heard? 5. What is the cause of puerperal sepsis and how would you prevent it?

OPHTHALMOLOGY.

1 Describe glaucoma. 2. Describe iritis. 3. Define (a) hypopyon, (b) ophthalmoscope and (c) crystalline lens. 4. Describe ophthalmia neonatorum. 5. Describe trachoma, and tell how you would prevent its spread.

PHYSIOLOGY.

1. Describe the sympathetic (nerve) system. 2. What are the changes in bread during its digestion, and where do each occur? 3. Give the origin, function, and the relative number of the different kinds of blood corpuscles in the healthy system. 4 Define (a) metabolism, (b) secretion, (c) respiration, (d) peristalsis, and (e) coagulation. 5. Describe minute and gross anatomy of the salivary glands and give their functions. 6. Describe the circulation of the blood. 7. How many kinds of muscular tissues are found in the body, describe each. 8. What are the functions of the vagus nerve. 9. Give the physiology of vision. 10. Give the physical properties and chemic composition of normal urine, and name the most important excrementitious products therein.

HYGIENE.

1. How would you prevent the spread of smallpox? 2. How would you disinfect a six-room cottage, each room 14x16 feet and 10 feet high, in which you had treated a case of scarlet fever? Give all steps in detail. 3. If you were treating a case of yellow fever how would you prevent its spread? 4. What advice would you give a patient with acute syphilis in order that he might not infect others? 5. When should water be condemned for drinking purposes?

PATHOLOGY.

1. Give the pathology of tabes dorsalis. 2 State the condition of the blood in leukemia. 3. Give the pathology of rachitis. 4. Differentiate between a chancre and a chancroid. 5. Differentiate between sarcomata and carcinomata and describe the microscopic appearance of two kinds of sarcomata 7. Describe the appearance of the blood in malaria. 8. Give the pathology of the different stages of acute lobar pneumonia, giving the exact microscopic appearance of a section of the lung in each stage. 9. Give the pathology of glioma. 10. Describe the pathologic changes which occur in the spinal cord in amyotropic lateral sclerosis.

MEDICAL JURISPRUDENCE.

1 How would you distinguish human blood stains on clothing? 2 What is malpractice and when is a doctor liable for damages for malpractice? 3. By what physical signs would you establish the fact that rape had been committed. 4. (a) Under what circumstances would a doctor be liable for an overdose of poison in a prescription, and (b) when would the druggist be liable? 5. How would you differentiate between death from acute alcoholism and strychnin poisoning, and describe the postmortem changes in each condition?

GYNECOLOGY.

1 Differentiate between a uterine fibroid and an ovarian cyst. 2 What is a pyosalpinx? 3. Differentiate between pyosalpinx, ectopic gestation and abortion. 4. Give the symptoms, and causes of (a) amenorrhea, (b) dysmenorrhea, (c) metorrhagia, (d) retroversion and (e) endometritis. 5. Describe and give the cause of prolapse of the uterus. 6. Under what circumstances is it justifiable to produce an abortion? 7. Describe senile vaginitis. 8. How would you diagnose a vesico-vaginal fistula, and how would you treat such a case? 9. Define menstruation and describe the menstrual cycle 10. Give the histology of the ovary.

BACTERIOLOGY.

1. Describe the Klebs-Loeffler bacillus. How would you distinguish it? What is diphtheritic antitoxin? 2. Describe the microorganism that causes gonorrhea and tell how to stain it. 3. Describe the mosquito theory of the spread of yellow fever. 4. What is agglutination? What is its practical value in the diagnosis of typhoid fever? 5. Define (a) flagella, (b) karyokinesis, (c) spore, (d) culture and (e) anaërobic. 6. What is Koch's postulate? 7. Give the bacteriology of chronic phthisis, and describe reversion of type. 8. What is phagocytosis? 9. Give the morphology of the *Staphylococcus pyogenes aureus* and tell in what pathologic conditions it is found. 10. Describe (a) a method of making a plate culture, and (b) a stab culture

Louisiana May Report.—Dr. F. A. Larue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, May 3 4, 1906. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 121, of whom 114 passed and 7 failed. The following colleges were represented:

College.	Year Grad	Per Cent
PASSED.		
Tulane University	(1901)	89.2
	(1906)	78.2, 82.2, 82.4, 82.4, 84.2, 84.6, 84.8, 85.2, 85.8, 85.8, 86.0, 86.2, 86.4, 86.8, 86.8, 87.0, 87.0, 87.0, 87.2, 87.4, 87.8, 88.0, 88.2, 88.4, 88.4, 88.6, 88.8, 88.8, 89.0, 89.2, 89.2, 89.2, 89.4, 89.4, 89.6, 89.6, 89.6, 90.0, 90.2, 90.2, 90.2, 90.8, 91.0, 91.0, 91.2, 91.8, 92.0, 92.0, 92.2, 92.4, 92.8, 93.0, 93.0, 93.2, 93.2, 93.4, 94.6, 95.0.
Memphis Hospital Med. Coll.	(1893), 76.6; (1896) 77.0;	(1904) 88.0, 83.8, 88.8; (1905) 80.0; (1906) 76.8, 77.4, 79.0, 80.0, 80.4, 81.4, 83.4, 84.4, 84.4 85.2 86.0, 86.0, 87.6, 98.8, 90.4.
University of Pennsylvania	(1869)	76.4
University of Nashville	(1903) 76.4; (1905) 83.6; (1906)	84.2, 88.6
Atlanta School of Medicine	(1906)	79.6, 81.8
College of P. and S., Atlanta	(1906)	79.2, 81.6
University of Maryland	(1895)	87.0; (1905) 82.8
Vanderbilt University	(1904)	82.2; (1906) 94.4
Baylor University	(1905)	82.4; (1906) 84.0
Harvard Medical School	(1899)	84.4
College of P. and S., St. Louis	(1889)	81.2
American Medical Missionary College	(1906)	76.8
Kentucky University	(1904)	81.0
Washington University, St. Louis	(1904)	86.4
College of P. and S., Dallas	(1906)	80.8
University of Ohio	(1895)	87.4
University of Toronto	(1899)	85.0
University of Texas	(1900)	89.2
Flint Med. Coll.,	(1905) 77.6; (1906) 75.2, 77.6, 79.2, 81.0, 85.4, 86.8.	
Meharry Med. Coll.	(1905) 75.2, 76.2, (1906)	80.2
FAILED.		
College of P. and S., Dallas	(1906)	61.0
Kentucky School of Medicine	(1898)	68.2
Baylor University	(1905)	65.2
Flint Med. Coll.,	(1901) 67.0; (1903) 71; (1905) 65.6; (1906)	71.2

Mississippi May Report.—Dr. J. F. Hunter, secretary of the Mississippi State Board, reports the written examination held at Jackson, May 8-9, 1906. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75 The total number of candidates examined was 231, of whom 118 passed, including 61 non-graduates, and 113 failed, including 72 non-graduates.

Those who passed were from the following colleges: University of the South, 1899, 1905; Toronto Med. Coll., 1899; Marion-Sims Med. Coll., 1895; Northwestern University Woman's Med. Coll., 1882; Memphis Hospital Med. Coll., 1906 (16), 1905, 1904, 1903 (2), 1899; Chattanooga Med. Coll., 1906; Tulane University, 1905, 1906 (4); University of Virginia, 1904; Louisville Med. Coll., 1906; University of Nashville, 1905 (2), 1906 (6); North Carolina Med. Coll., 1906; Meharry Med. Coll., 1906 (4); Atlanta School of Medicine, 1906 (2); Flint Med. Coll. 1906; Leonard Med. Coll., 1906; University of Tennessee, 1897; Barnes Med. Coll., 1906; Vanderbilt University, 1900; Hospital College of Medicine, Louisville, 1905; University of Alabama, 1906; Mobile Med. Coll., 1904.

Those who failed were from the following colleges: Harvey Med. Coll., 1905; College of Med. and Surg., Chicago, 1904; Memphis Hospital Med. Coll., 1900, 1903, 1905 (2), 1906 (8); Tulane University, 1883, 1904, 1906; Med. Coll. of Virginia, 1904; University of Tennessee, 1901; University of Nashville, 1902, 1906 (3); Meharry Med. Coll., 1906 (6); Chattanooga Med. Coll., 1906; Hospital College of Medicine, Louisville, 1904; Leonard Med. Coll., 1905; Flint Med. Coll., 1902, 1904, 1906 4); Kentucky University, 1904; Barnes Med. Coll., 1902; College of P. and S., Chicago, 1889.

Reciprocity with Vermont.—Dr. W. Scott Nay, secretary of the Board of Medical Registration of Vermont, sends us the following:

The Board of Medical Registration of Vermont will endorse the certificate of license of any state medical examining and licensing board in accordance with the following section of the Public Acts of 1904:

Section 14 The board shall issue licenses without examination to reputable physicians and surgeons who shall personally appear and present a certified copy of certificate of registration, or license, which has been issued to said applicant in another state in the union, where the requirements for registration shall be deemed by said board to be equivalent to those of this state, provided such state shall accord a like privilege to holders of a license granted under the laws of this state.

Each applicant for such license shall pay to the board the sum of ten dollars.

The standard of requirements of the Vermont board is as follows:

1 Academic. A high school diploma after four years of study, or its equivalent, that will qualify for entrance without examination to any of the New England colleges.

2. Medical Four courses of lectures of 900 hours each, in four different calendar years prior to graduation from a medical college approved by this board

Practitioners graduated prior to 1901 are exempt from this requirement.

3 Moral Applicants shall present qualifications as to moral character and professional standing from two reputable physicians in the county in which he resides, and from the city or town clerk of his place of residence.

4 Examining The examination in writing shall embrace 12 subjects of 90 questions each: Anatomy bacteriology, practice of medicine and pathology, surgery and medicine, obstetrics, gynecology, physiology, hygiene, materia medica and therapeutics. The general average in at least 75 per cent in order to obtain a license.

West Virginia April Report.—Dr. H. A. Barbee, secretary of the West Virginia State Board of Health, reports the written examination held at Parkersburg, April 10-12, 1906. The number of subjects examined in was 9; total number of questions asked, 180; percentage required to pass, 80. The total number of candidates examined was 44, of whom 12 passed and 32 failed, including 11 non-graduates. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
Ohio Medical University	(1902) 83; (1905)	88
University of Pennsylvania	(1905)	91
University of Virginia	(1900) 92; (1905)	90
Maryland Med. Coll.	(1905)	80
University College of Medicine	(1905)	88, 94
Metropolitan Med. Coll.†	(1899)	83
Harvard University	(1904)	90
University of Maryland	(1904)	87
College of P. & S., New York	(1900)	93
FAILED.		
Kentucky School of Medicine	(1905)	62, 62
Maryland Med. Coll.*	(1903) 57; (1905)	84
Eclectic Medical Institute	(1906)	76, 76
Western Reserve University	(1876)	58
University College of Medicine	(1897) 84;* (1906)	78
Kentucky University	(1904) 71; (1905)	78
Pulte Med. Coll.*	(1906)	83
University of the South	(1904)	72
Louisville Med. Coll.	(1905)	74, 74
Barnes Med. College*	(1905) 82; (1906)	82
University of Louisville*	(1905)	81
Baltimore University	(1905)	77, 77
Baltimore Medical College*	(1905)	80

Non-graduates: The grade of 64 was reached by two, 70, 73 and 76 by one each, 70 by four and 79 and 80* by one each.

* Below 65 in one or more branches.

† This college is not recognized by Illinois State Board of Health.

Society Proceedings

COMING MEETINGS.

State Medical Society of Wisconsin, Milwaukee, June 27-29.
American Ophthalmological Society, New York City, June 28-29.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

Second Annual Meeting, held at Washington, D. C., May 16-18, 1906.

(Concluded from page 1721.)

Tuberculosis Among the Indians.

COMMISSIONER F. E. LEUPP, Washington, stated that from data collected by 91 field physicians and representing half the Indian population of the United States, there were included nearly 3,000 cases of tuberculosis, one-third of which were of the pulmonary type. He is distributing pamphlets on the subject and has succeeded in gaining the interest of Congress in the project of establishing in the west a sanitarium for tuberculous Indians.

DR. JAMES R. WALKER, Pine Ridge, S. D., said that in that agency in 1896 there were 4,973 Ogalallas, among whom were 741 cases of tuberculosis. The Indians were then impressed with facts concerning the disease, and in five years the number of cases were reduced from 148 to 105 per thousand. After that a physician could not devote his time to the subject and the ratio has now increased to 120 per thousand.

Other papers discussed in the sociologic section were "The Influence of Sanatoria on the Value of Surrounding Property," by W. H. Baldwin; "Effective Methods of Educating the Public," by Paul Kennaday; "Industrial Sickness Relief Associations and Tuberculosis," by Dr. A. C. Klebs, and "Tuberculosis Among the Negroes," by Mr. T. J. Jones, Hampton, Va.

PATHOLOGICAL AND BACTERIOLOGICAL SECTION.

Papers on "Tuberculous Meningitis," "Tuberculosis of the Liver," and "The Kidneys in Tuberculosis," were read respectively by Drs. D. J. McCarthy, Josephus Ullom and Joseph Walsh of Philadelphia.

Clinical and Pathological Comparison of Cavities.

DR. H. R. M. LANDIS, Philadelphia, reported the results of a study of 50 cases in which cavities were present, 76 cavities in all being found. Of the 76, 58 had been recognized before death. Of the unrecognized list all but three were small, the latter being the size of a lemon. The situation more than the size has to do with the diagnosis. Most of the cavities not diagnosed were filled with thick creamy pus. Ten cases were thought to be instances of cavity formation, but were found not to be; five of them showed consolidation around a bronchus. Of the 58 cavities recognized, 53 gave the sign of whispering pectoriloquy, 49 a tympanitic percussion note, and 33 gurgling râles. Whispering pectoriloquy is not pathognomonic of cavity, being absent in 5 and present in 5 cases where cavity was not present, the lesion being around a bronchus.

DISCUSSION.

DR. W. H. WELCH, Baltimore, said it was interesting to note that cavities are almost peculiar to tuberculosis of the lung, only few appearing elsewhere in the body. The connection with the external air permits removal of the dead material, but the mechanical impact of the inspired air must also be a factor. Mixed infection plays a very important part in the formation of cavities, but is not an absolute necessity. The action of autolytic enzymes has not fully been worked out, but this is also an important feature of the process. During the last few years he has found that the influenza bacillus is a common occupant of pulmonary cavities. These analytical studies of different phases of tuberculosis are of great value and should be encouraged.

DR. ALFRED MEYER, New York, has found an expedient of considerable value in doubtful cases of cavity in the lung. The patient usually lies in the position in which he coughs the least and this may be due to the fact that a filled cavity overflows in certain postures and not in others. To drain the cavity and thus to allow it to give the signs of that condition, the patient should be kept for some hours of even days in the position he usually avoids, and in this way the cavity may be located.

Tuberculosis of the Placenta.

DR. A. S. WARTHIN, Ann Arbor, presented a series of lantern slides to show his findings in three cases of this lesion. One was a case of tuberculosis of the tubes in the mother and of the placenta and fetus, a rare condition and not of great importance. A second showed miliary tuberculosis in the placenta, but a number of placentas were confused and the mother could not be located. A third was a case of chronic renal tuberculosis, with following miliary spread of the disease, with abortion at six months. In this the uterus, placenta and fetus were examined. A prominent feature of the lesions in the placenta was the lack of giant and epithelioid cells, necrosis being the constant lesion. The fetal blood was filled with tubercle bacilli, but there were no localized lesions in the fetus.

DISCUSSION.

DR. W. H. WELCH, Baltimore, regards the question of placental lesions as a subject of really fundamental importance in the etiology of tuberculosis. The evidence is becoming stronger and stronger that conveyance from mother to fetus is at least not so very extraordinary, and is probably far more frequent than is commonly supposed. No definite placental lesions are necessary for the passage through that structure of the tubercle bacillus. That tuberculosis in the new born does not more frequently develop has been explained in two ways; first, that the bacilli get in late and hence there is no time for tubercles to develop, and second, that the fetus is relatively insuseeptible. Both reasons are probably active. There is considerable evidence to show that the fetus may harbor tubercle bacilli for weeks without the development of lesions.

DR. L. F. FLICK, Philadelphia, asked if the apparent immunity of children of tuberculous mothers was due to exposure during intrauterine life. Clinically he has noted a resistance to exposure on the part of such children for some time after birth, and he believes that with some this may last throughout life.

DR. WELCH said this was purely a clinical observation which *a priori* has nothing to indicate its impossibility. Here the fetus is acted on by the living bacilli, which, as pointed out by Dr. Flexner, is the only basis of immunity.

DR. J. H. LOWMAN, Cleveland, stated that an examination of 350 school children of tuberculous parents showed that 10 per cent. were tuberculous and a second 10 per cent. were suspicious.

Concerning Bacillus X.

DR. S. J. MAHER, New Haven, detailed experiments with this ordinary harmless bacillus which show the great power of change possessed by it under the proper conditions. When grown in certain ways it becomes acid resisting and produces caseous masses when injected into rabbits. Taken from these masses and injected into a second series of rabbits, caseous nodules are again produced.

Serum Diagnosis of Tuberculosis.

DRS. H. M. KINGHORN and D. C. TWICHELL, Saranac Lake, last year reached the provisional conclusion that the serum method of Arloing and Courmont is not a reliable test in the diagnosis of tuberculosis. Since that time they have made further tests on 247 healthy and diseased persons. Of the 247 persons, 70 were apparently healthy, 155 had tuberculosis, and 22 were doubtful cases of tuberculosis. Of the 70, 84 per cent. reacted; of the 155, there were 87 per cent. positive results, and of the 22, the test was positive in 82 per cent. There is also but little difference in the agglutinating power of the blood from the healthy and the tuberculous, the former being 14.8 and the latter 13.7. The writers conclude that the serum test is not a specific sign of the presence of tubercnlosis, and that it is of no value in the early diagnosis of the disease.

CLINICAL AND CLIMATOLOGICAL SECTION.

State Sanatoria for Tuberculosis.

DR. V. Y. BOWDITCH, Boston, advises that sanatoria be built away from cities and that they admit only incipient or recoverable cases. Advanced cases should be placed in hospitals for that purpose. The sanatoriums should not be made so large that personal supervision will be rendered impossible, as this defeats the aim of the institution. The possibilities of laboratory research should be fully borne in mind in the equipment and administration of all sanatoriums.

Therapeutic Use of Tuberculin Combined with Sanatorium Treatment of Tuberculosis.

DR. E. L. TRUDEAU, Saranac Lake, gave a summary of the impressions derived from the use of tuberculin since 1890. As a diagnostic agent it never should be used, he stated, until the failure of all other methods of arriving at a conclusion. When these have failed it may be used in exceptional cases. No immediate brilliant results accrue from its use as a therapeutic agent, but he has continued its use in spite of the popular clamor against it, partly because certain results in animals are similar to those obtained along the same lines in the treatment of infectious diseases. During later years he has used Koch's products mostly, the old, T. R., and the bacillus emulsion. During the time tuberculin has been used less and less favorable cases have been selected, but at least at first those that promised most were chosen. He has had no experience with febrile cases. Care must be used in its employment, as tuberculin is a powerful agent. Dr. Trudeau advises no physician who values his peace of mind to begin its use.

The method of use is important. A febrile reaction is not necessary, and every effort should be made to avoid its production. The agent not only acts on the disease itself, but stimulates the body cells in their work against the invasion; hence, it is best to continue a mild stimulation for a long period of time. Very small doses should begin the treatment, and if a reaction occurs, never inject again until the signs have disappeared. Six months are almost always necessary for an effect, and a year or more would often be better. Danger from the agent lies wholly in faulty administration. The opsonic index to determine dosage is as yet impracticable of application. In the more advanced cases the immediate result of the use of tuberculin may be striking, but usually this does not occur.

Of the unclassified cases with bacilli in the sputum, 64 untreated and 67 treated, lost the bacilli. Of the classified cases, 24 untreated and 41 treated, showed disappearance of the bacilli. Of incipient cases, 56 per cent. of those treated with tuberculin were apparently cured, and 50 per cent. of the untreated. Of advanced cases, 27 per cent. of the treated and 6 per cent. of the untreated were apparent cures. Of the incipient cases 79 per cent. of the treated and 63 per cent. of the untreated are living at the present time. Of advanced cases 61 per cent. of the treated and 36 per cent. of the untreated are living. The value of these statements depends on two things the accuracy of the figures and the interpretation of the results. Are the results due to the use of tuberculin or to the other factors employed? The selection of cases and the longer average stay of the treated may have something to do with the showing. Be this as it may, Dr. Trudeau many years ago formed the opinion that tuberculin may aid in the sanatorium treatment of tuberculosis and his experience leads him still to hold this view.

DISCUSSION.

DR. LAWRASON BROWN, Saranac Lake, has used the tuberculin treatment in 85 cases, with, on the whole, favorable results.

DR. E. R. BALDWIN, Saranac Lake, spoke chiefly from the laboratory viewpoint. From this view tuberculin treatment is still in the experimental stage. The essence of its effect is in the local reaction. He believes its effect is produced by the action on cells which surround the dead tissue and bacilli, rendering them capable of dissolving and removing these toxic products, and thus limiting the action of the tubercle.

DR. L. ROSENBERG, Bedford Springs, has treated 64 cases with tuberculin during the past year, with results about the same as those given by Dr. Trudeau. Some effect was attained in the early cases, more in the moderately advanced. Subjectively, all were vastly improved by the treatment.

DR. M. P. RAVENEL, Philadelphia, said the agglutinating reaction occurs in those who have no tuberculosis, hence is not due to tuberculosis at all. Dr. Baldwin's suggestion does not explain how the tubercle is walled off by fibrous tissue, which occurs in animal experiments. The whole summary of the question is that we do not yet know the tubercle bacillus or what is in it. Tuberculin differs from bottle to bottle of the same make because there is no standard for it.

Use and Abuse of Pulmonary Gymnastics.

DR. C. L. MINOR, Asheville, from a careful study of a large series of cases, has reached the conclusion that pulmonary gymnasties in selected cases of tuberculosis of the lung, are a very valuable adjunct in the treatment. Observing from time to time the size of the chest by means of the lead tape will show the good effect of the breathing exercises. He dreads the shrinkage of the incipient lung even before other untoward signs make themselves known.

DISCUSSION.

DR. NORMAN BRIDGE, Los Angeles, still believes in the principle of rest to all tuberculous areas.

DR. E. O. OTIS, Boston, mentioned tests which show that at least no harm is done by pulmonary gymnasties in proper cases. Patients all feel better during the exercises.

DR. H. M. KING, Liberty, formerly had his patients practice gymnastics, now he does not. He is not convinced that they do good, even if they do no harm, and he would rather err on the side of safety.

DR. J. H. PRYOR, Buffalo, said that in the state hospital for incipient cases, the superintendent has never seen bad results from gymnastics which have been practiced for two years. An important point in this connection is that many writers in England and some in this country are against sanatorium treatment because it turns out flabby individuals who can not earn their living after going home. Breathing exercises tend to keep up bodily functions and help to put the patient in condition to stand exertion when discharged.

Other papers read in the section were "Diet in Tuberculosis," Dr. H. M. King and Prof. Irving Fisher; "The Relative Value of the Home Treatment of Tuberculosis," Dr. L. F. Flick; "Climate as a Factor in the Treatment of Tuberculosis," Dr. F. I. Knight, Boston; "A Suggestion in the Treatment of Hemoptysis," Dr. L. Brown, Saranac Lake; "Manifestations of Syphilis in Connection with Tuberculosis," Dr. J. H. Pryor, Buffalo; "What May Be Accomplished in Apparently Hopeless Cases of Pulmonary Tuberculosis," Dr. S. G. Bonney, Denver; "A Contribution to Climatic Phthisio-Therapy," Dr. E. S. Bullock, Silver City, N. M.

ILLINOIS STATE MEDICAL SOCIETY.

Fifty-sixth Annual Meeting, held at Springfield, May 15-17, 1906, under the presidency of Dr. H. C. Mitchell of Carbondale.

(*Concluded from page 1788.*)

Treatment of Compound Fractures.

DR. EDWARD H. OCHSNER, Chicago, pointed out in what cases the limb can be saved, and when primary amputation is justifiable. He spoke of the method of disinfection, including prevention of tetanus. He pointed out the indications of plastic work in the repair of bones, tendons, nerves, etc., and discussed the method of drainage and wound closure; also secondary shock and immobilization.

Use of Extension Frames in Treatment of Fractures of Thigh and Leg by Ambulatory Casts.

DR. FREDERICK MUELLER, Chicago, said that the ambulatory plaster cast is the most convenient and natural treatment for all fractures of the thigh or leg. Its application is dangerous in some cases, on account of the possibility of disarranging a fracture once set. The author described a new apparatus which, besides showing all the advantages of the Lorenz apparatus, is especially built for general use in the treatment of fractures. The setting of all kinds of fractures can be accomplished by this apparatus with the greatest convenience for the surgeon as well as for the patient.

Operative Treatment in Fractures Presenting Obstacles to Reduction.

DR. WILLIAM FULLER, Chicago, drew the following conclusions: 1. That the unsatisfactory results hitherto obtained in practically all cases when treated conservatively will not meet the continued approval of surgeons familiar with modern surgical technic. 2. That the indications for radical treatment are postive and certain, and that the safety of the procedure is unquestioned. 3. That the operation offers in this class of cases the only reliable means of arriving at a correct diagnosis, the only basis on which rational and scientific treatment may be enunciated.

Problems in Appendicitis.

DR. H. N. RAFFERTY, Robinson, said that the appendicitis question, although hackneyed, is unsettled in many respects, as shown by bedside contact with individual cases. There is nothing new to offer in the way of diagnosis or treatment. All extremes have been reached in formulating methods of treatment, yet mortality prevails. Difficulty in the conduct of cases is often due to inability to judge the extent of the lesions from either subjective or objective symptoms. The author pointed out how much safer for both patient and practitioner is the doctrine of conservative radicalism over that of radical conservatism.

Angioma and Its Surgical Treatment.

DR. CARL BECK, Chicago, gave a brief historical review of this condition and its treatment, and dealt with the present method of surgery in angiomatous growths. He referred to the Payr and Wyeth method; to excision; the electro-surgical method, and described his own method of subcutaneous excision and suture with the gradual growth of normal neighboring skin.

Shortening of Round Ligaments at Internal Ring for Persistent Retroversion of Uterus.

DR. FRANKLIN H. MARTIN, Chicago, gave a description of the technic of shortening the round ligaments through the internal ring after opening the abdomen by a ventral incision. It is accomplished by making a stab wound through the aponeurosis of the external oblique at the point where it passes over the internal ring. Through this opening is passed a pair of sharp artery forceps, penetrating the peritoneum at the point beneath the internal ring, grasping the round ligament within an inch and a half of its insertion into the uterus, and drawing the same through on the aponeurosis and securing it there by means of a non-absorbable suture. He considers the operation unique in its simplicity; there is perfect security of the round ligaments. He employs the strong ends of the round ligaments and shortens the ligaments in the line of their normal axis.

Complications and Emergencies Met with in Surgical Treatment of Ovarian Cystoma.

DR. GEORGE L. EYSTER, Rock Island, enumerated and described the various complications of ovarian cystoma: Twisting of the pedicle; hemorrhage into the cyst; infection and suppuration; adhesions; displacement due to enlargement of other pelvic or abdominal organs. He made a plea for the split flap method of relieving such sessile adhesions to the abdominal viscera as may endanger their integrity by the ordinary method of enucleation. He reported two cases illustrating some of these complications and emergencies.

How Can We Secure the Co-operation of the General Practitioner in Surgical Treatment of Enlarged Prostate?

DR. CARL E. BLACK, Jacksonville, gave the history of surgery of the prostate, with special reference to surgical failures and their influence on the profession. He said that it is not surprising that it is difficult to have the present operations accepted. What proof is there of the correctness of the present surgical procedures? He spoke of the influence of medical organizations in disseminating information, and their use for postgradnate instruction. He pointed out the apparent conflict between medical and surgical advice, and referred to the weakening influence of the division of the profession into societies and sections of specialists. He discussed the value of papers on surgical topics by general practitioners.

Prostatectomy.

DR. JOHN B. MURPHY, Chicago, pointed out the indications for, the limitations and clinical results of, prostatectomy, saying that the indications are now well accepted and clean cut. The early operation is the one that precedes catheter life, severe vesical infection, not to speak of ascending pyelitis. The technical procedure as to route is always elective in the individual case. The results have been very gratifying as to urinary continence, as to dispensing with the catheter, the cure of suppurative cystitis, absence of fistulæ, prevention of epididymitis, and life-saving. There is no operation that taxes the surgeon's judgment as to the personal resistance equation so much as the operation of prostatectomy.

Vasectomy With or Without Subsequent Anastomosis.

DR. G. FRANK LYDSTON, Chicago, read a paper on this subject which will be published in full in THE JOURNAL.

Treatment of Blennorrhea of the Lachrymal Sac.

DR. W. O. NANCE, Chicago, said that chronic dacryocystitis is an exceedingly annoying process, and a source of danger to the integrity of the eye. The course of the disease is almost invariably obstinate and frequently results in months and even years of treatment by probing, syringing and correction of nasal abnormalities. The removal or destruction of the diseased mucous membrane of the lachrymal duct is positively obligatory as a preliminary operation on the globe of the eye. He pointed out the other indications for extirpation of the sac, and suggested some practical points concerning the technic of operation. He spoke of the essentials of success in operating, and described the changes in the lachrymal gland following the extirpation of the sac.

Operative Treatment of Chronic Discharges from the Ear.

DR. A. E. PRINCE, Springfield, said a very large percentage of cases of middle-ear discharge is due to chronic suppurative mastoiditis. He pointed out the complications which are liable to result when the disease is not controlled. Attention was directed to the results of the efforts of Nature to bring about a spontaneous cure. It is the duty of the surgeon to assist Nature. He spoke of the results of imperfect operations in which the surgeon has failed to remove all the cells, which actually increase the danger of fatality. He summarized the points in the radical operation which are designed to bring about a permanent cure in the least possible time, and cited illustrative cases.

Carcinoma.

DR. GEORGE N. KREIDER, Springfield, spoke of the popular agitation for the early operative treatment in carcinoma. He referred to the remarkable superstitions about the disease, and

said that the affection is not so fatal as is generally supposed. There is great need of teaching physicians and the public the early symptoms. Reference was made to the great number of uneducated persons who are using the strongest, most painful means of treating the disease. Washes and salves are entirely useless. All abnormal growths should be extirpated early. Early extirpation in cancer is absolutely necessary. Inoperable cases should be treated with the *x*-ray, and the patient be given hopes of recovery.

Operative Treatment of Superficial Carcinomata.

Dr. Daniel N. Eisendrath, Chicago, said that by superficial carcinomata are understood those of the lip, tongue, ear, extremities and external genitalia. The reason for recurrence in many of these cases is that no attention, or but little, has been paid to the removal of the secondary deposits in the surgical anatomy of the lymphatic supply of the above regions. He made a plea for a thorough removal of the secondary foci simultaneously with the extirpation of the primary growth, saying that the two operations can be done at one sitting. The extirpation of lymph nodes should precede that of the primary tumor on account of the lesser danger of infection of the operative field. He described the technic as used by him in his surgical work.

Logic of Abdominal Pain.

Dr. J. L. Wiggins, East St. Louis, said that one of the fallacies that is general among the laity and altogether too prevalent among physicians is that the summoning of the surgeon presumes an operation. Another equally vicious is that operations are expedient only as a last resource. Considering the frequency with which these errors obtain, the surprise is not that surgery falls short of perfection, but that it is not altogether discredited. When we consider the safety and simplicity of an operation when a disease is in its incipiency and confined within the lumen of a dispensable organ, and then contemplate the rapid change incident to the escape of infectious material and consequent local or general peritonitis, we feel that the surgeon may be absolved from the charge of excessive zeal in his endeavor to impress on the general profession the vital importance of an early and exact diagnosis, supplemented by an immediate operation whenever an operation is indicated.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. J. F. Percy, Galesburg; vice-presidents, Drs. L. H. A. Nickerson, Quincy, James H. Stowell, Chicago; secretary, Dr. E. W. Weis, Ottawa (re-elected); treasurer, Dr. E. J. Brown, Decatur (re-elected).

Delegates to the American Medical Association: Drs. George H. Webster, Chicago; J. L. Wiggins, East St. Louis; O. B. Will, Peoria; Charles L. Mix, Chicago. Alternates: Drs. T. N. Rafferty, Robinson; L. C. Taylor, Springfield; J. C. Foley, Waukegan; J. W. Hairgrove, Jacksonville; J. P. Whitley, Petersboro; John C. Cook, Chicago; William Barnes, Decatur, and T. J. Watkins, Chicago.

Resolutions Adopted.

The following resolutions were adopted:

Resolved, That the Committee on Medical Legislation be instructed and the members of the society urged to work for the passage of the bill by the next General Assembly of Illinois, which shall provide that all bottles or packages containing drugs shall bear a statement on the label of the quantity or proportions of alcohol, narcotics or other poisons which may be contained therein.

Resolved, That the Illinois State Medical Society direct its Committee on Medical Legislation and urge its members to do what they can to secure the passage of the Pure Food Bill, now before the House of Representatives, except the amendment introduced into the bill by the house committee, providing for the appointment of a Commission of Experts. It requests that this amendment, which would probably decrease the efficiency of the measure, be eliminated.

Resolved further, That the Committee on Medical Legislation and the members of the society be requested to oppose any amendment to this bill that would essentially change the provision of the bill as it came from the house committee, requiring the labeling of medical packages containing alcohol, narcotics and other poisons.

Resolved, That the Illinois State Medical Society direct its Committee on Medical Legislation and urge its members to do what they can to secure the passage of the bill to increase the efficiency of the medical department of the Army, which is now before the House of Representatives.

Whereas, The American Medical Association, through its Council on Pharmacy and Chemistry and its Journal, edited by Dr. George H. Simmons, has undertaken a campaign of education and of practical work against the nostrum evil in its various phases; therefore be it

Resolved, That the Illinois State Medical Society fully endorses this great work and urges its officers and members to co-operate in every way to further this cause.

HEREAFTER PAPERS TO BE READ BEFORE GENERAL BODY.

Whereas, This is largely a society of general practitioners who are of necessity interested in all branches of medicine and surgery; therefore be it

Resolved, That the Committee on Scientific Work be instructed for the next year's program to provide one day for the medical section, at which papers on purely medical subjects shall be presented; one day for the surgical section, at which papers on purely surgical subjects shall be presented; and one day for a joint meeting, at which papers on borderland subjects and subjects of mutual interest to all shall be presented.

Rockford was selected as the place for holding the next annual meeting, the third Tuesday in May, 1907.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-first Annual Meeting, held at Hot Springs, Va., May 22-24, 1906.

(*Continued from page 1792*).

Dilatation Versus Incision of the Gravid Uterus.

Dr. Egbert H. Grandin, New York, said that incision should never be resorted to when the complication calling for intervention justifies delay. Thus induction of labor in a case of pelvic contraction, interference in many cases of impending toxemia, as also in most instances of placenta prævia, call for dilatation. On the other hand, the acute toxemias, the urgent instances of placenta prævia, call for incision. The operative methods to be considered are abdominal and vaginal incision and manual and instrumental dilatation. Broadly stated, in pelvic contraction, whenever it is doubtful that dilatation or vaginal incision will permit of delivery, abdominal incision is called for. In the acute toxemias, where the time element enters as a factor, and in rare acute cases of placenta prævia, vaginal incision is justifiable, else dilatation should be the rule after a prescribed technic. Such devices as the Bossi dilator should receive the unqualified condemnation of American obstetricians. They are needless where the educated hand exists; they are dangerous under any condition. In the event of incision being indicated, the vaginal Cesarean section is to be commended as preferable to the Dührssen incisions. The indication for either is extremely limited.

Vaginal Cesarean Section.

Professor Dührssen, Berlin, Germany, summed up the indications for this operation as follows: Vaginal Cesarean section is indicated when, in the case of an imperfectly dilated cervix, which will not permit of dilatation by gentler means, the life of the mother or the child is brought into danger. The presence of an operator experienced in vaginal operations is required. Imperfect dilatation of the cervix might be caused by pathologic changes in the neighborhood of the lower uterine segment, or danger to the mother and child might arise when the pains had as yet caused insufficient opening of the os. In the first, the case is that of an absolute, while in the second it is that a relative obstruction to delivery. The first must be removed because it leads to danger for the mother and child. In the second the danger is already present and requires the immediate emptying of the uterus. Among the special indications he mentioned that of eclampsia. He first established the principle that on account of the independent nature of eclampsia it is best to empty the uterus by narcotics as soon as the diagnosis is made.

He has collected 376 cases of vaginal Cesarean sections, with 48 deaths, a mortality of 12.7 per cent. This high mortality was not due to the dangers of the operation, but to the serious diseases for which operation was undertaken. This proved that the greater operation, namely, the radical vaginal Cesarean section, has a lower mortality than the conservative vaginal Cesarean section. Of 53 cases of extirpation of the uterus after vaginal Cesarean section only five patients died. This further proves the low mortality of the conservative Cesarean section in clinics where immediate deliveries in cases of eclamp-

sia have been effected according to the author's teachings and directions. Veit had only one death in 33 cases, Bumm only one death in his last 40 cases. He mentioned two deaths in 12 cases of vaginal Cesarean section. One was a woman moribund with heart disease, who died immediately after the uterus was emptied. The other was a case of eclampsia with pulmonary tuberculosis as a complication. She was first cured of the eclampsia; the wound healed perfectly, the uterus was completely involuted, but she died in four weeks of tubercular pneumonia.

The Possibility of the Development of Cancer in the Cervical Stump Following Supravaginal Hysterectomy.

DR. ANDREW F. CURRIER, New York, said that the cases in which this complication might arise are usually those in which the uterus has been removed for myoma. That myoma frequently coexisted with cancer is a matter of common observation. Piquand collected 45 such cases, in 24 of which it was thought that the fibromuscular elements had been transformed into epithelial cells, although in some of them there were preexisting cells which proliferated and developed malignancy. These cells are supposed to have been derived either from the embryonic remains of the Wolffian or Muellerian canal, or to be simply epithelial ingrowths into the fibrous tissue. The author is satisfied from his own experience that the coexistence of cancer and myoma is much more frequent than Piquand seems to think. Noble, in an analysis of 1,188 cases of fibroid tumor operated on by various surgeons, found 29 in which cancer of the corpus uteri was a complication, 12 in which there was cancer of the cervix and one in which there was cancerous infiltration of a fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia. The author has not yet seen any conclusive evidence that myoma is transformed into carcinoma, and histologically one would not expect such a sequence.

The suggestions which occur to him in connection with the consideration of this subject are the following: 1. The necessity of more careful clinical and pathologic records, both public and private, in all the cases in which supravaginal hysterectomy is performed. This will probably result in the discovery of cancer of the endometrium in cases in which it was not suspected, and will probably bring to light additional facts in regard to the history of the evolution of cancer. 2. The periodical examination of patients who have undergone the operation in question at not longer than six-month intervals. This is especially desirable for those whose tissues are in a bad condition of nutrition or who suffer from an hereditary taint. 3. Complete removal of the uterus offers greater security from cancer than retention of the cervix. If the patient's history reveals any conditions which suggest the possibility, near or remote, of future degeneration of tissues, complete extirpation should be the invariable rule.

The Search After Truth.

DR. RICHARD B. MAURY, Memphis, in his address referred to the deaths of Dr. A. Palmer Dudley, New York; Dr. James R. Chadwick, Boston; Dr. Arthur W. Johnstone, Cincinnati, and Dr. R. Stansbury Sutton, Pittsburg, which occurred during the year. He then made some remarks on the subject of uterine displacements, and referred to a discussion on ante-flexion before the society in 1888, which was participated in by T. Gaillard Thomas, Graily Hewitt, Sir William Priestley and others, the conclusion having been reached by those men at that time that the man who would not use pessaries in the treatment of antеflexion was unfit to practice gynecology. The intrauterine stem had passed out of the history of gynecology, perhaps forever, and would never again come into favor. The knowledge of pelvic inflammation was so fully disseminated that every practitioner realized the peril to a woman from its use. Maury said that when one considers the various operative procedures which have been devised for the cure of backward displacements and notes that nearly all of them involve the shortening of one set of ligaments or another, or else the suspension of the uterus from above, he must conclude that the present practice is generally accepted by the profession. Maury discussed at considerable length how the uterus is sustained almost entirely by its ligaments, but said that some of the teachings regarding this matter are erroneous, in that the proper supports of the uterus are not the ligaments but the various structures which constitute the two segments of the pelvic floor, as demonstrated by Hart and Barbour.

Results of Vaginal Section and Drainage in Early Cases of Ectopic Gestation.

DR. WILLIS E. FORD, Utica, N. Y., reported 12 cases, which were all seen before rupture had occurred, some of them as early as in the eighth week. In all the cases the incision was made cautiously into the sac, the finger being used to open into it, and the contents examined before the finger was wholly withdrawn, so as not to lose the landmark. In no case was all the blood emptied at the time of the incision, but gauze was carefully passed into the opening and very firmly packed to prevent hemorrhage and allowed to remain for a week before removal. In this way hemorrhage was avoided and the operation was almost trivial in its consequences. The fact that the patients operated on early almost no trace of anything wrong was left in the pelvis afterward, and that the operation was so safe and so certain in its results, impressed him that the society should urge early diagnosis and early operation of all cases of extrauterine pregnancy. If the teaching in the medical schools could be so modified as to impress on medical students a more careful consideration of the subjective symptoms until skill enough has been acquired to enable the verification of the diagnosis to be made with certainty, he is sure that these cases of ectopic gestation would be seen early enough to be operated, and thus prevent rupture and hemorrhage in a large number of instances.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Chorea.

In the treatment of chorea David Inglis, in *Pediatrics*, states that one must keep in mind that it is not a local disease, but one which involves the general impairment of the cerebral functions, and produces motor disturbances. He regards rheumatism as probably the most common cause of this disease. Reflex chorea, however, should not be forgotten. In the treatment, in addition to the removal of the cause, he states that there are practically two things to be done. The first is to stop the waste of nervous energy of the patient, in order to build up nutrition of the neuron bodies, and to lessen the emotional and mental expenditure. Consequently, the patient's time should consist of rest, so far as possible; a nagging mother and an irritable nurse may do a great deal more harm than good in these cases. The amount of sleep should be as great as possible. He makes it a rule to put chorcic patients to bed early and allow them to arise late, and in the afternoon they should be placed in a dark room and allowed to rest for an hour or two, if possible. Sleep, he states, must be obtained at all hazards, and, if need be, chloral may be given for its soporific effects, and he regards it as the surest of all hypnotics, especially as children bear it unusually well. [It must be used with care, however.]

The second important principle of treatment, according to the author, is that of increasing the nutrition of the neuron bodies, and this consists largely in the question of food supply, as most of these patients have but little appetite, and it is not infrequently a difficult matter to secure the ingestion of an abundance of nourishing food. He, therefore, recommends forced feeding when necessary. In this connection he speaks of the mistake of allowing these children to eat three large meals a day, as it weakens the stomach, which is unable to care for so much food at one time. He, therefore, recommends well-cooked nutritious food in small quantities, at frequent intervals. The food should consist especially of fats, which play a great part in cerebral nutrition. Cream, butter, the fats of meat, and, if necessary, cod-liver oil, are valuable

in this disease. In order to stimulate the protoplasm of the cells that they may be able to take up the food supplies brought to them, he recommends arsenic and phosphorus and perhaps strychnia, as of value in stimulating the metabolism of the cell bodies.

He warns against the possibility of over-stimulation by arsenic, as in some cases the same poison which tends to build up may damage the neuron and also the quality of the blood. He recommends, therefore, a combination of iron, arsenic and strychnin in moderate doses rather than heroic doses of arsenic alone. In connection with the dietetic treatment he mentions the use of raw eggs as of value in the formation of fat, because of the lecithin contained in the yolk, and he is of the opinion that it acts in a manner similar to arsenic as a stimulant to the cell metabolism.

Riviere, in the *British Med. Jour.*, recommends ergot and arsenic in chorea. The ergot may be given in doses ranging from 30 to 60 minims of the fluid extract, three times a day, combined with liquor strychninæ (1 per cent. solution) 2 minims (.12). In those cases not improved by the ergot he advises the administration of arsenic. A mixture of the two may be given as follows:

R.	Ext. ergotæ flu	3i	4
	Liq. potassii arsenitis	m. iii	|20

M. To be taken at one dose and repeated after each meal.

The foregoing combination is recommended by Riviere as a very effectual one in all cases.

Hollopeter, in the same periodical, recommends prolonged warm baths in shortening the attacks of chorea. The child should be placed in a bath at a temperature of from 90 to 98 F. and entertained by the mother or nurse by floating toys or by other methods. The entire body except the head and neck should be kept immersed for at least one or two hours. These baths should be given twice daily.

F. M. Pope states that in all suitable cases arsenic should be administered as follows:

1. Administer a mercurial purge.
2. Place the patient on a bland and easily digested diet.
3. Give the arsenic well diluted and in the same dilution throughout, usually giving 2½ minims of Fowler's solution to the ounce of water.
4. Do not discontinue this medication on the first attack of vomiting, as the vomiting is often due to accidental causes.
5. Increase the dose daily.
6. Keep the patient in bed throughout the treatment.
7. If vomiting persists, discontinue the arsenic for twenty-four hours.
8. Examine the patient daily for any toxic action.

Tabes Dorsalis.

In considering tabes dorsalis, F. von Raitz, in the *Medical Record*, states that the treatment must begin by preventing impairment of nutrition and when impairment has already set in by restoring the nutrition, if possible. To prevent any failure of nutrition each patient who has had any infectious disease, who has indulged in sexual excesses, who has been subject to mercury, iodin, lead or any other organic or inorganic poison, should be observed during a period of two or more years, and as soon as any disturbances of the reflexes are shown, the spinal cord and the brain should receive attention by the applications of such methods as are capable of increasing the nutrition to the affected parts. The earlier that tabes is recognized, therefore, the greater the opportunity for a cure. The first step to increase the nutrition of the entire body is to place the patient under the most favorable conditions, such as pure air, sunshine, congenial surroundings, plenty of sleep, and a sufficient occupation of both mind and body. He recommends in this connection the salt brine friction of the body in a warm bath, at a temperature suitable to the patient, and repeated twice a week. This keeps the pores of the skin open and promotes circulation. The clothing must be so adjusted as to keep the patient's body comfortably warm, but not too hot. The diet must be along the lines which will best agree with the patient. The digestive power is, as a rule, impaired, consequently eating slowly and thorough mastication should be enjoined as very essential. Concentrated food should be avoided, as it tends to overload the system with material that can not be oxidized, and it also weakens the muscular power of the alimentary canal and is a factor in the production of constipation and indigestion. Liquids may be taken in sufficient quantities between meals. Alcoholic beverages, as a rule, should be omitted. As regards the medicinal treatment of tabes, he states that there is no preparation in existence which has any beneficial effect on the tabetic lesions, consequently the organs of the individual must be treated as indications arise. For instance, he regards the necessity in some cases of administering strychnin to stimulate the circulation, and in cases of weak digestion rhubarb, gentium and nux vomica, and when the bowels do not act a simple laxative should be administered. When the small intestine has lost its tone, the powdered extract of hydrastis, from 2 to 6 grains (.12-.36) a day is recommended in the majority of cases. And as a general tonic he recommends a capsule composed as follows:

R.	Ferri sulphatis	gr. ii	12
	Sodii carbonatis		
	Extracti gentianiæ, āā	gr. 1/4	|015
	Aloin	gr. 1/8	|008
	Strychninæ sulphatis	gr. 1/30	|002
	Ergotin	gr. 1/5	|012

M. Ft. capsula No. i. Sig.: One such capsule a half an hour before each meal.

Before a lesion like the tabetic lesion can be arrested the whole system must be improved. For this reason he recommends the foregoing outline of treatment.

In connection with this outline of treatment he also recommends the use of electricity, either the galvanic current or the high-frequency current, and in some cases the faradic current. To increase the nutrition of the cord by electricity, he states that both the low and the high tension currents are of value. In the use of galvanism he recommends the positive electrode attached to a large electrode be placed over the abdomen, and the negative electrode placed under the lumbar spine. In other words, he advises the negative electrode applied nearest the seat of the trouble, because under the action of the negative pole fluids are attracted which are alkaline in reaction. He speaks in this connection of the fact that when nutrition fails the normal alkalinity of the tissues diminishes in proportion to this condition.

Beside the polar effects, the constant current, if properly employed, exerts a beneficial influence on the entire body in the way of pacifying the nervous system and strengthening the nerve centers for their duties. To increase the nutrition of the brain he recommends that the positive electrode be placed under the occipito-cervical region, and the negative electrode placed over the frontal area, using a current of from 5 to 10 milliamperes. To stimulate the nutrition at the pathologic foci still more, and to give the tissues rest from the galvanic current, he recommends the use of the high tension current through a Geisler tube, to the spinal cord and brain. To increase the nutrition of the muscular system and peripheral nerves a faradic current should be employed.

The Treatment of Tenia.

The following outline of treatment of tenia is recommended by J. Kingston Fowler in the *British Med. Jour.:* First, the patient must be kept in bed. For two or three, or in some cases for four days, the patient is placed on the following diet: First—Beef tea, 2 pints; port wine, 4 ounces; rusks, 2. Second—During the same period the patient takes extract of cascara sagrada, gr. 2 (.12) three times a day. Third—On the fourth day, early in the morning, the compound infusion of senna, ounce 1 (30) is given, and at 9 a. m. a capsule containing the extract of male fern, minim 15 (1.00), is administered and repeated every fifteen minutes until four doses are given, when the dose of senna is repeated. If by 1 p. m. the worm has not been passed nor the head found a second course of treatment with male fern at intervals of fifteen minutes is begun, and continued for two or three doses, followed in an hour by a purgative. If then the treatment is not successful a third course is prescribed. He does not recommend the continuance of this treatment without interval of a day, as the patient may become exhausted.

Medicolegal

Rules Pertaining to Skill Required of Physicians.

The Supreme Court of Appeals of West Virginia holds, in Dye vs. Corbin, an action for alleged malpractice in the diagnosis and treatment of an injured ankle where a judgment in favor of the defendant is affirmed, that, in an action for damages against a physician, for negligence and want of skill in the treatment of an injury or disease, the burden is on the plaintiff to prove such negligence or want of skill, resulting in injury to the plaintiff. A physician is not required to exercise the highest degree of skill and diligence possible in the treatment of an injury or disease, unless he has by special contract agreed to do so. In the absence of such special contract he is only required to exercise such reasonable and ordinary skill and diligence as are ordinarily exercised by the members of the profession in good standing, in similar localities and in the same general line of practice, regard being had to the state of medical science at the time. A physician does not warrant or insure that his treatment will be successful, in the absence of special contract to that effect. Failure on the part of a physician to effect a cure does not alone establish or raise a presumption of want of skill or negligence on his part. Where a physician exercises ordinary skill and diligence, keeping within recognized and approved methods, he is not liable for the result of a mere mistake of judgment. A physician is liable for the result of an error of judgment, where such error is so gross as to be inconsistent with that degree of skill which it is the duty of a physician to possess.

Referring to the evidence of certain physicians in this case, the court says that it seemed to be directed particularly to the failure of the defendant to give an anesthetic. It was to be observed that these physicians did not say that the failure to give an anesthetic produced a bad result on the injured ankle, or that the treatment of the ankle was improper. The treatment might have been attended with more pain to the patient because an anesthetic was not administered, but the treatment of the ankle might have been the same, whether with or without an anesthetic. It did not follow that the injury to the ankle was increased or aggravated by failure to give an anesthetic. There was no evidence that the injury to the ankle was increased or aggravated by such failure. Such increased or aggravated injury to the ankle could not be presumed without evidence. Besides, it was not shown that, under the standard of skill and diligence by which the defendant was bound, it was his duty to administer an anesthetic, considering time, locality and the condition of the patient.

Again, the court says that proof showing mere conjectural possibility that unfavorable results were due to want of care or skill is not sufficient to make a physician liable. It has also been held that the fact that a physician fails to discover a fracture or dislocation does not alone establish or raise a presumption of want of care on his part.

Undesired Notices and Right of Privacy of Physician.

The Supreme Court of Louisiana says that the accepted statement of facts in the case of Martin vs. the *Picayune* showed the plaintiff to be a well-known and reputable physician, who was a member of a medical society which condemned advertising by physicians in the public press and considered it as unethical. This society adopted resolutions and appointed a committee to interview representatives of the press and request them not to publish the names of members of the regular profession of medicine or place them by publication in the attitude of advertising in any form, as regular practitioners did not resort to advertising. As a member of the committee, the plaintiff called on the defendant's representative, explained why it was that regular physicians did not resort to advertising, and handed him a copy of the resolutions. In a few days the defendant company, he showed, published an article which he deemed injurious and damageable. The article set forth substantially that the case of a young lady named there was unique. That she has been an invalid for years from congenital hip disease, and that owing to the skillful treatment of the plaintiff she had almost entirely recovered. That different physicians had tried their skill on the affected limb and had not met with success. That when Dr. Lorenz visited New Orleans and treated patients, the plaintiff had made a close study of his methods and manner of treatment, which he applied in treating the young lady named. The story appeared to have been obtained from the patient's father, who was, the article stated, in substance, overjoyed, and to whom it afforded delight to say kind things of the physician, the plaintiff.

The conclusion of the district court, after setting forth that the story, if untrue, was enough to irritate and annoy, was that that irritation and annoyance are not of themselves actionable; that it must appear that they are accompanied by substantial injury; that the assertion as a fact that by the use of advanced methods of celebrated surgeons and by his own skillful treatment he had achieved success were not grounds sufficient for the plaintiff to recover damages for injury inflicted; that there was no actionable injury traceable to this publication; that the truth or falsity of the publication was immaterial to the issue presented. Touching the plaintiff's allegation that it put him in the attitude of an advertising quack, thereby bringing him into contempt, the judge said: "Could I satisfy myself that the plaintiff meant to charge and prove that not only such was the effect of the publication, but that it was defendant's purpose to produce on the mind of the public and of plaintiff's friends and fellow-physicians the impression that plaintiff had caused such publication to be inserted in its paper for advertising purposes, I would have no hesitation in concluding that a cause of action had been set forth; for any false impression, produced intentionally or injurious to some one, is actionable libel on him, no matter how the publication or what the purpose used to effect a purpose." Again, it was stated in substance that a cause of action can not be eked out by inference. The intention to be injurious did not appear in the article in question. It should have been specifically alleged. The falsity of the article was not, under the circumstances, sufficient ground of action. It must appear that "defendant meant to produce the impression that plaintiff procured this publication for the purpose of advertising himself, whilst in fact he had not done so."

But the Supreme Court, which reverses the judgment rendered by the district court in favor of the defendant on an exception of no cause of action, says that there is no question, had the plaintiff amended his petition and alleged as before mentioned, that he would have had an indisputable cause of action. But this court really does not think there was downright necessity of going to that extent in order to cover a cause of action. In this court's view, if the publication was malicious, and it was injurious to the plaintiff, it would afford ground for action. True, the words of the article were of praise and congratulation, and no one would seriously contend that they were in themselves actionable. True, words of praise and gratulations are not actionable. But words of praise and gratulations may—on rare occasions, fortunately—lead to injurious consequences, lose their grace and charm, and become actionable. The physician, who by inference finds himself classed with quacksalvers, will be entitled to a hearing, or at any rate should not be turned out of court, unless it appears that he is in error in thus contending. Recently this court held that slanderous words—and, it follows, libelous words—may be actionable, even though they do not consist of an unequivocal and positive assertion. The common law system has not gone as far as the civil law in upholding actions for injurious words spoken or written. Yet even under that system there are decisions which uphold the principle laid down under the latter law.

The Supreme Court thinks that under the circumstances here the cause should be heard on the merits and the right of parties determined after having heard the testimony. In other words, it holds that as the record was made up, the inference from the text of the article complained of, under the asserted facts and circumstances, led to the conclusion that the plaintiff should be heard on the merits. It adds that it is not inclined to fan into greatest importance an issue which can not be thus characterized. At the same time it is evident to the court that there is a principle involved—the right of privacy and its extent, for it has considerable limitations. It can not be decided on an exception of no cause of action.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 9.

1 Circumcision. J. Knott, Dublin, Ireland.
2 *Clinical Observations on Salpingitis and Parametritis in Nulliparæ. S. W. Bandler, New York.
3 *Ionization by Means of the High Frequency Current in the Treatment of Tuberculosis. A. Goss, Adams, N. Y.
4 Fresh-air Homes and Medical Work in Connection with Them. L. R. Williams, New York.
5 *Resection of Stomach for Carcinoma. F. Torek, New York.

2. **Etiology of Salpingitis in Nulliparæ.**—Bandler says that the cause of salpingitis in nulliparæ when there has been no intrauterine manipulation is in most cases a latent unrecognized gonorrhea. He cites a number of instances that have come under his notice, and says that numerous cases of pelvic pain, sterility and ectopic gestation are the result of such cases of salpingitis.

3. **Ionization of Tuberculosis.**—Goss declares that in a state of health Nature seems to furnish in non-susceptible cases protective proteids found in the blood plasma called alexins. He believes the form of the electrode to be of great importance. He uses a vacuum tube for surface application which, instead of having a flat surface, is concave on the bottom with a wire extending lengthwise through the tube and a large disk made concave on the under surface to correspond in shape with the glass electrode and suspended about one-half inch from it. The superficial circulatory apparatus becomes greatly engorged by the application of the high frequency current, and the patient perspires profusely. By this drainage the specific gravity of the blood plasma is changed and there should then be a rapid absorption of the gases retained under the vacuum electrode. In this way the writer attempts to introduce substances into the circulation to take the place of the alexins where they are wanting. He reports a number of cases with favorable results.

5. **Resection of Stomach for Carcinoma.**—Torek believes that although in most cases of carcinoma of the stomach, when the tumor is large, a successful resection is impossible, nevertheless the procedure in each special case depends on its own merits. The operability can not be determined alone by the size of the tumor. Several questions must be considered: the ability to resect well beyond the limits of the disease, the extent of lymphatic involvement, the presence or absence of involvement of the pancreas or other neighboring organs, and the nature of the adhesions.

New York Medical Journal.

June 9.

6 *Military Hygiene of the Japanese Army. B. K. Takaki, L. J., N.
7 Arteriosclerosis: Its Relation to Disease of the Nervous System and to Disorder of its Function. J. Collins, New York.
8 *Dietetic Treatment of the Vomiting of Pregnancy. (To be continued.) L. Kolipinski, Washington, D. C.
9 *Critical Analysis of 186 Operations on the Liver and Gall Passages, and the After Results. (To be continued). C. A. McWilliams, New York.
10 *Abdominal Hysterectomy for Fibroid Tumor of the Uterus Complicated with Pregnancy and Prolonged Retention of a Fetus and Placenta. H. T. Williams, Rochester, N. Y.
11 Interscapulothoracic Amputation for Sarcoma of the Scapula. J. Douglas, New York.
12 Exfoliative Dermatitis in the New-Born (Ritter's Disease). B. M. Baker, Norfolk, Va.
13 Abuses of Ether in Abdominal Surgery. J. W. Kennedy, Philadelphia.

6. **Military Hygiene of Japanese Army.** Takaki's paper shows that the medical officers of the Japanese army are governed by rules which take nothing for granted, prescribing directions, in detail, for the preservation of the health of the soldier at all times and under all conditions. The rules of general hygiene are very explicit, considering the care of the finger nails, hair, feet, mouth, teeth, etc.

8. **Dietetic Treatment of Vomiting of Pregnancy.** Kolipinski states that a woman who has vomited incessantly for two or three weeks, who is too feeble to leave her bed, who has received varied and unsuccessful medicinal treatment, whose whole appearance as well as that of her family is one of alarm, who expels everything as if forced by fate, will find to her intense astonishment that the emesis does not occur after a breakfast of fried ham or bacon, that partaking of other solids improves her condition, and that she is able to be up again. Following the daily breakfast of pork in some form, with cocoa, chocolate, and corn bread, a dinner of beefsteak, roast or corned beef with rice, potatoes, spinach, cauliflower, kale or turnips, is offered. Fish, game, fowl and cheese may also be suggested, and they help to make up the evening meal. Foods which induce vomiting are water, taken freely, milk, tea, coffee, soups, and all kinds of fluids, neutral, acid and saccharine, custards, eggs, toast, and fruit. The most unstable combination of a diet is toast, eggs and sweetened tea, things which the stomach of no gravid woman in the early months will tolerate. To offer pork more than once a day is not objectionable, but it should at least be the first food taken each day until the cure is completed. The self-selected regimen in one instance was boiled ham twice a day for more than two months. Kolipinski has used this dietetic treatment in two cases of pernicious vomiting with success, and also in obstinate vomiting of the ordinary variety and believes it worthy of a trial.

9. **Analysis of Liver and Gall Passages.**—It is impossible to abstract McWilliams' paper because of its length and the many points brought out.

10. **Prolonged Retention of Fetus.**—Williams reports a case in which a dead fetus and placenta remained in the uterine cavity for nine months without undergoing decomposition and without causing serious symptoms, except a persistent nausea and gastric distress. The presence of a fibroid suggested a possible cause of the symptoms present and hysterectomy was advised. On opening the uterus after its removal a fetus and placenta, evidently of three months' development, was found in the left side of the uterine cavity in a good state of preservation. The uterine cavity below had been shut off by the encroachment of the fibroid.

The Boston Medical and Surgical Journal.

June 7.

14 *Origin and Nature of the Blood Plates. J. H. Wright, Boston.
15 Inflammation of the Frontal Sinus. H. P. Mosher, Boston.
16 Testimony of the Fathers. A. E. P. Rockwell, Worcester, Mass.

14. **Origin of Blood Plates.**—Wright believes that the blood plates are detached portions of the cytoplasm of giant cells.

Lancet-Clinic, Cincinnati, Ohio.

June 2.

17 Cancer of the Stomach from the Surgeon's Viewpoint. J. Ransohoff, Cincinnati.
18 Alcohol in Medical Practice. J. H. Kellogg, Battle Creek, Mich.
19 Pilo-Nidal Cysts and Sinuses. F. Hodges, Indianapolis.

June 9.

20 *Nature and Prognosis of Malignant Disease. J. D. Bryant, New York.
21 *How Progress Comes in Medicine. F. C. Shattuck, Boston.
22 Hysteria—Its Etiology and Nature. G. C. Altemeier, Cincinnati.

20-21.—See articles in THE JOURNAL, June 9, 1906, pages 1740 and 1746.

St. Louis Medical Review.

June 2.

23 Nephrectomy. F. C. Veemans, New York.

American Journal of Medical Sciences, Philadelphia.

June.

24 *Self-Restraint in the Practice of Surgery. L. A. Stimson, New York.
25 *Technic of the Newer Operations for Shortening the Round Ligaments and the Ureterosacral Ligaments for the Correction of Backward Displacement of the Uterus. E. C. Dudley, Chicago.
26 *Primary Malignant Disease of the Vermiform Appendix. H. D. Rolleston and L. Jones, London.
27 Case of Primary Carcinoma of the Vermiform Appendix. W. McA. Eccles, London.
28 Case of Volvulus of the Stomach. G. Streit, Middletown.
29 Dissecting Aneurism. A. S. Hamilton, Minneapolis.
30 *Arteriosclerosis of the Aorta. W. Ophüls, San Francisco.
31 Some Hitherto Undescribed Structures Found in the Large Lymphocytes of a Case of Acute Leukemia. J. Auer, Baltimore.
32 Teratoma of the Thyroid Gland. J. C. Herb, Oshkosh, Wis.
33 *Chronic Progressive Softening of the Brain: Report of Cases with Autopsies Simulating Cerebral Tumor. J. R. Hunt, New York.

34 *Present Status of Gastric Surgery. L. Frank, Louisville.
35 *Leucocytes in Gonorrhea. I. S. Wile, New York.
36 *The Urine in Normal Pregnancy. F. S. Mathews, New York.
37 *Bacteriology of Conjunctivitis. S. H. McKee, Montreal.

24. **Self-Restraint in Surgery.**—Stimson urges deliberation in regard to operative measures with a broad view as to the relations of the diseased structure and careful consideration of the results of the operation. He cautions against the too ready acceptance of new views and suggests that the frequent changes of theory and practice should teach the surgeon not to be overconfident of the value of the procedures that happen to be in vogue. Unnecessary removal of organs is not to be favored because they may subsequently become the seat of disease. The former thorough removal of tuberculous glands is rightly giving way to more conservative measures, and it is possible that with appropriate general treatment operation may be avoided in many cases in which it was formerly deemed imperative. Undue haste in the treatment of granulating wounds is often undesirable. The granulating surfaces may well be allowed to rest. Too active treatment of fractures and of diseased joints is to be deprecated.

25. **Shortening the Round Ligaments.**—Dudley improves Gilliam and Barret's method of drawing the round ligaments through an artificial canal into the laparotomy wound by making an artificial inguinal canal on each side through which the ligament is drawn and anchored intraperitoneally so as to avoid any danger of infecting the peritoneum in case of infection of the superficial wound. If the uterosacral ligaments are lax they should be shortened at the same time. The technic is illustrated.

26. **Malignant Disease of Appendix.**—Rolleston and Jones conclude their article as follows: 1. The disease is one which renders an accurate diagnosis impossible; every case in which the symptoms drew attention to this region exactly imitated appendicitis in some form. 2. Most of the older reputed examples fail to withstand investigation, but as 80.9 per cent. of the 42 genuine examples have been reported since 1900, the disease can not be quite so rare as has been thought. The microscopic size of the growth in some instances makes it probable that many such instances have been overlooked. 3. Pathologically several varieties of carcinoma have been reported, and also sarcoma and endothelioma. The growth is usually, however, a spheroidal-celled carcinoma which is peculiar in the early age-incidence, the slight malignancy, and the resemblance to endothelioma. Colloid change is not common as has been hitherto supposed. 4. The presence of concretions is only mentioned in 3 cases out of the 42. 5. The disease is not prone to affect one sex more than the other. 6. Inflammatory changes, either chronic or acute, frequently accompany the growth. 7. The immediate prognosis and the prospects of freedom from subsequent recurrence after operation are very good, particularly in the spheroidal carcinoma.

30. **Arteriosclerosis of the Aorta.** Ophüls expresses the following view of the process: Anatomically arteriosclerosis of the aorta is a unit. It is a chronic inflammatory process of the vessel wall which attacks all coats simultaneously, but which, as a rule, first produces more noticeable changes in the intima and adventitia. The absence of marked changes in the media in the beginning of the disease, to a certain extent, may be due to the fact that the tissues composing the muscle, especially the involuntary muscle, do not respond so readily to the same irritation which in ordinary connective tissue would produce severe anatomic alterations. The earliest changes in the intima and in the adventitia are a fibrous thickening accompanied in the adventitia by a greater accumulation of cells, probably because of the presence of the vaso vasorum. The fibrous thickening, especially of the intima, is followed by fatty degeneration, which may and often does extend into the media. The author reports 75 cases.

33. **Progressive Softening of the Brain.**—Hunt reports two cases of progressive softening of the brain due to arteriosclerosis or other vascular change in which the clinical course suggested cerebellar tumor. In general the clinical picture was that of a progressive and gradually developing hemiplegia, and the general cerebral symptoms resemble those described by Wernicke as chronic progressive softening without evident vascular lesion. The main trunks of the vessels of the circle of Willis were not occluded, but histologic study demonstrates the obliteration of the central end arteries in the ganglionic and capsular regions. The existence of a progressive softening not dependent on vascular changes may well be questioned. The clinical importance lies in the possible resemblance to abscess, encephalitis and tumor of the brain. Surgical interference in such a case might lead to infection, to which the softened tissues are peculiarly liable.

34. **Gastric Surgery.**—Frank's article is an enthusiastic plea for the more general recognition and extension of the field of gastric surgery.

35. **Leucocytes in Gonorrhea.**—Wile concludes as follows: The polynuclear neutrophiles are highest in acute anterior urethritis and decrease with involvement of the posterior urethra and are lowest in chronic gonorrhea in male or female. The mononuclear leucocytes are increased in the chronic processes and vary inversely with the polynuclear neutrophiles. The eosinophiles are slightly higher in acute anteroposterior urethritis than in acute anterior urethritis. That this is due to involvement of the glands or epididymis, prostate or posterior urethra is very doubtful, as the eosinophiles are comparatively lessened in chronic cases. The basophiles are hardly affected by the disease. There is no relation between appearance of any type of leucocyte in the blood and in the discharged pus. The eosinophiles are of no diagnostic value in gonorrhea.

36. **Urine in Normal Pregnancy.**—Mathews finds that from the fourth to the eighth month of pregnancy the specific gravity of the urine is considerably diminished. This depends on two conditions: 1. The pregnant woman during these months secretes rather more urine than the non-pregnant. 2. The nitrogen elimination is diminished. Three hundred grains of urea (determined by the hypobromite method) is above the average toward the end of pregnancy. This is in part explained by the body's retention of nitrogen and perhaps, in part, by variations in the pregnant woman's diet.

37. **Bacteriology of Conjunctivitis.**—McKee describes the findings in the three most important forms of conjunctivitis, pneumococcus, Koch-Weeks and Morax-Axenfeld. The bacteriologic diagnosis is of great aid to the prognosis and treatment. A pneumococcus infection is not very likely to spread by contagion, while the Koch-Weeks conjunctivitis will go like wildfire through a family. Specific treatment is known for the Morax-Axenfeld infection, and the best treatment for pneumococcus disease is different from that of the Koch-Weeks variety. In the milder forms of conjunctival irritation dependent apparently on errors of refraction, if not relieved by the correction of the refraction and astringent drops, bacteriologic examination will reveal the exact condition and lead to successful treatment.

Medicine, Detroit, Mich.

June.

38 *Treatment of Compound Fractures. E. H. Ochsner, Chicago.
39 *Certain States of Vascular Spasm and Fibrosis. H. A. Hare, Philadelphia.
40 *Arteriosclerosis as a General Disease. A. Stengel, Philadelphia.
41 Pathology and Diagnosis of Myocardial Inflammations and Degenerations. J. Daland, Philadelphia.
42 *Beriberi. P. A. Lovering, U. S. N.

38. **Treatment of Compound Fractures.**—Ochsner warns against transporting the patient too far with soiled clothing, directing that it be cut away, the limb wound, superficially cleansed and covered with gauze or other sterile cloth, the limb placed in a blanket splint and the patient taken where the first dressing can be applied. He cleanses the surrounding skin with turpentine to remove grease, etc., and applies to the wound tincture of iodin, which seals the mouths of vessels and lymphatics and prevents absorption. Too much plastic surgery should be avoided; the bone should not be wired, and the wound should not be too tightly closed. If it is desirable to apply plaster-of-Paris the space around the wound between the limb and the plaster splint should be packed with lamb's wool saturated with a solution of rubber in chloroform. When implication of a joint favors ankylosis, rest by immobilization, by limiting the growth of connective tissue, is

the best preventive, and this should be continued for three months, after which, if adhesions have formed, they should be broken up by active motion. If these measures are insufficient, forcible breaking up of the ankylosis, or some other operation, may be necessary.

39. **Vascular Spasm and Fibrosis.**—Hare emphasizes the following points: In cases of high tension due to fibrosis the nitrites can be of but little value, and the iodids with rest and massage the needful. Cases of very high tension are usually those in which the heart escapes sufficiently to help maintain the tension. As fibrosis in the peripheral vessels increases, the muscles of the larger vessels undergo hypertrophy, as does the muscle of the heart. It is quite as possible for vascular compensatory hypertrophy to rupture as for the cardiac compensatory hypertrophy to do so. This rupture of vascular hypertrophy often gives the heart a rest and permits it to recover from its fatigue, and so life is saved. It is possible, if the peripheral fibrosis be arrested, for the vessels also to regain power and a general improvement to ensue. The cardiac stimulants are not needed in these cases so much as rest and the skillful use of alteratives and vascular sedatives.

40. **Arteriosclerosis as a General Disease.**—Stengel recognizes three stages of arteriosclerosis as a general disease: 1. A preliminary one in which the symptoms due to the original etiologic factors are confused with those produced by the arterial disease. 2. A middle period in which the arterial disease is recognizable, but in which secondary organic changes have variable importance. 3. A final stage, circulatory and organic failure and terminal infections. Three types of early arteriosclerosis are observed: nutritional, neurasthenic and nervous. In more advanced stages it may attack the viscera, giving rise to: 1. The thoracic (a) cardiac, (b) aortic. 2. Abdominal, including (a) renal, (b) intestinal, (c) pancreatic, (d) hepatic. 3. Cerebrospinal. 4. Arteriocapillary types.

42. **Beriberi.**—Lovering adopts the infectious theory of the origin of beriberi and divides it into acute, subacute and chronic types. The acute form is always fatal largely in consequence of cardiac involvement. The subacute form shows paralyses, edema and slighter cardiac symptoms. The patients usually recover or else the disease assumes a chronic form. The various symptoms are due to a degeneration of the nerves. There is no specific, but salines are given to relieve constipation and edema, and digitalis seems to be the best drug to sustain the heart. In the chronic cases electricity is useful. Strychnin and other tonics are of value in improving the general condition. Prophylactic measures, isolation, disinfection, etc., should be applied as in other infections.

Annals of Surgery, Philadelphia.

June.

43 *Affections of the Thyroid Gland. G. E. Beilby, Albany, N. Y.
44 Branchial Fistula. M. J. Chevers, Manchester, England.
45 *Diagnosis of Esophageal Lesions. B. W. Sippy, Chicago.
46 *Postoperative Ileus. J. M. T. Finney, Baltimore.
47 Backward Dislocation of the Second Carpometacarpal Articulation. C. B. Lyman, Denver.
48 *Cornu Cutaneum of the Human Scalp. H. L. Nietert and E. A. Babler, St. Louis.
49 Self-Retaining Trocar and Canula for the Aseptic Evacuation of Distended Viscera. H. Lilienthal, New York.

13. **Affections of the Thyroid Gland.**—Beilby suggests the importance of bearing in mind in diagnosis of thyroid affections the general principle that if the gland is symmetrically enlarged hypertrophy is present, while if a partial enlargement occurs a cyst or tumor is likely to be found. Hypertrophy is a diffuse although not necessarily symmetrical affection, and in some cases the preponderating enlargement of one side may suggest cyst, while occasionally the development of two cysts, one on each side, may simulate hypertrophy. These cases, however, are, as a rule, easily distinguished. Simple hypertrophy usually occurs before the age of 20; exophthalmic goiter between 20 and 30. The early diagnosis of carcinoma is difficult. Age, short duration or sudden increase in size, prominence of dyspnea and dysphagia are prominent factors. The excision of simple hypertrophy should be undertaken for pressure symptoms but rarely for cosmetic reasons. The tendency to the development of carcinomata in hypertrophied glands should be taken into consideration. Partial excision has given good results in cases of exophthalmic goiter unimproved by medical treatment. In the 6 cases reported by Beilby 4 have given excellent results. The best results are those of Kocher, who cured 75 per cent. of 59 cases, with 6.7 per cent. mortality.

45. **Diagnosis of Esophageal Affections.**—Sippy classes these disorders as functional and anatomic. Functional affections may be sensory, as hyperesthesia, or motor, as spasm. Hyperesthesia is indicated by pain especially complained of when a bougie is introduced while the esophagoscope shows a normal mucous membrane. Globus hystericus is an example of esophageal spasm. Inflammation is rare unless caused by the swallowing of caustics. Ulcer seldom occurs, except from carcinoma. The symptomatology of esophageal stenosis is important, as grave mistakes in diagnosis have occurred, the difficulty being attributed to gastric disease and in some cases gastroenterostomy has been unnecessarily performed. If the symptoms indicate and there is no contraindication, the passage of a soft stomach tube should first be used to locate the seat of obstruction. The presence of carcinoma should not be assumed without taking into account other possible causes of stenosis, extra-esophageal, such as aneurisms, tumors, spondylitis, pericardial effusion, diverticulum, or intra-esophageal as tumor, cicatrix, spasm, diverticulum and foreign bodies. The diagnosis of carcinoma is made by considering the course, presence of blood in the feces, characteristic odor on passing the stomach tube, location of the growth (50 per cent. near the cardia, 40 per cent. opposite the tracheal bifurcation and only 10 in the upper part of the esophagus), and finally the appearance as revealed by the esophagoscope. The presence of secondary anemia may be of assistance. Diverticula occurring in the upper part may show a tumor in the neck; in the lower section they may be detected by the course of bougies, the nature of the contents and by the *x*-ray after the ingestion of bismuth suspended in some thick liquid. Cardiospasm is usually easily diagnosed by the fact that while the obstruction is impervious to food, even liquids, it yields to the pressure of a tube or bougie.

46. **Postoperative Ileus.**—Finney concludes his article as follows: 1. Broca's classification into early and late varieties simplifies the diagnosis. In the former class, which so frequently is associated with peritonitis, the differential diagnosis as to variety is always difficult and often impossible. In the latter, which consists almost entirely of the mechanical form, it is usually easy. 2. Adhesions are the chief factor to be reckoned with in the attempt to prevent the occurrence of postoperative ileus, and efforts directed toward this end are likely to be productive of the best results. 3. That drainage exercises a marked influence in the production of adhesions can not be denied. 4. Prompt treatment is indicated in every case after palliative measures have been given a fair trial and have failed. The character of the operation depends on the nature of the obstruction and the condition of the patient. 5. The prognosis is unfavorably influenced by the presence of infection. In its absence it is excellent.

48. **Cutaneous Horns.**—Nietert and Babler report a case in which two horns grew from sebaceous cysts over the parietal region and were accompanied by sebaceous cysts on the face and also by a cutaneous cancer on the right side of the nose. The growths were removed without difficulty. The case suggests the possible relation of these growths to sebaceous cysts and the danger of their being transformed into cancer.

American Journal of Surgery, New York.

June.

50 Dilatation of the Non Gravid and of the Gravid Uterus. A. Dührssen, Berlin.
51 *Excision of the Transverse Colon, Sigmoid and Rectum for Multiple Stricture and Ulcerative Colo-Proctitis. S. G. Gant, New York.
52 Atrophy of the Testicle. L. B. Bangs, New York.
53 *A Simple and Practical Method of Performing Anastomosis by Means of Two Knitting Needles. V. Pleth, Crookston, Minn.
54 Office Treatment of Rectal Diseases. W. Beach, Pittsburg, Pa.
55 Plaster-of-Paris and How to Use It. (To be continued). M. W. Ware, New York.
56 Paranephritic Sclerosis: Its Etiology, Symptoms and Treatment. A. A. Berg, New York.
57 Value of the Roentgen Rays in Surgical Diagnosis. (To be continued.) C. Beck, New York.

51. **Excision of Transvere Colon.**—Gant's patient suffered from diarrhea, with frequent discharge of bloody mucus due to a chronic ulcerative colo-proctitis. The rectum had been removed and two artificial ani had been made, one in the left and the other in the right inguinal region, without affording relief. Gant removed the last half of the transverse colon, the descending colon and sigmoid, and made an artificial anus below the umbilicus. The other openings were closed and a very satisfactory result was obtained. The colon showed several constrictions, its lumen being narrowed by thickening of the wall of the intestine.

53. **Intestinal Anastomosis.**—Pleth first unites the serous surfaces of the opposed guts with a running suture of linen thread for a distance of from 7 to 10 cm. This he terms the posterior suture. He then passes an ordinary knitting needle through the gut wall about 1 cm. from the posterior suture, causing it to traverse the lumen of the gut for a distance less than the length of the posterior suture, emerging again on the serous surface. The two needles are brought together, laid parallel, and a straight needle armed with strong silk (or silkworm gut) passes back and forth through the opposite gut walls in such a way that the suture always runs under the needle, the stitches being taken close together. The small bridge of gut wall which overlies the needles is burned or scraped away and the needles are removed. The posterior suture is now continued in the serosa in such a manner as completely to bury the two openings in the opposed gut sections. If desired, another interrupted or continuous serosa-serosa suture may be added. The silk suture is now withdrawn and the anastomosis is completed.

Bulletin of the Johns Hopkins Hospital, Baltimore.

June.

58 *Two Cases of Stricture of the Ureter; Two Cases of Hydro-Nephrotic Renal Pelvis Successfully Treated by Plication. H. A. Kelly, Baltimore.
59 Use of Quinin During the Civil War. J. W. Churchman, Baltimore.
60 *Importance of a Microscopic Examination of All Growths Removed from the Nares, Together with a Report of Early Diagnoses of Malignant Growths. S. Rosenheim, Baltimore.
61 *An Experimental Study on the Recurrence of Lymphatic Glands and the Regeneration of Lymphatic Vessels in the Dog. A. W. Meyer, Baltimore.

58. **Stricture of Ureter.**—Kelly reports two cases successfully treated. In the first case the stricture was located at the vesical opening and the ureter was distended into a small cyst from which the urine could be observed to flow drop by drop, but at intervals the cyst became greatly distended and the flow of urine became greater. Incision of the opening with delicate scissors resulted in cure. In the second case the stricture was situated near the pelvis of the kidney and was treated by opening the kidney pelvis and dilating the stricture by passing a small metal catheter. The incision in the pelvis was then closed and the patient made a good recovery. The author also reports two cases of hydronephrosis treated by plication of the pelvis of the kidney.

60. **Diagnosis of Malignant Growths in the Nose.**—The importance of a microscopic examination of all growths removed from the nares is emphasized by Rosenheim. Especially in case of malignant growths is this to be desired because they can be discovered at a time when, on account of their small size, they can be removed by the nasal route; and if this is not feasible a radical operation can be done, at a time when there is the greatest possibility of a cure. Moreover, knowing the nature of the growth removed, we are on the watch for recurrences and are prepared to treat them vigorously. Six cases are reported, three of sarcoma and the other three showing the initial stage of carcinoma or a tendency thereto.

61. **Regeneration of Lymphatic Vessels and Glands.**—Meyer has tried to solve by experimental methods the problem of whether or not the lymphatic vessels and glands regenerate. The evidence, so far as the larger vessels and the glands are concerned, appears to be negative. The possibility of the formation of lymphatic capillaries in granulation tissue for the present must be left undecided, as no conclusive experimental evidence on the subject has been produced. The possibility of regeneration of glands in very young animals must be omitted, but it is probable that the glands found in older animals or in man after operations arise from the enlargement of already existing structures. The author has found that it is very difficult to recognize the smallest glands with the naked eye.

Interstate Medical Journal, St. Louis, Mo.

June.

62 Gross Abnormalities of the Appendix Vermiformis. A. P. Heineck, Chicago.
63 *Talma's Operation for Cirrhosis of the Liver. E. Smith and N. B. Carson, St. Louis.
64 Criminal Abortion. J. M. Grant, St. Louis.
65 Massage in Neuroses. J. F. Menestrina, St. Louis.

63. **Talma's Operation.**—Smith and Carson report a case successfully treated by this method. The statistics of the operation seem to indicate a mortality of from 40 to 60 per cent. against an almost certain fatal result by the ordinary expectant methods.

Pennsylvania Medical Journal, Athens.

May.

66 *Technic Employed in the Last One Hundred Laparotomies with the View of Restricting the Employment of Drainage. L. J. Hammond, Philadelphia.
67 Appendicitis Treatment of General Septic Peritonitis. C. H. Ott, Sayre.
68 *Treatment of Pus Cases in Abdominal Work. R. Burns, Scranton.
69 Hysteria Simulating Brain Tumor. T. H. Weisenburg, Philadelphia.
70 Case of Acute Myelitis Ending in Recovery. H. B. Allyn, Philadelphia.
71 Statistical Study of Appendicitis. G. D. Nutt, Williamsport.
72 Ocular Manifestations. F. C. Stahlman, Charleroi.

66 and 68.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1438.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

June.

73 First Aid on the Battlefield. N. Senn.
74 Beriberi or Alcoholic Neuritis? J. S. Taylor, U. S. N.
75 Beriberi and Dhobie Itch. Few Remarks on Their Etiology and Treatment. J. M. Furnell, U. S. N.
76 Brief Sketch of the Evolution of the Medical Service of the British Army. W. J. R. Rainsford, Bermuda.
77 Organization for Instruction in Colonial Medicine. M. le Dr. Brouardel and M. le Dr. Wurtz, Paris.

The Journal of Infectious Diseases, Chicago.

May 18.

78 Two Cases of Relapsing Fever; the Occurrence of this Disease Throughout the World at the Present Day. R. J. Carlisle, New York.
79 Study of a Spirochete Obtained from a Case of Relapsing Fever in Man, with Notes on Morphology, Animal Reactions, and Attempts at Cultivation. C. Norris, A. W. Pappenheimer and T. Flournoy, New York.
80 Studies on Spirillum Obermeieri and Related Organisms. F. G. Novy and R. E. Knapp, Ann Arbor, Mich.
81 Trypanosomes of Tsetse Flies. F. G. Novy, Ann Arbor.
82 Methylene Violet and Methylene Azure. W. J. MacNeal, Ann Arbor.
83 Are Opsonins Distinct from Other Antibodies? L. Hektoen, Chicago.
84 Observations on Phagocytosis of Diphtheria Bacilli. H. A Reque, Chicago.
85 Latent Pneumococcemia. H. E. Wolf, Chicago.
86 Etiology and Diagnosis of Hydrophobia. A. W. Williams and M. M. Lowden, New York.

The American Journal of Urology, New York.

June.

87 Operative Treatment of Prostatic Hypertrophy. W. N. Wishard, Indianapolis.
88 Symptomatology of Chronic Hypertrophy of the Prostate. F. R. Sturgis, New York.
89 Pathology of Prostatic Hypertrophy. W. S. Reynolds, New York.
90 Physical Examination in Prostatic Hypertrophy. E. L. Keyes, Jr., New York.
91 Limitations of the Catheter in Prostatic Hypertrophy. H. Goldenberg, New York.
92 Conditions in which the Bottini Operation is Indicated in the Operative Treatment of Prostatic Hypertrophy. W. Meyer, New York.
93 Urine in Prostatic Hypertrophy. L. Heitzmann, New York.

Louisville Monthly Journal of Medicine and Surgery.

June.

94 Puerperal Eclampsia. H. E. Tuley, Louisville.
95 Hyperemesis Gravidarum—Toxemia of Pregnancy. B. A. Allan, Louisville.
96 Pneumonia—Its Prognosis and Prevention. S. J. Meyers, Louisville.
97 The Time Factor in Appendicitis. J. R. Bullitt, Louisville.
98 Plea for Simple Life and Unity for the Doctor. B. C. Frazier, Louisville.

Mississippi Medical Monthly, Vicksburg, Miss.

June.

99 Pneumonia and Its Treatment. L. D. Harrison, Clarksdale.
100 Lobar Pneumonia. S. P. Klotz, Summit.
101 The Hypertrophied Tonsil. A. G. Payne, Greenville.
102 Medical Ethics. J. T. B. Berry, Brandon.

The Journal of Cutaneous Diseases, New York.

June.

103 Erythema Perstans. G. W. Wende, New York.
104 Case of Chronic Ulcerations in the Pubic and Inguinal Regions. S. Pollitzer, New York.
105 Intramuscular Injections in the Treatment of Syphilis and the Use of the Sozoiodolate of Mercury. (To be continued). A. Garceau, San Francisco.
106 Two Cases of Larva Migrans, with Special Reference to the Treatment. M. B. Hutchins, Atlanta, Ga.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

May 26.

1 *Early Conditions of Cancer of the Tongue. H. T. Butlin.
2 Early Recognition of Cancer of the Breast. G. L. Cheatle.
3 *Propagated Cancer. E. F. Bashford.
4 Radical Operation for Cancer of the Lower Lip. J. Hutchinson.
5 Secondary (Metastatic) Carcinoma of the Ovaries. J. Bland-Sutton.
6 *Surgery of Sarcoma in Kashmir. A. Neve.
7 *Color of the Hair in Ovarian Dermoids. S. G. Shattock.

1. **Cancer of the Tongue.**—Butlin says that formerly he divided cancerous lesions of the tongue into three stages: 1. Predisposing conditions, such as leucoplakia, ichthyosis and glossitis; 2. precancerous conditions, such as warty growths, thick plaques and sore places which are not actually cancerous, but which inevitably proceed to cancer unless they are completely removed or destroyed; 3, actual cancer. Recent experience, however, has taught him that many of the conditions in groups 1 and 2 are examples of actually developed cancer in its early stages. He describes 7 cases in which the cancer was found under the following forms: 1. A flat, very slightly raised, smooth, red glazed plaque, feeling like a thin piece of gristle in the surface of the tongue, not thicker than a 10-cent piece, and looking and feeling just like a primary hard sore. 2. A white warty growth, not ulcerated, and scarcely indurated at its base. 3. A slight thickening and hardening of an old leucoplakic area, rather distinguishable to feel than sight. 4. A nodular plaque, red and commencing to ulcerate, with drawing-in of the surrounding tissues.

3. **Propagation of Cancer.**—Bashford illustrates the facts demonstrated by recent experiments on the propagation of cancer in animals. He calls attention to the fact that the first stages of the disease may exist without the production of symptoms. A small piece of mouse cancer transplanted into the subcutaneous tissue, if it grows, ultimately gives rise to a mass of new growth nearly as great as the mouse itself. It produces metastases in the lungs, and leads to the death of the animal. If the tumor be removed by operation, when it has reached the size of an almond, these results do not follow. The mouse remains well indefinitely, although the tumor transplanted into other mice continues to grow. In the same way in the human subject carcinoma and sarcoma are at first local processes taking place in circumscribed areas; their complete removal prevents the further extension of the disease. In this early state, however, the anatomic and histologic lesion constitutes the most reliable criterion of the presence of cancer; symptoms are absent and the removal of a piece of tissue, which can not be shown to be cancerous, or ultimately proves to be non-cancerous, is to be preferred to delay until the naked-eye appearances have raised suspicion to probability. He asks: Are not the consequences of the growth of a small piece of mouse cancer no bigger than the head of a pin sufficient to convince the most skeptical of the justice of this attitude?

6. **Surgery of Sarcoma.**—Neve analyzes the results of removal of sarcomatous growths in the Church Mission Hospital, Kashmir. One hundred and eighty-four growths have been operated on. Of the patients, 80 per cent. were males. The mean age is 40, the ages varying from 5 to 70. Thirty-six per cent. of the tumors were of less than one year's growth. In 2 cases the whole scapula was excised. Many tumors from the flank, abdominal wall or lumbar region were very extensive, and of these few appear to have recurred. Altogether 11 exploratory operations were done; in 12 others the removal was incomplete. In 16 cases there was recurrence, and in 10 others it was doubtful whether extirpation was complete. Three patients died in the hospital or soon after leaving. The remaining 132 are regarded as probably cured, which gives 70 per cent. of successful cases.

7. **Color of Hair in Ovarian Dermoid.**—Shattock believes that ovarian dermoids arise not from a strict parthenogenesis, but from a fertilization of the primordial ova by surplus spermatozoa enclosed in the ovum at the time of conception. In this way he would account for the color of the hair in ovarian dermoids differing from that of the woman bearing the parasite.

The Lancet, London.

May 26.

8 How the Fight Against Tuberculosis Now Stands. R. Koch.
9 Preservation of Health Among the Personnel of the Japanese Army and Navy. B. Takaki.
10 Autointoxication; Its Relation to Certain Disturbances of Blood Pressure. H. B. Shaw.
11 *Hematoma of the Ovary and Certain Other Closely Allied Conditions. H. W. Wilson.
12 *Hemorrhagic Purpura During Convalescence from Scarlet Fever. A. G. Banks.
13 *Immediate Treatment of Extensive Wounds on Field Service. C. A. Gill.

11. **Hematoma of the Ovary.**—Wilson divides hematoma of the ovary as follows: 1. A group of cases designated as idiopathic. 2. Those due to torsion of the pedicle of the ovary causing obstruction to the venous return. There are three main causes of this: (a) hernia of the ovary; (b) rotation of a slightly enlarged ovary causing twisting of the broad ligament, and (c) the presence of some abnormal predisposing condition in the pelvis—e. g., a broad ligament cyst, the actual twist being brought about by some sudden muscular movement or strain, perhaps associated with a distended bladder. This last variety is analogous to torsion of the testicle seen in cases of imperfect descent. 3. Toxic conditions causing punctiform or more extensive hemorrhage: (a) some of the acute specified fevers—viz., scarlet fever or enteric fever; (b) profound septic intoxication—viz., general peritonitis or puerperal sepsis. It is also seen sometimes postmortem in fatal cases of perforated gastric or duodenal ulcers. 4. Ovarian pregnancy.

Wilson gives the history of 8 cases representing the first and second classes. The greatest interest is attached to the first class. It occurs particularly in young patients and is mostly due to hemorrhage into the cavity of a ruptured Graafian follicle. It is likely to occur at the time of a menstrual period and presents two cardinal symptoms: abdominal pain and uterine hemorrhage. The pain, tenderness and abdominal rigidity may suggest perforating gastric or duodenal ulcer or appendicitis. In certain cases it has been mistaken for ovarian pregnancy. Diagnosis is very difficult before opening the abdomen, and the condition may be overlooked even then if attention has not been directed to its possibility.

12. **Purpura Hemorrhagica in Scarlatina.**—Banks describes a case of hemorrhagic purpura coming on during convalescence from scarlatina and characterized by hematemesis and the occurrence of large petechiæ over the elbows. Under morphin and calcium chlorid the patient, a man, made a good recovery. Albumin appeared in the urine coincident with the purpura, and continued in small quantity until his discharge. The author suggests that the hemorrhagic tendency is due to the same influences which produce nephritis in scarlatina.

13. **Immediate Treatment of Wounds.**—Gill, in considering the immediate treatment of extensive injuries on field service, emphasizes the following points: 1. The immediate application of an antiseptic lotion to large wounds. 2. To provide the necessary antiseptic the addition of tabloids of perchlorid of mercury to the first field dressing packet is suggested. 3. Following the first dressing a period of rest may be allowed, which is highly convenient to the medical staff and conducive to the well being of the patient. 4. Removal by

ambulance transport to field hospital, where operation may be undertaken on a patient whose vital powers have largely recovered from the shock consequent on his wounds.

Indian Medical Gazette, Calcutta.

May.

14 *Early Occurrence of Adipocere. J. C. Vaughan.
15 Operations for Cataract. R. H. Elliot.
16 *Beriberi in Sylhet Jail. E. A. W. Hall.
17 Surgery of Sarcomata. A. Neve.
18 Season and Some Diseases in Madras. J. W. Cornwall.

14. **Early Occurrence of Adipocere.**—Vaughan calls attention to the fact that while it is ordinarily believed that a considerable time is necessary for the formation of adipocere, five weeks being the shortest in time in any authentic account, yet it is admitted by Taylor that there is no doubt that the process may take place partially in the dead body within a much shorter period. Vaughan cites 5 cases in which this change had occurred in from two to four days. In 4 of these cases the body had not been buried.

16. **Beriberi.**—Hall discusses the various theories to account for the occurrence of beriberi. In the cases occurring in Sylhet jail, 158 in number, with a mortality of 13.3 per cent., the rice theory is not applicable, as the rice was freshly husked and never more than two days old. In favor of the place theory are: 1. The epidemic affected certain groups of inhabitants of the jail working in definite places and did not affect the other groups to whom the same food and water were supplied. 2. When the prisoners were removed to camps the disease stopped, although they continued to get the same food and water as they had in jail. The theory of the propagation of the disease by bedbugs receives some support from the fact that the bedding of the patients was infested by these vermin, but, on the other hand, the same bedding was issued indiscriminately to the three groups, and when moved to camp the same bedding was used, and for the sick the same wooden beds, yet the epidemic ceased. The author considers that the place theory is the most important and believes that the infection lies in the floor of the building and is inhaled through the mouth and nose; and that the bacillus first lodges in the fauces, producing the faucial redness and tenderness which is so common a symptom in the disease, and passes thence to the stomach and duodenum.

The Australasian Medical Gazette, Sydney.

April 20.

19 President's Address of New South Wales Branch of British Medical Association. J. L. Beeston.
20 *Operative Treatment of Enlarged Prostate. H. L. Maitland.
21 Cases of Infantile Scurvy. H. Swift.
22 *Typhoid Fever in New South Wales, 1898-1904. R. J. Millard.
23 Two Cases of Hydramnios. A. A. Lendon.
24 *Case of Myasthenia Gravis in Special Relation to Eye and Throat Conditions. G. H. Hogg.
25 Treatment of Cerebral Hemorrhage. J. E. F. McDonald.
26 Fatal Case of Formalin Poisoning. A. Palmer.

20. **Operative Treatment of Enlarged Prostate.**—Maitland summarizes his paper as follows: 1. Clinically there are two forms of enlargement—the soft or adenomatous and the hard or fibrous, but there are many gradations between the two varieties. 2. The operative treatment of the soft variety is by enucleation, preferably by the perineal route. 3. The operative treatment of the hard variety is by cauterization through a median perineal incision. 4. A median perineal section should be the first step in any operative measure on the enlarged prostate. 5. If suprapubic enucleation be performed the perineal section lessens the risk, since it provides the necessary drainage. 6. It is necessary to explore the prostate digitally before being able to decide on the proper operative measure.

22. **Typhoid Fever.**—Millard concludes his paper as follows: 1. Typhoid has very regular recurring seasonal variations agreeing with those of infantile diarrhea, which corresponds closely to those observed in other parts of the globe. 2. The typhoid bacillus is dependent for its dissemination in some way on external conditions, as exemplified in the difference between the incidence rates of the coast and inland districts. 3. The infection of water supplies has not been an important factor in spreading typhoid fever in New South Wales. 4. Infection from a previous case, either directly in the sick room or indirectly from excreta imperfectly disinfected or improperly disposed of, has been a factor of great importance. From this it results that the two essentials in dealing with any outbreak are: 1, To isolate the sick, and 2, to disinfect their excreta.

24. **Myasthenia Gravis.**—Paralysis of the soft palate was first noticed in Hogg's case following a sore throat and suggesting diphtheritic paralysis; it varied much in degree, but continued until the end. Paresis of acommodation of the eye was noticed early; it disappeared in a week or two, returning at a much later stage. Other inconstant paralyses of the eye muscles were ptosis of right side, paresis of right external rectus, and paresis of corrugator supercilli. The pupil reaction, vision for form and color, the field of vision and the fundus were normal. Paralysis of the pharyngeal muscles and probably of the epiglottis varying much in degree were observed; also paresis of the abductors and tensors of the vocal cords. The tongue became affected toward the last so that it could not be protruded from the mouth. The continual remissions and exacerbations in the symptoms were striking. The symptoms were all increased at the menstrual period which was followed by a temporary amelioration. Fatigue seemed to increase the paralysis which was usually worse toward evening. Treatment was without avail. Tubal feeding gave rise to most alarming symptoms of dyspnea and faintness. The pathology of the disease and especially the "lymphorrhages" of Buzzard, collections of small cells resembling lymphocytes between the fibers of muscles or between the cells of a glandular organ, are described.

Presse Médicale, Paris.

27 (XIV, No. 33.) La rétention de l'urée. G. Paisseau.
28 (No 39.) *Tardy Death from Chloroform.—La mort tardive par le chloroforme. Tuffier, Mauté and Aubertin.
29 *When Should Bromids be Prescribed in Nervous Affections?—Quand doit-on prescrire les bromures aux neuropathes? P. Hartenberg.
30 (No. 40.) L'amyotrophie à type lombo-pelvi-femoral. Raymond and G. Guillain.
31 *Action du régime achloruré sur les variations de poids au cours de la scarlatine ("salt starvation" in scarlet fever). H. Pater.

28. **Delayed Poisoning from Chloroform.**—In THE JOURNAL for Sept. 9, 1905, the occurrence of a tardy hepatic toxemia as the result of chloroform anesthesia was discussed both editorially and in an exhaustive monograph by Bevan and Favill. In the current volume, page 341, West offers an explanation for the delayed poisoning. Tuffier, Mauté and Aubertin here report 2 new cases, demonstrating anew that chloroform accumulating in the organism is liable to induce a subacute hepatitis possibly fatal. The symptoms began in each case about thirty-six hours after the salpingectomy or abdominal hysterectomy, the patients exhibiting prostration and delirium with dilatation of the pupils, weakness, rapid pulse, normal temperature, incessant vomiting, at first bilious, then blood-stained, with subicterus, but no peritoneal reaction or leucocytosis, and the blood sterile. A distinct, constant odor of chloroform in the breath was most significant. Within three days the symptoms gradually subsided to complete recovery in one patient, but progressed in the other to fatal coma. They quote extensively from the articles in THE JOURNAL mentioned above, their conclusions harmonizing with those published. They state that there is now a total of 50 such cases on record, more than half being in children. They ascribe the trouble to an individual defective elimination of the chloroform. The organs retain it for some mysterious reason, and, as the anesthetic continues to exert its injurious action so long as it is in the body, the patient feels the effect the same as if he were being subjected to a constant succession of general anesthesias. They base this assumption on the constant odor of chloroform in the breath during the entire course of the symptoms. Guthrie mentions that the nerve centers smelled strongly of chloroform in a case that came to dissection. These facts emphasize the danger of repeating a chloroform anesthesia before the organs have had time to recover from the effects of the first. Administration of oxygen seems theoretically indicated. The evidences of this delayed poisoning from chloroform aid in restricting the already diminishing number of cases of "operative shock."

29. **When Should Bromids Be Prescribed in Nervous Affections?**—Hartenberg declares that the bromids should be or-

dered in case of nervous affections when there is agitation, excitement, palpitations, spasms, angor, etc., on condition that the nourishment of the general system and of the nerves is satisfactory. Whenever there is fundamental nutritional disturbance it is wisest to refrain altogether from the bromids. Ready fatigue, exhaustion, muscular hypotonicity, arterial hypotension, etc., point to nutritional disturbance, and analysis of the urine will determine the exact state of the nutritional exchanges. If the system needs to be built up, then the bromids are contraindicated, except in epilepsy. He gives them in the form of a cachet at the middle of the meals.

31. **Reduction of Salt in Diet in Scarlet Fever.**—Pater reports the results of salt starvation in 15 cases of scarlet fever. They demonstrate beyond question, he thinks, that this method of treating scarlet fever is absolutely simple and harmless, while it protects against complications, especially on the part of the kidneys. He found that in his cases the course of the disease was shorter than usual, convalescence commencing earlier. If albuminuria was noted at first it subsided as salt was dispensed with. Dopter has also reported similarly favorable experiences, all tendency to nephritis being apparently averted.

Semaine Médicale, Paris.

32 (XXVI, No. 21.) Revision de la question de l'aphasie: la troisième circonvolution frontale gauche ne joue aucun rôle spécial dans la fonction du langage (third convolution has no special rôle in speech). P. Marie. 10 illustrations.

Beitraege z. Geb. und Gynäkologie, Hegar's, Leipsic.

Last indexed XLIII, page 1507.

33 (IX, No. 2.) Abdominelle und vaginale Exstirpation des karzinomatösen Uterus. A. Döderlein.
34 Vollkommene Neubildung des Blasenverschlusses und der Harnröhre. Urethrosphincteroplastik. H. Sellheim.
35 Manual Investigation of the Pelvis and Exact Measurements. Limits for Spontaneous Birth with Contracted Pelvis.—Zur Lehre vom engen Becken. Id.
36 Hydromeningocele sacralis anterior. F. v. Neugebauer (Warsaw).
37 (No. 3.) Kasuistik zur Hypertrichosis universalis acquisita mit Veränderungen der Sexual-Organe. Alberti.
38 Ueber Gravidität in der verschlossenen Hälfte eines Uterus bilocularis. J. Werner.
39 Zur Histologie des Breusschen subchorialen Hämatoms. O. Frankl.
40 Ueber multiples primäres Vulva-Karzinom. Fromme.
41 *Influence of Food of Mother Animals on Development of Fetus.—Einfluss der Ernährung der Muttertiere auf die Entwicklung ihrer Früchte. M. Reeb.
42 Extended Freund Operation for Uterine Cancer and Surgery of the Ureters.—Erweiterte Freundsche Operation des Gebärmutterkrebses und Ureteren Chirurgie. H. Sellheim.
43 *Klinische und experimentelle Versuche über postoperativen Ileus. K. Balsch.
44 Die Angiome der menschlichen Plazenta. G. Schickele.
45 Eine teratoide Mischgeschwulst des Uterus. M. Penkert.
46 To Enhance Resisting Powers by Artificially Induced Leucocytosis.—Zur Steigerung der Widerstandskraft des Organismus durch künstliche Leukozytose. Pankow.

41. **Influence of Food of Mother Animals on Development of Fetus.**—Reeb found that Nature produces less substance when the mother is insufficiently fed, but that the elements harmonize in the proper proportions. The maternal organism seems to be drawn on for the lacking elements.

43. **Postoperative Ileus.**—Baisch has studied this subject exhaustively on animals and in the clinic. The prognosis is so grave that the first symptoms of obstruction should sound the alarm. His experience indicates that the presence of blood is the principal factor in the production of adhesions. When the operation is bloodless adhesions do not develop. It is not a mere coincidence that Zweifel, who is the most vehement advocate of "blood dry" operating, has had postoperative ileus in only 2 out of 800 laparotomies, and in these adhesions had been found when the abdomen was first opened. The only means of preventing the formation of adhesions and of breaking up those forming are to place the intestines in their normal position, to stimulate peristalsis early, to refrain from cleaning out the intestines too thoroughly before the operation, and to banish opium from the preliminary and after-treatment. Peristalsis may be stimulated by an enema the second day after the operation and by magnesia or castor oil early the third day and after. If neither flatus nor stools have passed by the fourth day, all food and drink by the mouth should be suspended, and the intestines should be flushed. If there is much vomiting the stomach should be rinsed. He has never found atropin effectual, but advises pouring castor oil into the stomach (50 gm.) as a last resort. If this does not give relief, the situation becomes critical, and after the fifth day—watching the pulse—the necessity for a secondary laparotomy must be considered. The pulse reveals approaching improvement. If it becomes stronger and slower, less tense, this sometimes announces the overcoming of the obstacle before stools and flatus appear. If the pulse grows smaller and faster, waste no more time on symptomatic measures. Do not be deceived by the appearance of a few scybala in the enema water. One patient succumbed on the ninth day, although some feces had appeared in a high enema given the sixth day. The autopsy revealed adhesions and perforation of a gangrenous loop in the small intestine in the small pelvis. The obstacle is generally in the small pelvis, even after a laparotomy. Vaginal intervention will frequently relieve without the necessity for opening the abdomen again. In 4 cases he cured the ileus by placing the patient in the lithotomy position and reopening the colpotomy wound with his finger. The entire small pelvis was then examined, and loops of intestine found adherent were stroked free and lifted. A pad of gauze in the Douglas cul-de-sac keeps the intestines from sliding down. Afterward a high injection is given and the abdomen cautiously massaged. Anesthetics are not required. Thirteen patients were cured by a second laparotomy. In 3 a fecal fistula persisted for a time, but finally healed. The healing proceeded most smoothly when the intestine had been emptied by means of a trocar, but even then there was generally suppuration at one or more points.

Beiträge zur Klinik der Tuberkulose, Würzburg.

47 (V, No. 1.) *Ueber die klinische Bedeutung der Ehrlichschen Diazo-Reaktion bei Lungen-Tuberkulose. F. Junker.
48 *Die Lösungsverhältnisse bei Pneumonia fibrinosa und Pneumonia tuberculosa sive caseosa (conditions of resolution). V. Schläpfer.
49 Cyklischer Verlauf bei Lungen-Tuberkulose. G. Heimann.
50 Sporadischer Skorbut als Komplikation einer "tumor-artigen Coekal-Tuberkulose." Bickhardt.
51 Streitfragen in der Lehre vom Fieber der chronischen Lungen-Tuberkulose. G. Schröder.
52 (No. 2.) *Wie breitet sich die Genital-Tuberkulose aus? ("Ascension" und "Descension.") O. R. Teutschlaender.
53 *Ueber suggestive Temperatur-Steigerungen bei Tuberkulösen. P. Lorenz.
54 Fall von congenitaler Tuberkulose. Diagnose der Tuberkulose im frühesten Kindesalter (in infancy). F. Hamburger.
55 *Spread of Tuberculosis by Way of the Lymph.—Verbreitung der Tub. den Lymphgebieten entlang. Haentjens (Putten, Holland).
56 (No. 3.) *Experimentelle Uebertragung der Tuberkulose vom Menschen auf das Rind (transmission from man to cattle). A. Eber.
57 Alkohol und Tuberkulose. G. Liebe.
58 *Ueber Anwendung von Inhalationen in der Phthiseotherapie. T. Brühl.
59 *Process for Obtaining Germ-free and Practically Unmodified Cow's Milk.—Verfahren zur Gewinnung einer von lebenden Tuberkelbazillen und anderen lebensfähigen Keimen freien, in ihren genuinen Eigenschaften im wesentlich unveränderten Kuhmilch. H. Much and P. H. Römer.
60 *Beziehungen zwischen der Tuberkulose und Gravidität, Geburt und Puerperium. W. Weinberg (Stuttgart).
61 Ueber 25 mit Marmorck's Serum behandelten Fälle von Tuberkulose. S. Röver.
62 Sympathikus-Affektionen bei Lungen-Tuberkulose (Hemihidrosis capitis). P. Köhler.
63 Eine seltene Aetiologie der Lungen-Tuberkulose. F. Köhler.

47. **Diazo Reaction in Tuberculosis.**—Junker remarks that the results of the diazo test are too inconstant for it to be of much value in early diagnosis. When the findings are constant the physical signs are generally unmistakable.

48. **Resolution in Pneumonia.**—Schläpfer's researches have demonstrated that the resolution and absorption of pneumonic processes and their relics are governed by the tension of the oxygen in the dead tissues. As this is in turn regulated by the condition of the vessels, the final outcome of the process depends on the extent to which the vessels have been injured by the disease. These facts suggest the usefulness of oxygen as a therapeutic measure and of drugs to act on the heart and vessels. The tubercle bacillus finds a favorable soil in the relics of pneumonic processes, and it has further an additionally injurious action on the blood vessels. The benefit of iodin preparations in tuberculous processes may be due to the special action of iodin on the blood vessels. Passive congestion according to Bier may also owe its efficacy to its activation of the blood, including livelier oxidation. It is possible, Schläpfer thinks, that the Bier method might be applied successfully to the internal organs. Tuberculous pneumonia

seems to indicate such treatment, and here, as also in croupous pneumonia, more active treatment seems to promise better results than the hitherto more expectant measures.

52. **Genital Tuberculosis.**—This article fills 100 pages and is the concluding portion of a monograph on tuberculosis of the seminal vesicles. The practical conclusions for the clinician are that a tuberculous process in the genital organs, and especially in the seminal vesicles—contrary to the experience with the more common tuberculous processes in the lungs, intestines, bones and glands—very frequently runs a latent course, and yet is a constant source of danger for the bearer. In all cases of tuberculosis or suspicion of the disease the entire genital apparatus should be investigated, not omitting the seminal vesicles. As the genital apparatus may become infected from the urinary system, the urine should be examined occasionally for tubercle bacilli. Also every discharge from the urethra, even when there is nothing to suggest tuberculosis, should be examined now and then for tubercle bacilli. The tuberculous process displays a tendency to spread along the natural passages, either up or down, and to induce a total affection of the apparatus involved.

53. **Rise of Temperature from Suggestion in the Tuberculous.**—Lorenz relates his experiences with a number of tuberculous patients who were given sham injections of tuberculin. His tables show an almost regular increase in temperature after a sham injection in 44 out of 200 persons tested. The excitement and the suggestion send the temperature up, although none of the supposed tuberculin was really injected. His experience suggests that it might be wise to test the influence of suggestion in this way before really injecting the tuberculin later. A rise of half a centigrade degree can be accepted as a positive reaction to the tuberculin. It should be computed from the temperature noted after the sham injection, allowing for the rise due to the effects of suggestion. The sham injections were liable not only to send up the temperature, but also to affect the general health. It was noticed sometimes that those patients who had the most pronounced rise of temperature after a series of sham injections failed to show any rise when a genuine injection was given. Another fact noticed was that the suggestive reaction was generally more pronounced when the organism was depressed from any cause, a slight cold or inflammatory process in a tooth or the like.

55. **Spread of Tuberculosis by Way of the Lymph.**—Haentjens has long proclaimed that tuberculosis is primarily an affection of the connective tissue and that it spreads by way of the lymphatic system. He regards this conception as very important, for if the danger for the organism from tuberculosis lies in the connective tissue and its juices, it is here that the battle against the tuberculosis virus must be waged. Proceeding on this assumption, he has been producing a prepared curative serum by inoculating animals with specific tuberculosis virus obtained from the blood-forming tissues and bone marrow, thymus juice, spleen extract and lymph. His serum displays both preventive and curative properties. He is preparing a detailed report for publication later.

56. **Transmission of Human Tuberculosis to Cattle.**—In Eber's experiments tuberculous products from the mesenteric glands of children injected into cattle caused virulent tuberculous processes in many instances, although not constantly.

58. **Inhalation Treatment of Tuberculosis.**—Brühl's study of this subject concludes with the statement that it is impossible to exert a direct therapeutic influence on pulmonary processes by means of inhalations. They do no good and are liable to affect the diseased lung injuriously. On the other hand, applied judiciously and at the proper time, they may be very beneficial in treatment of the upper air passages and in catarrh of the large bronchi.

59. **Process for Obtaining Practically Unmodified Cow's Milk Free from Living Germs.**—This communication issues from von Behring's institute at Marburg. It describes the process by which cow's milk is said to be absolutely freed from living germs without altering its taste or modifying its properties. Hydrogen dioxid is added to the milk at once, and after a few hours a ferment is added which destroys the hydrogen dioxid. The milk is rendered absolutely sterile by the dioxid, while neither the dioxid nor the ferment alter its properties in any way. The hydrogen dioxid is placed in the sterile empty milk can and the milk is milked into it. The proportion is 1 to 1,000. The milk is then set aside for from six to eight hours and is then warmed to 52 C. for an hour, after which the ferment is added in the proportion of 0.5 or 1 gm. to the liter. The ferment used is derived from beef blood, with the hemoglobin removed, producing a powerful catalytic ferment, which has a special destructive action on hydrogen dioxid. It was first described by Senter in the *Zeit. f. physik. Chemie.*, vol. 44, who then called attention to its specific action on hydrogen dioxid. He gave it the name of "hämase." It is a yellowish fluid containing 1 or 2 per thousand albumin, which is, of course, a homologous protein with the albumin of cow's milk. The destruction of the hydrogen dioxid in the milk is facilitated by frequent shaking of the vessel. Two hours suffice as a rule. The milk is then ready for use, and when protected from the light keeps fresh for days. The name of "perhydrase milk" has been given to milk thus prepared. The taste is identical with that of pure fresh milk. No germs can be cultivated from it even after twenty-one days. Inoculation of guinea-pigs and mice always resulted negatively even after enormous amounts of tubercle bacilli had been added to the milk with the hydrogen dioxid. Defibrinated beef blood might be used, it is stated, instead of the prepared ferment. The proportion should be 1 c.c. of the defibrinated blood to 1 liter of 1 to 1,000 hydrogen dioxid milk. The warming of the milk might also be dispensed with. The same process may also be found useful for disinfection of drinking water. Experiments in this line are now under way.

60. **Tuberculosis in Relation to Child-bearing.**—Weinberg thinks that the influence of pregnancy on tuberculosis has been exaggerated. He presents statistics to show that the death rate in the year following childbirth is no higher among the tuberculous than among other women. The pregnancy is frequently interrupted by spontaneous abortion or premature delivery. Weakly and tuberculous young women should be advised not to marry. The course of tuberculosis in a pregnancy is not invariably unfavorable, and the disease does not develop with any striking frequency during a pregnancy. Hemoptysis is not especially frequent during the puerperium.

Berliner klinische Wochenschrift.

64 (XLIII, No. 11.) Untersuchungen ueber die "Autotoxine (Conradi) und ihre Bedeutung als Ursache der Wachstumshemmung in Bakterienkulturen (autotoxin inhibition of growth of bacteria). Manteufel.
65 *Zur Kenntnis der Hernia uteri inguinalis. H. Hilgenreiner.
66 *Zur Kenntnis der Virulenz der Tuberkelbacillen. A. Marmorek.
67 *Physical Measures in Treating Acute Articular Rheumatism.—Die Anwendung der physikalischen Heilmethoden in der Therapie des acuten Gelenkrheumatismus. A. Laqueur.
68 (No. 12.) *Einige kritische Bemerkungen zur Alexander-Adams' schen Operation, insbesondere ueber ihr Verhältnis zu den Leistenbrüchen (relation to inguinal hernia). G. Schlekele.
69 Ueber Vorkommen und Aetiologie einseitiger Trommelschläge) finger (clubbed finger). M. Bernhardt.
70 Temperatur-Messung in electrischen Licht-Bädern (light baths). Thilch.
71 Ueber eine Verbesserung des Mett'schen Verfahrens zur Bestimmung der verdauenden Kraft von Flüssigkeiten (improved technic for Mett's test of digesting power of fluids). H. Meier.
72 Die quaternären Alkaloid-Basen in der Therapie. A. Schutze.
73 Ueber das Winterklima und einige hygienische Einrichtungen Aegyptens. M. Kirschner. (Concluded.)
74 Ueber neue Inhalations-Methoden und neue Inhalations-Apparate. T. Heryng (Warsaw). (Concluded.)
75 Die Prophylaxe der eitrigen Peritonitis. B. Bosse.

65. **Inguinal Hernia of the Uterus.**—Hilgenreiner reports a case in detail and has collected 39 similar ones in the literature. He gives the details of the last series of 15 cases. In the majority the defect was congenital, and was accompanied by other anomalies. In 4 instances the patients were men and in another a male hermaphrodite. In 8 cases the uterus was pregnant. In the case personally observed the patient suffered from melancholia which subsided completely after the operation. The uterus and right adnexa with some loops of intestines were found in the hernia. They were adherent and, on account of shock, the operation was done in two stages. The psychosis developed during the interval of about nineteen months.

66. **Improved Technic of Experimental Inoculation of Tubercle Bacilli.**—Marmorek states that young cultures are more virulent than those two or three months old. He has also found a difference in the results of inoculation when the bacilli were injected in a fine emulsion or in comparatively large drops. It is also difficult to measure the exact amount injected. In consideration of this difficulty of reproducing always identical conditions in his tests he turned his attention to making the animals more susceptible to the inoculations. He now announces that he has succeeded in this task. He has accomplished this with quinin, which has a paralyzing effect on phagocytosis and thus allows the bacilli to develop unhindered. He injected the bacilli in a 2 per cent. solution of quinin in physiologic salt solution, using white mice for the experiments. By this means the susceptibility of the mice was very much enhanced and the test became much more delicate and reliable.

67. **Physical Measures in Treatment of Acute Articular Rheumatism.**—Laqueur's experience effectually demonstrates that measures to induce artificial hyperemia are valuable adjuvants to the salicylates in treatment of acute articular rheumatism. They can be applied in the form of superheated air or with passive congestion with a constricting band.

68. **Alexander-Adams Operation and Hernia.**—Schickele advises strengthening the anterior wall of the inguinal canal in performing an Alexander-Adams operation. This obviates a tendency to hernia later. The Alexander-Adams operation has been performed in 138 cases at the Strasburg clinic since 1901, and the results are regarded as highly satisfactory. In one instance an old inguinal hernia rendered it difficult to find the round ligament. When found it was sutured between the pillars of the canal, thus preventing any further tendency to hernia.

Centralblatt f. Chirurgie, Leipsic.

Last indexed page 1568.

76 (XXXIII, No. 15.) Die Intermediäroperation bei akuter Appendicitis. W. Hagen.
77 Injury of the Greater Process of the Calcaneum.—Zur Kenntnis der traumatischen Fussleiden. H. Ebbinghaus.
78 (No. 16.) *Collective Review of Roentgen Treatment of Surgical and Cutaneous Affections Since March, 1905. Trapp.
79 (No. 18.) *Zur Stauungs-Hyperämie bei akuten Entzündungen (congestive hyperemia in inflammations). E. Lexer.
80 First Dressing on Battle Field.—Der erste Verband auf den Schlachtfelde. Herhold.
81 Zur Technik der Rückenmarksanalgesie (spinal anesthesia). M. Hirsch.

78. **Results of Roentgen Treatment in General During Last Year.**—Trapp summarizes his review in the statement that the last year has materially enlarged and deepened our theoretical knowledge of the mode of action of the Roentgen rays. They have assumed an important place in the treatment of leukemia, of inoperable malignant tumors and of various cutaneous affections scarcely amenable to other measures. The rays have also attained a place in the treatment of goiter and of enlargement of the prostate.

79. **Artificial Hyperemia in Treatment of Acute Inflammations.**—Lexer calls attention to Bier's recent remark that streptococci, for some reason, are rarely encountered in his clinic. They are seldom found as the causal agents of acute inflammations at Bonn. This fact is contrary to the experiences elsewhere, especially at Lexer's clinic at Berlin, where streptococci are the usual germs found in acute inflammations. He suggests that possibly the fine results obtained by Bier with artificial hyperemia and passive congestion may be due to the absence of streptococci. In any event he urges those applying the new technic to investigate the bacteriology of the lesions as this is important for a better knowledge of its effects.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed page 1569.

82 (XXX, No. 15.) Was Rapid Delivery Indicated in Bossi's Cases? War in den von Bossi mitgeteilten Fällen (No. 10) eine Schnellentbindung überhaupt notwendig? A. Dührssen.
83 Fall von paterner Leukämie als Ursache des Fruchttodes (as cause of death of fetus). Id
84 Modification of Infant's Skull by position in which it Habitually Lies. Zur Entstehung von Brachy- und Dolichocephalie durch willkürliche Beeinflussung des kindlichen Schädels K. Ehlgeser
85 Ein Serie missbildeter Knaben von einem Elternpaar (deformed boys in a family). A. Sippel.
86 *Ein neues Vaginal-Spekulum. M. Seyffert (Dessau).
87 (No. 16.) Zur Ventrifixation des Uterus. H. Sutter.
88 *Zur Aetiologie und Therapie des Graviditäts-Erbrechens (vomiting). A. Mueller.
89 *Age at First Menstruation in Sweden.—Die Zeit der Menarche in Schweden. E. Essen-Möller.
90 (No. 17.) Zur Therapie des durch Myoma uteri bedingten Geburts-Hindernisses (obstructing birth). Esch.
91 Vorschlag zur Operativen Sterilisierung des Weibes. G. Friedemann.
92 *Zur Prophylaxe der "Katheter-Cystitis." W. P. Richter.
93 Zweimaliges Vorkommen eines Scheidengewölberisses intra partum bei derselben Person (twice lacerated vaginal vault). J. Saks.

86. **Vaginal Speculum.**—The advantages claimed for this speculum are that as it opens the outer end enlarges too, as well as the tip end. The lumen of the vagina can thus be enlarged evenly throughout its entire length.

88. **Etiology and Treatment of Vomiting of Pregnancy.**—Mueller has been declaring for some time that the cause of the vomiting of pregnancy must be sought in some injury of the sympathetic nerve. The vomiting is a reflex neurosis of this nerve from traction or compression of some of its fibers which have been fastened down by relics of some old inflammation. They are thus unable to yield before the enlarging uterus or the congestion of the parts. The site of this abnormal anchoring of the nerve varies in individual cases. He has sometimes found it in the neighborhood of the solar ganglion, with the posterior wall of the uterus adherent near the promontory on the left. After detaching the adhesions at this point the uncontrollable vomiting has frequently ceased in his experience. Sometimes the benefit derived was only transient, but improvement was again realized by breaking up the adhesions anew. Another point whence the reflex vomiting may originate is the region of the internal os. Inflammation around the back of the uterus, with pathologic anteflexion or immovable retroflexion, especially when combined with induration of the vaginal portion of the cervix, are liable to induce the tendency to vomiting. An exceptionally rigid cervix and very solid attachment of the placenta have been observed in some cases. The irritation must have proceeded in these cases from the cervical ganglia, as treatment directed to the environment of the uterus proved ineffectual. The irritation may proceed in rare cases from adhesion of the omentum. Treatment of the reflex hyperemesis must include the release of adhesions or reduction of the tension in parts hardened by chronic inflammation. Massage, stretching the ligaments, raising or lowering the uterus, tamponing the vagina or cervix or the colpeurynter are among the mechanical measures indicated, while rinsing with hot water, enemas, compresses, sitz baths, and absorbent measures in general should be applied as required, with possibly thiosinamin to aid in loosening inflammatory indurations. These measures must be applied cautiously so as not to induce abortion. Hysteria, neurasthenin and autointoxication from the intestines or liver may be predisposing causes. Vomiting occurring during pregnancy is not always the result of the pregnancy. Autopsy revealed cancerous stricture of the small intestine in one case in his experience. Intestinal intoxication is probably the most frequent co-operating factor.

89. **Age at First Menstruation in Sweden.**—To complete the statistics gathered from various countries, Essen-Möller gives the particulars learned from 5,000 women of various social classes in Sweden. The first menses appeared at the age of 10 in .08 per cent.; at 11 in .74 per cent.; at 12 in 4.44 per cent.; at 13 in 9.3 per cent.; at 14 in 21.1 per cent.; at 15 in 26.38 per cent.; at 16 in 16.6 per cent.; at 17 in 9.98 per cent.; at 18 in 6.48 per cent.; at 19 in 2.8 per cent.; at 20 in 1.68 per cent.; at 21 in .26 per cent.; at 22 in .1 per cent., and at 23 in .06 per cent.

92. **Prevention of Catheter Cystitis.**—Richter uses a catheter not more than 5 mm. in diameter, with small openings with rounded edges. A protecting disc which prevents its entering too far into the bladder is mounted on the catheter 5.75 cm. from the tip. The catheter fits on a metal tube which has an extension at right angles to allow influx of the rinsing fluid

when the stopcock at the junction is turned. It prevents injury of the bladder walls from the catheter while it protects against soiling the bed linen.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

94 (XXXII, No. 16.) *Versuche zur Gewinnung und Wert-Bestimmung eines Meningococcen-Serums. W. Kolle and A. Wassermann.
95 Rezidivierende Oculomotorius-Lähmung als Komplikation bei Typhus abdominalis (post-typhoid paralysis). G. Jochmann.
96. *Grundzüge der Behandlung nervöser Sprachstörungen (disturbances in speech). H. Gutzmann.
97 *Zur Frage der Roentgen-Behandlung bei Leukaemie. H. Flesch (Budapest).
98 Lues congenita im Bilde lymphatischer Leukaemie bei einem Neugeborenen (lues simulating leukemia in infant). C. Stuhl.
99 Participation of Internal Ear in Concussions of the Head.—Beteiligung des inneren Ohres nach Kopferschütterungen. Rhese.
100 *Pneumokokken- oder Staunungs- Gangrän? Robbers.
101 (No. 17.) Ueber Expektorantien. H. Eichhorst (Zurich). Clinical lecture.
102 *Der therapeutische Pneumothorax. L. Brauer (Marburg).
103 Behandlung der Blinddarmerkrankungen (affections of cecum). L. Krehl.
104 Ueber das psychische Moment bei der Neurasthenie. R. Wollenberg.
105 Ueber traumatische reflektorische Pupillenstarre (Immovable pupils). T. Axenfeld.
106 *Parallel Tests of Gastric Juice and of Blood in Chlorosis.—Parallel laufende Magensaft- und Blutuntersuchungen bei der Chlorose. J. Arneth.
107 *Ueber seltenere Indikationen zur Unterbrechung der Schwangerschaft infolge innerer Krankheiten (interruption of pregnancy in constitutional diseases). M. Hofmeier.
108 Tuberculose und Gravidität. A. Rosthorn and A. Fraenkel.
109 Epitheliома contagiosum (in pigeons). W. Loewenthal.
110 *Action of Iodin on Experimental Necrosis of Arteries.—Wirkung des Iods auf die durch Adrenalin erzeugte Arterionekrose. A. v. Koranyi.
111 Zur Pathologie des periartikulären Fettes am Knie (fat around knee). D. G. Zesas.
112 Mercury Lamps.—Wirkung von Quecksilberdampflampen. T. Schüler.
113 Bicycle and Automobile for Physicians.—Fahrrad und Automobil als Fahrzeuge des praktischen Arztes. Weltzel.
114 *Mental Strain for Children.—Die geistige Ueberbürdung der Kinder. A. Czerny.

94. **Antimeningococcus Serum.**—This communication issues from the Institute for Infectious Diseases connected with the Berlin University. It completes the reports of previous research on epidemic cerebrospinal meningitis with the announcement of the production of a curative serum. The serum is obtained from horses inoculated with twenty-four hour agar cultures of meningococci from the cerebrospinal fluid of typical cases. Either the living cultures or extracts of the meningococci are injected into a vein or subcutaneously. The specific action of the serum thus obtained was tested in various ways. The findings, especially by the new hemolytic test, were constant and conclusive. Kolle and Wassermann do not hesitate to advise its use in treatment and also in prophylaxis. They recommend a single subcutaneous injection of 10 c.c. as early in the disease as possible. This proportional dose has proved entirely harmless in experiments on animals.

96. **Principles of Treatment of Disturbances in Speech.**—Among the measures advocated by Gutzmann is reading aloud interesting stories to the child, reading a sentence at a time, quietly and slowly, and making the child repeat the sentence after the reader in the same way. This will almost inevitably cure incipient cases. In the long established ones, the frequent underlying neuropathy requires attention, as also the diet and local lesions.

97. **Roentgen Treatment of Leukemia.**—Flesch does not believe that Roentgen treatment of leukemia is very promising. More than a transient improvement can not be anticipated, and even this is rare in the lymphoid variety. He gives the particulars of 3 cases thus treated.

100. **Pneumococcus or Passive-Congestion Gangrene?**—A young man drove a splinter into his thumb and pulled it out with his teeth. The arm became very painful and swollen, but several punctures failed to reveal pus and a Bier constricting band was applied and left on all night. The next morning the fingers were bluish and cold and gangrene rapidly developed, requiring amputation. Pneumococci were found in the lesion and the gangrene may have been their work, or it may have been the result of the artificially induced congestion superposed on the already intensely swollen condition of the parts. In any event, the case warns that when the soft parts are already very much swollen it is wiser to relieve the tension by an incision to regulate the circulation before applying the constricting band.

102. **Therapeutic Pneumothorax.**—Brauer relates that he has applied Murphy's method of artificially induced pneumothorax in treatment of a girl of 18 with progressive tuberculosis of one lung, the other sound. After each injection of nitrogen the fever abruptly subsided for a long time, an effect not attainable by any other method of treatment known to date. The collapse of the lung caused no disturbances. He has devised an apparatus for injection of the gas. The nitrogen becomes absorbed in time, and it may be found advisable to substitute some other indifferent substance. Experiments in this line are now in progress. The collapsed lung has infectious matter squeezed out of it by the pressure, and the passive congestion aids in its healing. His patient is much improved.

106. **Gastric Secretion in Chlorosis.**—In 23 cases Arneth found hyperacidity in 15 of the patients. In 8 the improvement in the blood findings under treatment was paralleled by the restoration to normal of the gastric acidity. In the severer cases of chlorosis the findings always indicated extreme hyperacidity. He has never encountered subnormal or deficient acidity in any case of chlorosis. The treatment which proved successful was rest in bed at first, sometimes for several weeks in the severer cases, with iron or arsenic subcutaneously. Iron plus arsenic internally was given in the cases in which the number of red corpuscles was very low. If the spleen was enlarged he accepted this as an indication for quinin. His formula for an effective and unirritating iron pill is 7.5 gm. reduced iron with glycerin and gelatin enough to make 90 pills, as soft as possible. He orders one or two pills at first and then three after each meal.

107. **Interruption of Pregnancy in Constitutional Diseases.**—Hofmeier relates his experience in 3 cases of chronic nephritis in pregnant women. The threatening symptoms continued notwithstanding that the fetus had died, but rapid and pronounced improvement followed artificial termination of the pregnancy. In one case the nephritis was very severe and some symptoms are still observed. One woman was delivered by Dührssen's technic of anterior hysterotomy. The condition was critical in all the patients when first seen. These cases teach that it is unwise to allow conditions to reach such a serious pass before interfering. In a case of severe cardiac defect in a primipara of 32 with contracted pelvis, uterus bicornis and transverse presentation, at the tenth month of pregnancy, he safely delivered the patient of a living child by Cesarean section according to Porro. He removed the uterus to prevent future pregnancies and also to simplify the puerperium as much as possible. The results were highly satisfactory, as the childbirth had not taxed the heart unduly. The patient now feels perfectly well except for palpitation and dyspnea when she works very hard. Pregnancy in a diabetic woman is extremely rare for various reasons. In a case recently observed, a woman in the seventh month of pregnancy, had been under treatment for confirmed diabetes; the first symptoms were noted not long after the commencement of the pregnancy. She was artificially delivered of a recently dead fetus. The amniotic fluid contained 0.165 per cent. grape sugar (dextrose). The patient's condition grew progressively worse and she succumbed the fourth day in coma. Hofmeier does not ascribe this fatal termination to the delivery, but to the fact that it was postponed until the disease had gained such headway. If she had been delivered when symptoms were first observed the prospects would have been much better. There is little chance of a viable child from a diabetic mother. In respect to myelitis, a possible connection with pregnancy is generally denied, but in a case in his experience the symptoms improved remarkably after the patient with ascending myelitis had been artificially delivered nearly at term. She succumbed four months later to the effects of a gangrenous decubitus. He discusses in conclusion the psychoses of pregnant women, with a case from his own experience in which melancholia and insomnia accompanied a pregnancy in a woman predisposed to mental affections. In consultation with the physicians who had attended the patient in her three previous pregnancies he induced arti-

tieial delivery. The patient recovered her mental balance and passed through other pregnancies later without psychic depression.

110. **Action of Iodin in Experimental Arterial Affections.**—Twenty-three rabbits were treated with adrenalin and 11 with subcutaneous administration of iodin at the same time. The results showed that the necrosis of the arteries which inevitably followed the injections of adrenalin could be prevented by simultaneous injection of iodin.

114. **Mental Strain for Children.**—Czerny thinks that people exaggerate the importance of "school strain." They ascribe to the school what is really the result of the home environment. The mental strain is intense during the years before the child enters the school if it is much with adults. It is constantly asking questions and learns something from each answer, but no one thinks of measuring or shortening the hours of this activity of the child's brain. Adults sometimes answer a child's questions all day long and merely rejoice in its inquiring little mind. In this way the child soon grows out of its childlike naiveté, and signs of neuropathy develop which are falsely ascribed to "school strain" after the child enters school. The most effectual remedy is to allow children to grow up in the companionship of children, and to reduce their association with adults to the minimum. When children play together the demand for toys and change of amusements is much less than for one child alone, and there is also the possibility of many harmless games and of cultivation of the will. Children playing together have red cheeks while the child associating with adults does not get the same excreise and is pale. This pallor is a sign of mental strain. The excitement that reddens a child's cheeks is harmless. A child with a private tutor has to pay strieter attention in one hour than during the four hours of a public school, and he has more unoccupied time. This aids in developing a neuropathic tendency. The meals, the bath, etc., become important events. Symptoms of hysteria frequently develop in such children in connection with some bodily function.

Münchener medizinische Wochenschrift.

115 (LIII, No. 12.) *Die Milch-Leukozyten Probe (leucocyte test for milk). R. Trommsdorff.
116 *Mittellungen über Spirochæta pallida (Schaudinn) und Cytorrhyctes (Siegel). J. Schütz.
117 Liquor Drinking Among School Children.—Ueber Verbreitung und Wirkung des Alkoholgenusses bei Volks- und Mittelschillern. R. Hecker.
118 Prophylaxe und Therapie der Appendizitis. H. Welsch.
119 Zur Kasuistik und Therapie der Darm-Rupturen durch stumpfe Gewalt (rupture of intestines by contusion). Fed erschmidt. Five cases.
120 Ueber Prurigo hæmorrhagica. H. Vörner.
121 *Suicide with Veronal. Selbstmord durch Veronal. F. Ehrlich.
122 Improved Child's Bed.—Ein neues Kinderspitalbett. Hutzler (Munich).

115. **The Leucocyte Test of Milk.**—Trommsdorf has confirmed Bergey's statements in regard to the diagnostic value of the presence of leucocytes in milk. Whenever leucocytes were found in the milk in large numbers innumerable streptococci were also present.

116. **Spirochetes and Cytorrhyctes.**—Schülz has been making a comparative study of Schaudinn's *Treponema pallidum* and Siegel's *Cytorrhyctes luis*. He call attention to the way in which both are always found together and close to or inside the red corpuscles. Specimens in which there is only a single red corpuscle in the field are especially significant in this respect. He thinks it is possible that they represent merely different phases in the life cycle of a single microorganism.

121. **Suicide with Veronal.**—Ehrlich relates 2 cases of suicide with veronal. Both patients were men of about 57 and generally healthy, although one had suffered from circular melancholia for 20 years. He took 15 gm. of veronal at one time. The other man took 11 gm. Neither recovered consciousness and both died at the twentieth hour. A greenish-yellow tint of the corpse was striking in the first case. Ehrlich comments on the way in which the report in the papers of a suicide with lysol was followed by an epidemic of suicides with this drug. Lysol has since been withdrawn from open sale and can be obtained now only on a physician's prescription. "This way of exploiting new drugs is utterly opposed to common sense," he says. "When a manufacturing chemist puts a new drug on the market he presents testimonials to prove that it is harmless and it is freely offered for sale until cases of severe intoxication and even death gradually accumulate and establish beyond question the fact that the drug is toxic and dangerous. Then it is withdrawn from open sale and regulations are passed restricting its use to physician's prescribing. Thus it fared with antipyrin, sodium salicylate and other drugs. We who are practicing physicians know that the testimonials sent out with the new drugs are often doctored. In the interests of our fellowmen, to protect them against injury to health and death, we physicians must demand that this way of doing things should be reversed. The sale of all the new drugs should be restricted and they should be dispensed only on physicians' prescriptions. Only when a general verdict of physicians as to their non-toxic and harmless properties has been attained should they be allowed to be sold at retail without restrictions. In particular," he adds in conclusion, "veronal should be withdrawn at once from the general market, for veronal in large doses is an absolutely certain fatal poison." In one of the cases reported the patient had bought 30 gm. of veronal, obtaining 15 gm. at one drug store, 10 gm. at another and 5 gm. at a third. The symptoms were cyanosis, unconsciousness, superficial respiration, with occasional complete arrest of the respiration for a few minutes, and retching from time to time. The tip of the nose and the hands and feet were cold, the pupils contracted, the pulse about 90, sometimes imperceptible. The clinical picture simulated that of morphin poisoning. The stomach was rinsed at once and atropin was injected (0.0005 gm. every half-hour, six times). Chemical analysis showed 0.36 gm. veronal in 100 c.c. of urine.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Operative Treatment of Prolapse and Retroversion of the Uterus. By J. Inglis Parsons, M.D., M.R.C.P., M.R.C.S., Physician to the Chelsea Hospital for Women, Late Surgeon Royal Maternity Charity, Fellow of Royal Medical and Chirurgical Society, Obstetrical Society of London, British Gynecological Society, Hon. Fellow American Electro-Therapeutical Society, etc. Cloth. Pp. 90. Price 3s. 6d. net. London: John Bale, Sons & Danielsson, Ltd., 1906.

Operative Otology. Surgical Pathology and Treatment of Diseases of the Ear. By C. J. Blake, M.D., Professor of Otology in Harvard University, and H. O. Reik, M.D., Associate in Ophthalmology and Otology, Johns Hopkins University. Cloth. Pp. 359. Price, $3.00. New York: D. Appleton & Company, 1906.

Human Sexuality, a Medico-Literary Treatise on the Laws, Anomalies, and Relations of Sex, with Especial Reference to Contrary Sexual Desire. By J. R. Parke, Sc.B., Ph.G., M.D. (Late Acting Assistant Surgeon, U. S. Army). Cloth. Pp. 476. Philadelphia: Professional Publishing Company, 1906.

Proceedings of the American Pharmaceutical Association at the Fifty-third Annual Meeting, held at Atlantic City, N. J., September, 1905. Also the Constitution, By-Laws and Roll of Members. Cloth. Pp. 957. Baltimore: Published by the American Pharmaceutical Association, 1906.

Health-Care of the Baby. A Hand-book for Mothers and Nurses. By L. Fischer, M.D., Author of "Infant Feeding in Health and Disease"; "A Text-book on Diseases of Infancy and Childhood," etc. Cloth. Pp. 144. Price, 75c net. New York: Funk & Wagnalls Company, 1906.

Proceedings of the American Medico-Psychological Association at the Sixty-First Annual Meeting, held in San Antonio, Texas, April 18-21, 1905. Paper. Pp. 384. Published by American Medico-Psychological Association, 1905.

Nomenclature Anatomique En 4 Langues. [Latin (nomenclature de Bâle), French, English, Esperanto.] By Dr. Paul Rodet. Paper. Pp. 76. Price, 1 franc 50 (30 cents). Paris: Masson Et Cie, Editeurs, 1906.

I Principi Fondamentali della Antropologia Criminale Guida Per I Giudizi Medico-Forensi Nelle Questioni Di Imputabilità. By G. Antonini. Cloth. Pp. 64. Price, L. 2. Milan, Italy: Ulrico Hoepli, 1906.

Prontuario di Posologia Dei Rimedi Più Usati Nella Terapie Infantile. By A. Conelli. Cloth. Pp. 64. Price, L. 2. Milan, Italy: Ulrico Hoepli, 1906.

Pneumonite Crupale con speciale Riguardo alla sua cura. By A. Serafini. Cloth. Pp. 64. Price, L. 2.50. Milan, Italy: Ulrico Hoepli 1906.

The Phantom of the Poles. By William Reed. Cloth. Pp. 283. Price, $1.50. New York: Walter S. Rockey Company, 1906.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI CHICAGO, ILLINOIS, JUNE 30, 1906. No. 26.

Address

THE LEGAL RESPONSIBILITY OF THE PHYSICIAN FOR THE UNBORN CHILD.

CHAIRMAN'S ADDRESS IN THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN, AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, 1906.

C. S BACON, M.D.
CHICAGO.

INTRODUCTORY.

Since the last session of the Association in Portland, our Section has lost by death two of its Ex-chairmen, Drs. Dudley and Dunning, both of whom were members of the Executive Committee of the Section.

Dr. Augustus Palmer Dudley was born at Phillipsburg, Me., July 4, 1853, and died in Liverpool, England, July, 15, 1905, of tuberculosis, at the age of 53. After completing a high school course he served an apprenticeship in an iron and steel manufactory, where he became a skilled mechanic. Then he began the study of medicine in the office of Dr. Seth Gordon and graduated at the Dartmouth Medical School, in 1877. After practicing four years in Portland, Me., he took the course of an interne in the Woman's Hospital, of New York. After a short service as assistant surgeon in the Woman's Hospital, in San Francisco, he returned to New York in 1884; this city was his home until his death. During this period he was Professor of Gynecology in the Postgraduate Medical School and in the Dartmouth Medical School and was connected with several hospitals.

Dr. Dudley was a skillful operator and a successful teacher. He also made many and important original contributions to the literature of his specialty, the most important of which were his papers on "Conservative Treatment of the Uterine Appendages." He was a Fellow of the American Gynecological Society, the British Gynecological Society and a member of the state and local societies, as well as the American Medical Association. He was also a very active member of the International Congress of Obstetrics and Gynecology and did much for it as the American secretary. Dr. Dudley left a wife and two daughters. He was not only a good physician and a good teacher, but he was also a good citizen and a good fellow, kind to all, loved by all who knew him, a most devoted husband and father. His social qualities were characteristic.

Dr. Lehmann H. Dunning died at his home in Indianapolis, Ind., from heart disease, Jan. 4, 1906, at the age of 55. He graduated at Rush Medical College, Chicago, in 1872. For a number of years he had been Professor of Diseases of Women in the Medical College of Indiana and surgeon in the Indianapolis City Hospital and gynecologist in the Deaconess Hospital. He was a member of the American Association of Obstetricians and Gynecologists, as well as of his county, state and national societies. His numerous contributions to the literature of his specialty were of a practical character. He was a careful, conservative and judicious man, whose influence in the community and in the profession was always for the best.

In the name of this Section I desire to express here the highest appreciation for the earnest and faithful work of these men who have been our worthy leaders, and the deepest and most sorrowful regret for their loss.

THE LEGAL RESPONSIBILITY OF THE PHYSICIAN FOR THE CHILD IN UTERO.

All physicians, as well as other biologists, must regard the child in the womb as much a human being while still in the womb as after its expulsion. Although dependent on its mother for nourishment and for protection from injury and cold, it is still a living being and as much an independent existence as, for example, an intestinal parasite which depends on its host for protection and nourishment. That it lacks some of the functions of the individual *ex utero*, for example, the respiratory does not disprove its independence or its human nature. The infant also lacks functions that are possessed by the adult. The self-conscience of the fetus is only in abeyance because not aroused. The embryo or fetus is then to the biologist a separate human individual and not a *pars viscerum* like the ovary or the appendix.

We must regard this human being as just as independent at the beginning of its intrauterine life as after it has reached a stage where it can live outside of the uterus. The old legal distinction between a fetus *animatus* and *inanimatus* has, of course, no biologic foundation, although the statutes of certain states give a kind of authority for the perpetuation of these terms which are now in reality meaningless. The preception by the mother of fetal movements does not prove or disprove the life of the child any more than would a lack of consciousness of movements of other parasites which exist in her body disprove their existence. Likewise, there is no biologic basis for the ancient legal distinction which gave different vital and human attributes on the fetus *formatus* and the fetus *informatus*.

LEGAL STATUS OF FETUS.

The legal status of the child *in utero* does not conform to its biologic status. All human beings *ex utero* are on the same plane and neither a physician or any one else has the right to take the life of one for the benefit of another or for any reason whatever, unless the state, through its judicial officers, declares the life of an individual forfeited because of his crimes and because its extinction is necessary for the welfare of the state. The unborn child has not the same legal protection. Under certain circumstances its life may be taken. The laws of most states and countries justify feticide when it is necessary to save the life of the mother. The provisions

of these laws are of great importance to the medical profession and should be well known. Every physician should understand his legal responsibilities, rights, and obligations in this connection. The religious and ethical questions involved will not be considered in this discussion or only incidentally.

Surgeons of all kinds are learning to appreciate more and more the importance of having a definite understanding or contract with the patients on whom they operate. If the patient is not in condition to give consent or is not old enough to decide, the contract should be made with the legal representatives of the patient. In case no verbal or written or implied contract is made the surgeon operates at his own risk. When a contract exists he is still liable if he does more or differently than arranged for. Of course under any circumstances he is responsible for his management of the case if it is not skillful or if he is negligent.

The risks of the obstetrician are perhaps still greater. Many of the recent malpractice suits occur in obstetrical cases. The laity are coming to believe that puerperal infection is preventable and that its occurrence is due to malpractice. Obstetrical operations are exposed to the same risks as surgical operations. But operations involving the destruction of life of the fetus introduce a question that is quite different from any that can come before the surgeon and involve an additional risk. It is to this special risk or responsibility of the obstetrician that I wish to call attention as the subjective side of the question.

There is another classification of intrauterine life that might seem more natural and reasonable than those already mentioned, namely, that based on the viability or non-viability of the child. Some may ask, is the destruction of a viable child, especially one near or at term, a more serious matter than that of an unformed embryo, or even than the destruction of a 24-weeks' fetus that can live out of the uterus at most only a few hours? On mature consideration such a question will probably be found to have no biologic basis. As to the juristic side of the question it appears that in most states in this country the law makes no distinction in the legal rights of children *in utero*.

LAWS OF VARIOUS COUNTRIES AND STATES.

We shall be much disappointed if we expect to find that the laws of the country or of any states form a body of well-digested and consistent and logical rules of action. Logical consistency is hardly a characteristic of any law. The law rather expresses the common opinion or judgment of the people, and this expression must conform to the conflicting variety of sentiments held by people of all stages of mental and moral development. If the law is ahead of the people or imposed on them by outside authority, it is apt to be executed indifferently or not at all, or it may raise opposition that leads to its annulment. In this country, as well as in England, whence our laws originally came, the laws are self-made and are generally an index of popular sentiment.

According to the ancient English common law, by which we mean the ancient precedents, the decisions or *dicta* of courts not founded on legislative enactment, the embryo or fetus before the term of quickening had no legal rights whatever. Up to the time of quickening no offense could be committed by an operation that led to the destruction or premature delivery of the fetus. If the woman gave consent, the bringing about of an abortion was not recognized as a punishable offense. Abortion produced without her consent was punishable as assault. The theory of the courts was that life, in contemplation of the law, begins when the child is able to stir in the womb and prior to this time the child does not exist as capable of being the object of criminal intent or action. Hence, when the mother gives her consent, the operation could only be considered as a wrong against something that does not legally exist.

This was the common law till shortly before the separation of the colonies from the mother country. This common law was the basis of the law of this country. In many states, this theory of the legal nonenity of the unquickened fetus was held by the courts to be the law and the early statutes of some states particularly or impliedly approved this theory. Now, however, this provision of the common law has been superseded by the statutes which have been passed by the several states. These statutes, in most of the states, make no distinction between the commission of an offense on the child before or after quickening, although some states still provide a more serious punishment when the act is committed after quickening.

It will not be possible for me to go into an examination of the statutes of the different states, and I must content myself with calling your attention to the practical abrogation of the common law, the substitution of statutary regulations as just outlined, which practically recognize certain rights of the fetus, although they do not place it in the same category with the individual *ex utero*.

I shall pass by a number of interesting questions which do not pertain strictly to the subject, for example, the responsibilities of the mother, and briefly refer to the general provisions that have a bearing on the legal status of the fetus as concerns the physician.

At common law, procurement of an abortion after quickening, with the mother's consent was forbidden, but was not a crime punishable with imprisonment. If, however, the mother died as the result of the abortion the one who performed the act was guilty of murder.

The statutes of the several states generally provide that any attempt to procure an abortion, either by the administration of drugs or by the employment of instruments, is punishable by imprisonment, unless the act is necessary to preserve the life of the mother. When the death of the mother results the crime becomes manslaughter and is punishable as such.

Before considering the question of most interest to us, namely, that of the justification of the act, a moment's attention should be given to a few side questions of importance. For example, how far is one responsible for advice to take medicine or to use means to produce an abortion. It is held that one is responsible for such advice if it is acted on, but not otherwise. The question also arises concerning the efficiency of the means employed. Here it is held that the intent governs. This ruling shows that the object of the law is not only or not so much to protect the fetus as to protect the life and health of the mother from the consequences of the attempts at abortion. This also explains, in part at least, the ruling that the viability of the fetus is not necessary to commission of the crime, although, no doubt, the vitality of the fetus at term, is a very important consideration in determining the justification of an obstetrical operation.

LEGAL JUSTIFIABILITY OF FETICIDE.

We now come to the most vital question of the legal justifiability of feticide. In some wording or other all statutes provide for exemption from punishment for

abortion in case it is necessary to preserve the life of the mother. This provision expressly implies that in the eyes of the law there is a difference in the value of human lives. It is the codification or the reflection of the popular belief or popular conscience that the mother's life is worth more than that of the child *in utero*. Whether this popular opinion or this expression of it in the statutes is morally justifiable or not, is not within the limits of my subject to discuss. We are simply concerned to learn definitely what the law provides. There seems to be no doubt of the far-reaching consequences of this provision concerning the necessity of preserving the life of the mother at the expense of her child. It is on this provision that the physician probably must rely for exemption in case of mutilating obstetrical operations made on the living child.

Just what is comprehended in the provision, "necessary to preserve the life of the mother," must be determined by the court in each case, and decisions have varied in some points. In some states the statutes require that the advice of two physicians be secured to determine the necessity of an abortion. Where such a rule holds it is, of course, necessary to show that the physician acts in good faith, in calling a consultant who is not in collusion with him to perform a criminal act. Where the rule does not hold, consultation is not necessary, but always desirable. It is always necessary to show that the physical condition of the mother requires the abortion. Fear of suicide or of remote results, developing from a possible nervous condition, does not justify the performance of the act. The practice of many physicians who make the probable injury to health an indication for the induction of abortion, is not justified by law and might lead to trouble in the event that such a case were brought before a strict constructionist court. It has sometimes been held that the burden of proving the necessity of the abortion falls on the physician and sometimes that the absence of necessity must be proven by the state. No doubt the circumstances in individual cases would have some bearing here, while in different states the practice varies.

So far, our attention has been addressed chiefly to the rights of the non-viable fetus and to the responsibilities incurred by the physician in its destruction. Neither the statutes nor the decisions of the courts in this country have fixed the status of the viable child *in utero*, except as it has been included with all intrauterine life in the provisions already discussed.

INDICATIONS FOR EMBRYOTOMY.

All obstetrical writers in discussing the indications for embryotomy of the living child have laid down certain rules based on their own conclusions concerning the justifiability of the practice. Nearly all admit that the operation should be done at times. A few, like Pinard, would do away with it entirely. In general, the operation is admitted in cases in which delivery is impossible without Cesarean section or some operation to enlarge the pelvic girdle, and when the latter procedure is refused by the mother. The question is variously discussed from the usual religious and social standpoints, but rarely, or never, is the legal standpoint presented. The individual views of each writer are given and they generally coincide with those of others, so that the two or three sentences devoted to the subject are practically the same in all text-books. I have been able to find nothing authoritative in English concerning the legal status of the operation. Sippel, studying the German criminal law, concludes that: "In practice, the destruction of the life of the child by the induction of abortion or by embryotomy in order to save that of the mother, is not a punishable offense, and modern criminal law practice agrees in this respect. In theory, however, jurisprudence has reached no conclusion as to whether this destruction of fetal life should be allowed or condemned, nor as to how this destruction should be legally construed." Both Kossmann and von Franqué call attention to the fact that in Germany a physician who destroys a living fetus may be in danger from an unfriendly court. In this country, there is little or no doubt that the destructive operation, if necessary to save the life of the mother, would always be justified by the courts.

POINT DECIDED BY MEDICOLEGAL SOCIETY OF FRANCE.

One important point has been discussed and decided by the medicolegal society of France. A physician is not compelled to make a destructive operation against his own judgment or conscience. In other words, if a physician advices a Cesarean secton or a symphyseotomy or pubiotomy and this operation is refused by the patient or her husband or guardian, he can not be compelled to substitute an embryotomy for the operation he proposes, even if he be the only physician in the place. Such a rule would undoubtedly be followed in this country, although I do not know that any case of the kind has ever been decided. It is inconceivable that a court would hold a physician responsible for the death of a woman because he refused to perform an embryotomy on her living child, and he certainly could not be convicted of civil malpractice in such a case. Of course, the physician has no right to leave his patient who has refused his advised conservative operation and he demands an embryotomy until some other physician has arrived, or until he is summarily dismissed from the case.

As to the legal justification of a destructive operation, probably the same can be said as was stated in regard to therapeutic abortion. In some states it might be necessary for the physician to prove that the operation was necessary to save the mother's life, while in most states the burden of proof would be on the state to prove that the operation was not necessary.

INDICATIONS FOR OPERATION.

It is not in my province to enumerate the various indications for the operation, any more than it was my plan to discuss the different pathologic states that required the induction of abortion. In general, it might be affirmed that the indications for destructive operations are becoming contracted and many pathologic states that previously were treated by embryotomy, would not now be accepted as indications.

CONCLUSION.

This review of the legal status of the child *in utero* has led probably to less results than were expected. I have been disappointed in finding less material than was expected. It shows, I believe, that the legal responsibilities of the physician are comparatively simple. No physician need be in doubt in any case. If he believes that the preservation of the life of the mother requires the sacrifice of the child he may operate without fear. It is always better, however, to fortify his opinions by consultation with a reputable colleague. The law does not recognize that the life of the child *in utero* is of equal value with that of the mother.

In deciding on his moral responsibilities, however, the

physician may have much greater difficulty. The statute law is frequently behind or at variance with the ethical law and the variance seems to be marked in this case. Many operations would be legally safe that would be undoubtedly wrong.

It is difficult to deny to the human fetus the innate right of every human being the equal right to life. On the protection of this moral law the child *in utero* must chiefly rely for its preservation. The moral responsibilities of the physician for the child *in utero* are greater than his legal responsibilities. It is hard to dispute Pinard when he holds that neither the father, the mother, the physician, nor any other person has the right of life and death over the fetus. The frequency and boldness with which that right is claimed by the father or by the relatives of the mother should meet with firm resistance. I see no ground on which the physician can stand when he decides to destroy the fetus, except a kind of implied authorization by the state, which agrees to uphold the right of the mother to self-preservation when her life is endangered by that of the fetus.

Original Articles

DENDRITIC KERATITIS OF MALARIAL ORIGIN.*

E. C. ELLETT, M.D.
MEMPHIS, TENN.

Among the less common diseases of the cornea is that known as dendritic keratitis, to apply the name which its appearance suggests, or mycotic keratitis, a name more in accord with its etiology. This disease appears, when fully developed, as a finely branched ulceration of the cornea, running a rather protracted course. In my personal observation it has almost always appeared as a complication of acute malaria, though the same picture has been occasionally seen in patients who had no malarial manifestations, and who had not suffered from malaria at any time sufficiently recent for it to have any possible bearing on the eye trouble.

The disease is not common. Even in malarial districts it is not one of the commoner eye diseases, and when compared with the large number of persons who have malaria, it is seen to be an unusual complication of that disease. I can only state the case thus vaguely, as I have no means of arriving at accurate statistics. The following remarks apply to its characteristics as seen by me:

It is decidedly more common in the late summer and fall, corresponding to the time of the greatest prevalence of malaria. It is rare to have an opportunity to see it prior to the ulcerative stage, though Kipp of Newark has described it as beginning as a series of small subepithelial lymphoid papules, which quickly break down just as phlyctenulæ may do. Judging from the size of the lesions when it is what might be called fully developed, these initial papules must be of almost microscopic size. The rapid coalescence of several lesions results in a fine shallow linear ulcer, with a tendency to branch, this giving the characteristic dendritic arrangement. The amount of infiltration of the surrounding tissue is variable. Often the lesion is merely an abrasion of the epithelium, this being especially true of recent lesions, but frequently it has a gray border or base rendering it more conspicuous. A proper conception of its extent only can be obtained by staining with fluorescin. We might even say that the characteristic arrangement of the ulcer is not suggested until made conspicuous by staining. When seen in the earlier stages, with the ulcer involving the epithelium only, and arrested by Bowman's membrane, the unstained cornea fails to show any more than a little roughness. Later, the infiltration of the substantia propria at least suggests the character and extent of the condition, but at all stages fluorescin definitely outlines the denuded area so clearly and so sharply as to present a picture which can hardly be confused with anything else.

Late in the course of the disease and possibly somewhat influenced by treatment, if energetic, the loss of the epithelium may become very considerable, as much as one-half of the cornea being denuded. I have never seen the lesions suppurate, and while a moderate degree of iritis may occur, it is never more than moderate, and hypopyon is never seen. The lesion is rarely or never multiple. No matter how extensive, it will be found that the ulceration is all a part of a single system or tree, though as healing progresses the bridging of the ulcer here and there may leave separate denuded areas. The history is always given of a preceding chill or chills. It is very rare in chronic forms of malaria and in those unaccompanied by chills. The course tends to be protracted when untreated. In spite of treatment some cases will last for weeks or even months, the corneal picture changing daily. One attack predisposes to others, but one attack is not necessarily followed by others. Still I have seen many patients in whom every attack of malaria "settles in the eye." From the superficial character of the lesions, serious damage to the cornea is not unusual. Nebulæ are usually left, and if central or nearly central, the opacity itself and the resultant irregular astigmatism frequently reduces the vision to from 20/40 to 20/100. That the changes of curvature are a more potent factor in this result than the opacity, is shown by the improvement of vision by cylindrical lenses. It is rare for both eyes to be attacked, even when the disease recurs.

The subjective symptoms are usually marked, the sensation of a foreign body being present, with some deeper aching pain. I have not noticed the supraorbital neuralgia at the beginning, of which Kipp speaks, but neuralgic pains in all the branches of the fifth are not rarely present during the course of the attack. Some patients suffer very little. The ball is injected and photophobia usually marked. It can not be said that there are any characteristic changes in the sensibility of the cornea. The tension is not altered.

It seems to me that this is not the disease described by Horner as herpes corneæ, but is the same, as Kipp suggests, as that described by Hansen Grut and Emmert under the name of dendritic keratitis or keratitis exulcerans dendritica mycotica, respectively. It is convenient to tell the patient he has "fever blisters on his eye," but from the observations which it has been possible to make on this disease in its early stages, and from watching its development and the formation of new buds and off-shoots from the original furrow, I am satisfied that the lesions are not vesicular, but are subepithelial lymphoid collections, resembling phlyctenules, but very much smaller. As far as my personal observation goes, I have only seen this corneal lesion in its typical form in one case where no malarial history was

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

given, and that case ran an unusually mild course. It may or may not be associated with labial herpes, and there is no possibility of confusing it with herpes zoster ophthalmicus. The blood examinations have, with the one exception mentioned, confirmed the existence of malarial infection of the tertian or quartan variety, or in case the plasmodia had been removed by quinin, the equally characteristic corpuscular changes were found.

In common with herpes, the lesions are probably trophic, and could the point be determined, I believe we would find the lesions to develop along the course of the corneal nerves. If we recall the arrangement of the nerve fibers in the epithelium and anterior layers of the cornea, we will be struck with the fact the curved and irregular shapes of the lesions in dendritic keratitis correspond pretty well with the course of these nerve fibers. The fact that the corneal nerves lose their neural sheaths after penetrating about 1 mm. from the cornea-scleral junction, suggests a reason why the lesions under consideration rarely, if ever, reach to the edge of the cornea, but affect the area where the fibers are not protected.

I can add nothing material to what has already been written in regard to the therapeutics of this disease. The general condition always requires treatment, and a change of climate may be necessary. This is not sufficient, in most cases, without local treatment, to relieve the ocular conditions, and I might go a step farther and say that I have seldom, if ever, seen any striking results, as far as the eye is concerned, from the administration of quinin. Yet it is undoubtedly a necessary part of the treatment, not acting as a specific on a specific lesion, but just as a tonic and other similar treatment will do on other forms of corneal ulcers. Similarly, iron may be needed for a postmalarial anemia, and in every way the general condition should be made as good as possible. Very valuable help can be obtained in this direction by blood examinations. Complete removal of the plasmodia from the blood by quinin having been accomplished, the keratitis may still persist for weeks. As far as local treatment is concerned, an antiseptic wash and atropin should always be used and the eye protected. I have not seen any positive results from dionin. The most striking results will often follow the application of tincture of iodin to the ulcer. The eye is well cocainized, the ulcer outlined by staining, and then gone over with a probe armed with a small amount of cotton wet with the tincture. In spite of the cocainization and immediate irrigation, the application is very painful, and is sometimes not at all beneficial. When it does not help matters, the mildest measures are advisable. Hot applications are beneficial and grateful to the patient. A poultice seems to help at times, though the same result can be attained in a more cleanly manner by hot gauze compresses. Some years ago a patient on whom I had tried all the usual methods of treatment without benefit, went on a business trip to a levee camp. On the advice of an Italian laborer he put a garlic poultice on the eye over night. Next day he was practically well, but I have never had another patient who cared to try the same prescription.

As soon as the epithelium is firmly regenerated, the yellow oxid ointment or some similar preparation should be used to lessen the opacity. The refraction should be gone over at intervals, and the corneal changes followed up by suitable changes in the lenses. The astigmatism very frequently causes discomfort on use of the eyes which glasses will relieve.

DISCUSSION.

DR. C. J. KIPP, Newark, N. J., remarked that he found in Dr. Ellett's paper a statement of all that he knew of dendritic keratitis of malarial origin. Dr. Nash, said he, still holds that this form of keratitis is nothing else than the corneal herpes of Norris, but in his opinion this is a mistake. This form of keratitis he had found almost exclusively in persons suffering from malarial poisoning, very rarely in connection with inflammation of the respiratory organs. It was formerly more common than at present when malarial fevers are infrequent. With regard to the treatment he agreed with Dr. Ellett. He might add that in cases in which there is considerable secretion from the conjunctiva he had used with marked benefit a solution of silver nitrate, 1 or 2 per cent., applied to the furrow as well as to the conjunctiva of the everted lids. He had used dionin in some cases with apparent benefit. It certainly seems to give comfort to the patients when used in the form of an ointment, containing 2 to 5 per cent. dionin, put between the lids before going to bed. He still believed that quinin given in pretty large doses has a decided beneficial effect on the corneal disease, especially if combined with iron. There is a class of cases presenting all the appearance of choked disc in which the disease is really a circumscribed retino-choroiditis. In such cases the patch of retino-choroiditis is stretched on the very border of the papilla and causes a papillitis with much edema. He had seen cases in which this swelling amounted to three diopters. The true character of the disease is often not discoverable until the papillitis has subsided. Then you find an atrophic patch with pigment scattered over it, or fringing it, adjoining some portion of the papilla. In such cases, when seen early, there is usually found a deposit of minute particles on Descemet's membrane, and by this the disease may be distinguished from primary papillitis. In the case of a physician seen only a short time ago no cause could be found for the optic neuritis, but when this had subsided an atrophic patch on the edge of the papilla could be seen and there was no further anxiety in regard to the condition of the man's head.

DR. H. MOULTON SMITH, Fort Smith, Ark., said it had been his experience that the disease sometimes follows chronic malaria. He practices in a locality very similar to that in which Dr. Ellett practices. He had sometimes seen these ulcers in which there was a superficial portion of the surface of the cornea with shreds of epithelium about the edges of the dendritic area. He had also seen this particular type become infected and thinks one should not forget that it is possible for these to become infected with pus-forming germs and thus mislead one in diagnosis and prognosis. He had seen some cases in which no improvement occurred until he began the use of quinin. He attached considerable importance to the use of quinin combined with arsenic as a specific cure for this condition.

DR. GEORGE F. KEIPER, Lafayette, Ind., stated that a year ago last spring it was his misfortune to have such a case in which no symptoms of malaria could be found. This induced him to investigate the condition bacteriologically, and as a result he came on a germ which he could not differentiate even with the help of the bacteriologists at the university. They finally submitted the matter to Professor Novy, and the details of that work are reported in the Transactions of the American Academy of Ophthalmology.

DR. JOHN GREEN, JR., St. Louis, called attention to the use of quinin bisulphate in 3 per cent. solution. This was first used for various types of superficial keratitis and especially dendritic keratitis of malarial origin. He uses it by dipping a cotton-wound probe in the solution and passing it over the surface. It is extremely efficacious in controlling pain, and, in addition to other measures, such as irrigations and atropin, seems to start the condition on toward recovery more rapidly.

DR. LEARTUS CONNOR, Detroit, said he did not live in a malarial region, but had seen in the course of the last 25 years about a half-dozen cases that come under this description. While using all the things that have been mentioned and others he was not at all convinced that local treatment has tended recovery; neither could he see that the constitutional treatment was very efficacious. He did think in the last two

cases that he observed a beneficial effect from the use of salicylate of strontium, but the cases are so few and the character of the disease so irregular that he was not at all certain. If he were to have another to manage, however, he should try that remedy early in the case.

Dr. Edward Jackson, Denver, remarked that there was one point in which he would take issue with Dr. Ellett's description; that is, that in a sense it can not be said that there is any characteristic change in sensibility of the cornea. At Denver since the Spanish-American War it has been the policy of the government to bring troops to Fort Logan to recover from certain diseases of the tropics, and he had seen a few cases of this form of keratitis following severe malaria among these patients. The change in sensibility of the cornea is very easily overlooked because the sensibility may be lost in limited sections of the cornea, not over the whole cornea or globe. These cases are sent to this place to recover from the effects of malaria, and on antimalarial treatment and general hygienic treatment recover in the course of a few months entirely.

Dr. S. D. Risley, Philadelphia, said he had seen at the Wills Eye Hospital quite a group of these cases presenting the dendritic characteristics and had come to regard them as a distinct type of keratitis. It is not only possible, but may be probable, that his clinical judgment in this respect is in error, but they seem to get better, and rapidly better, under periodic doses of quinin and arsenic. It may be that these remedies act simply as tonics, but they did not have the same prompt and specific effect in other forms of superficial keratitis. Another characteristic is their tendency to recur at the well-recognized periods for the recurrence of fevers, multiples of the seventh day. This he had seen in three cases. He was, therefore, inclined to feel that there is something specific in this form of keratitis as compared with those forms which are associated with other dyscrasiæ.

RETROBULBAR OPTIC NEURITIS FOLLOWING CHILDBIRTH.*

CHARLES J. KIPP, M.D.
NEWARK, N. J.

Case 1.—A case of recurrent retrobulbar optic neuritis of one eye following successive childbirths, and ending in atrophy of optic nerve, with whitening of part of the eyelashes and eyebrow of same side.

History.—The patient was a strong healthy woman, about 25 years of age, at the time of her third pregnancy when she first came under my observation. I learned from her at this time that her first pregnancy occurred about four years before the third, and the second more than two years before the third. Her eyes have always been good, she has never had an inflammation of the same, and the vision of both was excellent up to the time of her first pregnancy. Shortly after her first confinement she had an attack of transitory blindness in the right eye, from which she recovered completely. She had another temporary loss of vision in the right eye soon after she gave birth to her second child, but this also passed away in a few weeks, and after that, up to her third confinement, the vision of this right eye was very good. I saw her for the first time five weeks after her third confinement. She then complained of pain and a queer feeling in the right eye.

October 1. Third pregnancy. She is nursing the child. Is in good health.

Examination.—The right eye is entirely normal in appearance and the movements of the globe unimpeded in any direction. The ophthalmoscope showed perfectly clear media. The optic papilla was of normal appearance, but the retina around disc and the region of the macula was somewhat less transparent there than elsewhere. She had an absolute central scotoma. The periphery of visual field was not contracted. She had no disease of heart. Urine contained neither albumin nor sugar. Ordered six leeches to right temple. Also potassium iodid., 5 grs., three times daily. On the following day the opacity of the retina around disc and in macular region was less, and she was able to recognize outlines of large objects. Her vision was not tested closely as she was in bed and her eye was sensitive to light.

Clinical Course.—October 4. Supraorbital neuralgia over right eye. Patient can count fingers at five feet. The opacity of the retina has again apparently increased.

October 6. To-day V. 3/60. The opacity of the retina is markedly increased, especially around disc. She has been taking quinin for the supraorbital neuralgia.

October 8. I noticed to-day for the first time that the eyelashes and hair of brow situated in line with supraorbital notch are white, while the rest are of dark color.

October 13. V. 5/9. Opacity of the retina has disappeared, but the disc is now paler than on previous examinations and the retinal arteries are somewhat narrower.

November 1. V. 5/8. Disc very pale, arteries small.

During the following year patient was seen every month. V. 5/8, with V. F. intact at end of year.

Fourth pregnancy two years after third.

Recurrence.—August 27 I was called to see patient again. Learned that she had been confined of a healthy child two weeks previously. She was in good health and was nursing the baby. The urine was free from albumin and sugar. I learned from her that her vision, which had been very good in the right eye up to a few weeks before her confinement, had suddenly become greatly impaired several times in the two weeks preceding the confinement, but had returned after a day or two. Last night, while sleepless in bed, after more or less headache during the last forty-eight hours, noticed that she was totally blind in the right eye. She is confident that she could see very well with this eye yesterday, and that the blindness came on suddenly. She has now pain in an.[1] above the right eye. The attending physician had dropped a solution of cocain in this eye a few hours before I examined the eye on this occasion. Examination showed normal exterior of the right eye. The pupil somewhat dilated from cocain. The media were perfectly clear. The disc was very pale and its outlines quite indistinct. The adjoining retina was cloudy; the retinal veins were smaller than those of the left eye, and the arteries markedly so. Has perception of light only, but in all parts of field. Ordered six leeches to left temple and internally iodid of potassium in gradually increasing doses.

September 22. The only noticeable change in appearance of fundus is a small extravasation of blood of macula, and between this and outer periphery there are several others, of round form and larger size; vision not improved.

October 3. To-day she can count fingers at a foot in outer part of field. The hemorrhages are disappearing. Otherwise as before.

December 20. Marked atrophy of optic papilla. V. 0. This eye diverges.

Later History.—Since then this eye has become totally blind. The hairs in the brow and the eyelashes in a line with the supraorbital notch have remained white and are so to-day, ten years after the change was first noticed. The patient has not been pregnant since her fourth confinement. Two years after last confinement she had photopsies in the left eye, which up to this time had never given her any trouble, but they passed away after a few days and have not returned since. A few months later she had a slight attack of catarrhal conjunctivitis in the left eye, for which her family physician instilled some drops which caused much injection of globe, pains and flashes of light, followed by marked dimness of vision. I saw her on the following day. The eye was still injected, V. 5/5, V. F. intact for form and colors, in daylight and in dimly lighted room.

Ten years later the examination showed the left eye to be entirely normal.

No one will doubt, I think, that the pregnancies or the childbirths were responsible for the development of the eye disease. To me it seems most probable that the pregnancies caused a disturbance in the vascular supply, a congestion at or near the apex of the orbit, and that

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

this produced pressure on the optic nerve and its sheaths and also on the branches of the ophthalmic branch of the fifth nerve. Others who have observed somewhat similar cases following confinement and during lactation have attributed the optic nerve disease to an auto-intoxication. A full account of the views held by different writers as to the causes of this affection, as well as summary of these cases previously published, will be found in a paper by Dr. George S. Derby,[1] entitled "Optic Neuritis During Lactation, Including a Reference to Other Ocular Conditions Observed in This Period."

As regards the whitening of some of the eyelashes and some of the hair of the brow, this has been observed in some severe cases of iridocyclitis mostly of the sympathetic form. So far as I can ascertain, the case here reported is the first one in which this has occurred in connection with retrobulbar optic neuritis. Only a part of the lashes and of the hair of the brow were affected, namely, those in line with the course of the supra-orbital nerve. The absence of the pigment in the hair was undoubtedly due to a change in the hair papilla whereby the supply of pigment to the hairshaft is interrupted. The hairs without pigment seem also to be less thick than the colored ones near them. Although I saw the patient daily, I did not observe any change in the color of the lashes till after a severe attack of supra-orbital neuralgia. I am unable to say that the change in the color of the hair occurred over night, but I am certain that it took place within a few days. The lashes at the place described and the hairs in brow are still white, ten years after the change was first noticed. The lashes of the lower lid of the same eye and the hairs of the brow of the other side are all still of a brown color. An interesting paper on the premature whitening of the eyelashes by Dr. Alfred Vogel will be found together with the literature of this subject in *Klinische Monatsblätter für Augenheilkunde*, Februar und März, 1906, p. 228.

Case 2.—A case of retrobulbar optic neuritis of one eye, following childbirth. Recovery of vision.

History.—Mrs. W. M. D., 35 years of age, was delivered of first child on July 1, 1899, and had convulsions, but no albuminuria, according to her physician. Shortly after confinement she noticed a blur before right eye. This has gradually increased to such an extent that she can only see large objects with this eye at present. The child died a few days after birth.

Examination.—When first seen by me, Feb. 12, 1900, I found that the vision of right eye was less than 6/60. The left eye had S. 6/6. Both eyes were entirely normal in appearance, externally, and the mobility of both eyes was unimpaired. Ophthalmoscopic examination revealed entirely normal conditions in the left eye, and in the right eye a marked paleness of disc was the only abnormality discovered. Examination of the field of vision of left eye showed contraction of about 20° all around for form and a corresponding contraction for colors. The V. F. of right eye was contracted to a somewhat greater extent, blue and red are recognized only close to point of fixation, and green is not recognized at all. The patient, a large, healthy-looking woman, is now in good health. Urine contains neither sugar nor albumin. I prescribed iodid of potassium in 10-grain doses three times daily.

Clinical Course.—During the following months there was a steady improvement and on March 28 (six weeks after her first visit to me) vision of left eye was S. 6/6. The V. F. was of normal dimensions for form and for blue, but was contracted for red and green. A month later the V. F. was only slightly contracted for green, otherwise normal. The ophthalmoscopic examination at times showed a very grayish disc, otherwise normal condition. The right eye was entirely normal, S. 6/6, V. F. intact for form and color.

When last seen by me, March 1, 1903, nearly three years after her first visit to me, I found the sight of each eye to be S. 6/5, the V. F. intact for form and colors. The ophthalmoscopic examination showed marked atrophy of papilla of left eye, the retinal vessels were of about normal caliber. The right eye was normal in every respect.

She has not been pregnant since she gave birth to her first child.

1. Archives of Ophthalmology, vol. xxxiv, p. 9.

DISCUSSION.

DR. GEORGE S. DERBY, Boston, said that about a year ago he published a paper on this subject, going over the literature very thoroughly, and the impression he got at that time was that no definite etiology could be attached to these cases at all. The condition, he thought, had been very well recognized for a great many years. Reference is made to it in many of the old text-books. Where the neuritis occurs in successive pregnancies it would seem as though prevention of pregnancy should be practiced.

DR. NELSON M. BLACK, Milwaukee, said that in the first case the supraorbital neuralgia would seem to point strongly to the possibility of disease of the sinuses and possibly the increased congestion all over the body accompanying the pregnancy aggravated this condition.

DR. C. J. KIPP, Newark, N. J., said that the cases Dr. Derby referred to are cases attributed to lactation, which was not the case with those of the paper. They followed every pregnancy. Everybody has seen the disease follow pregnancy, but here were four pregnancies, each followed by the same condition.

MEDICAL PHASES OF DENTAL DISORDERS.*

SAMUEL A. HOPKINS, M.D., D.D.S.
BOSTON.

Under this head we have two classes of cases which present themselves for consideration. On the one hand, there are those which, while presenting medical symptoms, are directly due to some disturbance in the teeth or the surrounding tissues; on the other hand, we may have a large number of reflex disorders, the origin of which is not always apparent, but which ultimately we find to be located in a diseased tooth.

Whatever the medical phases of dental disorders may be, or wherever they may be located, in the ears, eyes, throat, nose, in the cervical or the salivary glands or even in more remote organs, it is an unfortunate fact that very many of the cases reported as having their origin in diseased teeth bear with them the confession of failure on the part of the physician to make an early and successful diagnosis.

In going over the meager literature on this subject one is struck by the frequent repetition of such a remark as this: "Everything possible was done for the relief of the patient, but he continued to grow worse until some days after the beginning of the treatment, when attention was called to the condition of the teeth. Then it was discovered that there lay the cause of the disease." In the text-books we find brief allusions to the teeth as disturbers of the neighboring organs, but very little that would be helpful in diagnosis. Fortunately, to become an expert in diagnosing diseases of dental origin, the physician needs only to have the pigeon holes of his memory open so that he will never forget that the teeth may be responsible for many diseases not usually accorded to them. Thus, with a little common sense, he may be able to detect many of these cases almost imme-

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

diately. The physician will show uncommon sense, however, if he will keep constantly in touch with a capable dentist to whom he may bring these cases of doubtful origin and with whom he may consult.

Consideration of the disorders of first dentition must be passed over somewhat rapidly. These come at a period of child life when the dentist is not usually employed; and it is quite unnecessary to draw the attention of the physician to this subject, as there has always been a willingness to exaggerate the importance of the erupting teeth as the disturbers of the health of infants. First dentition has long been made the scapegoat to bear the burden of every childish ill. The ignorant or slovenly physician, failing to find the true cause of disease, has been in the habit of referring everything to the teeth. Mothers and grandmothers have caught the infection and have been willing to lay the blame of every disturbance of infantile health on the eruption of the temporary set. Just now a reaction is taking place and a class of men has arisen who, in their contempt for the loose methods of the past, are willing almost to assert that, as dentition is a perfectly normal physiological condition, it can not, therefore, be responsible for any of the disorders of childhood. Perhaps this is swinging the pendulum too far in the other direction. It is probable that we shall miss the exact truth regarding this matter until a more careful study of the development of the digestive tract is made and proper adjustment of the food of the child to his new requirements is accomplished. Not only is the mouth undergoing rapid development during this period of eruption, but the entire follicular apparatus of the alimentary canal is undergoing remarkable developmental changes. These changes are in anticipation of changes in the character of food which the growing system demands. The secretions of the digestive tract are no longer suited for the digestion of that food which alone constituted the diet of the child during the first six or eight months of infantile life. A mixed food is now demanded, and secretions are altered to meet the new requirements. We must remember, too, that not only the alimentary canal, but every organ in the body is undergoing a change; and that the nervous system, particularly the cerebrospinal system, is in a high state of functional activity wherein it responds quickly and in an exaggerated degree to an irritation which would go unnoticed at a less excitable period. If at this period digestive disturbances are brought about by improper feeding or if any departures from hygienic laws are permitted, it is not remarkable that the erupting teeth should be the scene of attack, neither is it remarkable that serious illness should result.

There is no doubt that the eruption of the teeth does, in some cases, create a disturbance. Neither is there any doubt that the disturbance would be minimized and in many cases go unnoticed were there no other causes at work at the same time to upset the delicate equilibrium of the growing child.

Aside from the long list of familiar symptoms coincident with and frequently attributed to the eruption of the first teeth, diseases of the ears and eyes occur with sufficient frequency at this period to warrant most careful examination of the mouth. The fact that many of these eye and ear symptoms clear up when the disturbing tooth is erupted or the gum properly lanced indicates the intimate relationship between these organs.

The teeth are so well recognized as sources of aural disease that it is only necessary to advise that in all cases of aural disturbance a careful examination of the mouth and teeth be made. I want to make an especial plea for the children in our public schools. It is estimated that one-fourth of all the ear aches among these children originate in or are continued by the presence of diseased teeth. These brave little stoics often suffer uncomplainingly, accepting their suffering as an act of God from which relief is not to be expected. Few of us have any idea of the bravery of these children in their struggle with ill health and pains, and I hope the day is near when we shall have provision made for the care of their teeth as a means of relieving suffering and preventing illness.

The disturbing influence of the sixth-year molars is not generally recognized and in the vast majority of cases it is of no importance. If, however, you find the child of five and a half is rather more fretful and cranky than usual; if you discover that sleep is disturbed and that the appetite is not up to the normal, an examination of the mouth will probably reveal a hyperemia of the mucous membrane in the molar region, and perhaps the cusps of the incoming tooth may be seen. Beyond the exercise of a little more patience with the child and a little more care in diet, treatment is rarely necessary. Occasionally, however, the irritation extends to the tonsils and fauces and a mild tonsillitis may result. Occasionally, too, a stomatitis may be set up that will not readily yield to treatment until the teeth are erupted. Less frequently the glands of the neck become slightly swollen. Just here a suggestion of caution might be made. If the swelling is coincident with the eruption of these teeth; if the swelling is slight and no other evidence of tuberculosis is present, it would be well to defer operating on the glands until the teeth have come through and the mouth has returned to its normal state. It sometimes happens that the gland symptoms disappear with the eruption of these teeth and an operation becomes unnecessary.

During the following six or seven years of the life of the child the condition of the mouth and of the teeth is responsible, in a large measure, for the health of the child and its proper development. If the teeth are neglected during this period, loss of appetite, indigestion, ill health and an arrest of development which can not be retrieved will be brought about by the inability of the patient to properly chew his food; while the absorption of vitiated oral secretions and the ptomaines resulting from food decomposition strongly predisposes to disease. A few years ago the writer had occasion to study the difference in virulence of certain pathogenic bacteria in different mouths and in the same mouths under different conditions. The results of those experiments, published three years ago, have been confirmed by further observation, and it may be accepted as proven that not only are bacteria found in greater numbers in uncared for and neglected mouths, but their pathogenic properties are greatly increased in such mouths. This may be explained by the abundant supply of nutrient media furnished by the lodgment of vast quantities of food in and about broken-down and defective teeth and possibly also by the altered secretions of the salivary and mucous glands. The pneumococcus is especially variable in the intensity of its pathogenic properties in different mouths and in the same mouths under different conditions, and the following facts, brought out in the experiments referred to, point to a possible means of reducing the number of pneumonia cases.

The bacterium is found in a large number of healthy

mouths. The exact percentage of mouths in which the pneumococcus is present has been variously estimated and is probably not far from 15 to 20 per cent. In some cases the saliva containing the micro-organism is fatal to small animals, but too much stress must not be laid on this action, as other forms found in the mouth seem to have a similar power.

The organism loses its pathogenic property when grown on artificial media or when the nutrient medium is insufficient, but its pathogenic properties may be revived by passing through susceptible animals. Few organisms are so easily destroyed by antiseptics as the pneumococcus. In the course of these experiments neglected and unclean mouths from which this organism had been obtained were thoroughly cleaned and the teeth put in good condition. For a period of fourteen days or more the teeth were kept scrupulously clean, with the result that in a majority of cases the organism disappeared altogether, and in the remaining cases its virulence was reduced and the saliva became non-pathogenic. This experiment is such a simple and practical one that it can easily be repeated in any dental infirmary with this and other bacteria. As a matter of fact, practically the same results were obtained with the aureus and other forms which were under observation, and the following deductions seemed warranted. Inasmuch as most disease germs enter the body via the mouth, and inasmuch as their virulence is increased when they find lodgment in diseased teeth or in the abundant food material contained in neglected mouths; inasmuch as cleanliness retards growth and reduces the pathogenic property of the bacterium when it does not actually destroy the organism, it behooves the physician and the dentist to regard the teeth and the mouth as important factors in diseases of bacterial origin.

The period between six and twelve years is a time when the teeth especially suffer and when they offer special opportunities for the reception of bacteria and the growth and development of the same. Caries in the first teeth proceeds with great rapidity, and these teeth receive little or no attention except among people of education and large means. Broken down crowns, diseased roots and suppurating inflammations lower the vitality of the child and render him an easy victim to the invasion of infectious disease. It is known that guinea-pigs and other small animals fed on decomposing food or treated with purulent discharges are found to lose their resisting power to disease. Animals kept in pens near the opening of a sewer where the air is vitiated by the sewer gases are found to succumb much more rapidly when inoculated with pathogenic bacteria than animals furnished with a bountiful supply of fresh air, and there is scarcely room for doubt that a child forced to swallow the purulent discharges from an abscessed tooth or the ptomains and toxins resulting from proteid decomposition is no longer able to offer proper resistance to the action of the disease.

Considering the number of contagious and infectious diseases which occur during this period, it is reasonable to believe that the state of the mouth and teeth have an important bearing on the development and spread of infection. Herein is disclosed a possible addition to our knowledge of prophylaxis and a method, still untried, of reducing the cases of infectious diseases in children. While little can be done at present to change existing conditions, except in that small proportion of cases in private practice which we have under our control, there is one phase of disease which occurs in both hospital and private practice which possibly might be improved along the lines indicated. Where one disease follows another, as where pneumonia follows measles or whooping cough, it would seem as if careful attention to mouth cleanliness during the period of convalescence might result in the prevention of many troublesome and dangerous sequelæ.

Reference has been made to the fact that suppurative discharges from temporary molars are frequent in childhood. It happens that the sixth-year molars, so often mistaken for temporary teeth and neglected, frequently break down and a suppurative condition follows. The absorption of pus from these teeth seriously affects the neighboring glands. In the superior maxillary region the parotid group is sometimes affected, but the submaxillary and superficial glands of the anterior triangle of the neck to which the lower teeth drain are more frequently affected. Enlarged glands occur in many cases without dental lesions, and there are a great many more cases of septic absorption from teeth than there are enlarged glands, but from the fact that the glands of the neck and the mesenteric glands are perhaps next to the lungs the most common seat of tuberculosis invasion, it is suggested that resistance to tuberculosis is lessened by the constant absorption of septic matter from diseased teeth. Moreover, many cases are reported of tuberculous glands of the neck where the tubercle bacillus was found in a diseased molar tooth, and we have strong presumptive evidence that in a considerable number of cases the infection found its way into the gland through a diseased tooth.[1] Several cases reported in the *British Med. Journal* confirm this belief, as tubercle bacilli were found in the diseased teeth and in one instance in the abscess sac at the end of the root.

In two cases which have come under my own observation the bacillus was found in the putrescent pulp of the extracted molar, and there seemed to be little doubt that the glands had been infected through this channel.

Ordinarily the eruption of the twelve-year molars is unnoticed. In rare cases it may cause constitutional symptoms of a severe nature. This is more likely to happen where development of the jaw is tardy and where there is insufficient room for the eruption of the tooth between the posterior portion of the first molar and the upright portion of the mandible. If from the tenth to the twelfth year you find the child suffering from fretfulness and loss of appetite, if the eyes and ears are irritated, if anemia with nervousness bordering on hysteria occur, it is just possible that an obstructed second molar is responsible for the symptoms described. An *x*-ray may be necessary to locate the tooth with accuracy and to make the diagnosis, and the treatment must depend on the condition revealed. I deplore most seriously the sacrifice of the six-year molars, yet it may be justified if we become convinced that there is no other way of relieving pressure. I wish to emphasize especially these cases, because they do not occur with any great frequency and few dream of the possibility of these teeth causing such serious illness. If you ever do meet with such a case you will be amazed at the improvement that will follow the relief of pressure.

Disease of the posterior superior teeth is so well recognized as a cause of empyema of the antrum that I will not dwell on this phase except to urge the greatest possible care in examination of the teeth whenever the antrum and associated sinuses are involved. The nasal fossa may also be involved in disease of the superior

1. British Med. Journal, Aug. 20, 1904, p. 385.

incisors. Inflammation extending from one of the third molar teeth or, indeed, from any of the posterior teeth has been known to give rise to inflammation of the nasal mucous membrane, and a discharge from the nose and catarrhal pharyngitis may be caused or continued by the irritation arising from a pulpless tooth. Hyperemia of the turbinated bodies and acute rhinitis may be greatly aggravated by an extension of the irritation from the diseased tooth.

Perhaps no one tooth is capable of giving rise to quite so many severe disturbances as those which may be set up by an erupting wisdom tooth or by the same tooth when inflammation and death of the pulp occurs. From the first condition, case after case of ankylosis may be cited with intense neuralgic pains and severe tonsillitis as premonitory or accompanying symptoms. Inflammation extending along the Eustachian tube from this source gives rise to serious aural disturbances frequently attended with great pain. Unusual and often obscure ocular symptoms may sometimes be traced to this source, while constitutional disturbances are frequently of a severe and serious nature. Either from an erupting or from a pulpless wisdom tooth the formation of pus is always to be dreaded because of its tendency to burrow until some vital part is reached or because general septicemia with grave danger to life may result from the absorption of pus. Suppuration from a third molar should be promptly checked, even if it necessitates the loss of the tooth. Fortunately, the agency of the wisdom tooth in giving rise to disturbances in associated tissues is generally not difficult to detect, but it sometimes happens that an erupting third molar without giving great pain will produce enough irritation and enough pus will be absorbed to give rise to a chain of symptoms puzzlingly like the symptoms of a mild attack of typhoid. It may occasionally save grave anxiety if the third molar region is carefully examined when obscure typhoid or malarial symptoms present themselves.

The action of pulp stones in causing intense pain is now generally recognized, though it must be admitted that the diagnosis is often extremely puzzling. It is safe to say that no diagnosis of neuralgic pain in any of the various ramifications of the fifth nerve can be made without a careful examination of the teeth. As frontal headache generally results from errors in refraction so pains which simulate facial neuralgia originate generally in the teeth.

The influence of erupting and diseased teeth in producing many forms of stomatitis must be passed over without consideration and many nervous reflexes which have their origin in diseased teeth must be neglected. Many other aspects of this subject will occur to the physician who follows this paper, but it is perhaps unwise to carry its consideration further.

It is futile perhaps to expect materially to restrict disease or render our environment innocuous. The laity will persist in unclean habits and will underestimate the value of hygienic living. Commercial zeal, the demands of society, the exactions of school and college and the complexity of life even for the very young will continue to prevent mouth cleanliness from receiving the attention it merits. The self-satisfied physician and the indifferent dentist will continue to neglect this and other forms of prophylaxis, yet the true professional man will always find his greatest satisfaction in the prevention of disease; and it is to him that an appeal is made to practically test the efficiency of the suggestions made in this paper.

If the inspection of school children could be made to include an inspection of their mouths it is believed that a marked improvement would be noticed in public health; and if the knowledge that mouth cleanliness is a potent factor in restricting disease could be made known it is believed that intelligent and progressive people would avail themselves of this knowledge as a protection to health.

DISCUSSION.

Dr. Thomas Morgan Rotch, Boston, said that, with regard to the question of the first molar and its development, he believed in a large degree that those tendencies which develop at this period—many pathologic in character—are simply coincident to a molar appearing at that time. The real trouble lies behind and beyond. In the first place, prenatal tendency to want of development, lack of room, begins to be noted at this period because the other unerupted teeth at this period lie in many different positions, because their change of position in the course of eruption is remarkable. Crowding is manifest in the direction of least resistance, which is naturally on the side nearest. At about this period the child begins to be a mouth-breather, and adenoid vegetations make their appearance, also the result of degeneracy, but aggravated by the fact that there is lack of breathing space, want of oxygenation and the fact that the child finds it necessary to breathe through its mouth. This brings decreased resistance to infection, impaired development of the body generally, particularly in the direction of the bronchi and lungs. Not getting the amount of oxygen necessary, there is a decrease of resistance in this direction, and he believes that at this period chiefly is laid the foundation for great susceptibility to tubercular infection. So far as the pneumococcus is concerned, he agreed with the position of the essayist, and cited as a good example the fact that we do not have pneumonia and bronchitis following the administration of ether as much as we used to. He believes that this is largely due to proper disinfection of the mouth. Again, we do not have pneumonia following scarlet fever, etc. Those who had necrosis as a result of one of these diseases were usually people who were treated under the old methods. Since mouth-breathing has been treated in hospitals there is very little of it. Dr. Rotch emphasized the point that there is little or no treatment that will benefit these patients at the time of the eruption of the first molar. If those little mouths were spread out at this period relief could be given which would be pronounced and real and much more effective than expansion of the arches after the teeth have erupted. What is the use of waiting until there is a narrow arch? Why wait until all the surrounding sinuses have narrowed and become deformed? Direct relief can be given by application to the arches because they widen easily at the median suture, and this gives definite benefit. This not only helps the eruption of the first molar, but lays the foundation for the eruption of the second and third molars.

Dr. M. I. Schamberg, Philadelphia, mentioned the case of a patient who had been suffering from tinnitus aurium and treated by a very able ear specialist in Philadelphia, and who was subsequently sent to him to search for the dental cause of her trouble. Though she had but a few teeth on the affected side, he decided to take a radiograph of several upper teeth that were loosened with pyorrhea, and the picture showed distinctly a communication with the pyorrheal pockets from a small opening in the floor of the antrum. On the removal of those teeth and the syringing of the antrum the ear symptoms were at once relieved.

Dr. Alice M. Steeves, Boston, said that parents should be educated as to the well being of the child. While approving all that is scientific and broad, physicians must go back to the primary cause of the trouble, the care of the child's mouth from the beginning. It is necessary to teach the mother how to clean the child's mouth. Many physicians are too anxious to save their time and turn it to financial profit. They do not seem to consider that teaching the patients and the prophylaxis thereby secured are the elevating things in the profession. Educate the people to appreciate their general health and we will get accordingly better results.

REPORT OF TWO CASES OF INFANTILE SCURVY.*

ALICE M. STEEVES, D.D.S.
BOSTON.

The history of scurvy dates back to 1589, when its most dreaded presence was among sailors and in the armies, where a plentiful supply of fresh meat, vegetables and water were unavoidably limited, and often absent altogether. Much suffering and not infrequently death have resulted from this disease, which has been classed by prominent writers among the diseases of the blood and nutrition.

Scurvy, scorbutus, or Barlow's disease, so called because of the concise and efficient article published by Barlow of London about twenty-five years ago, and elaborated on in later years by Comby of Paris, is not confined to adults, and is equally serious when appearing in infancy or childhood.

Bacteriologic causes have not been satisfactorily proven, and while it seems not unreasonable to believe that further investigation will throw some light on this side of the subject, and although the disease is declared uncommon by modern writers, yet it seems possible that in orphan asylums, and in institutions where children are overcrowded and underfed, that many cases might be found if proper medical inspection were instituted.

A few years ago, a child of 4 years of age was referred to my clinic from a large orphan asylum near by. On examination I found a well-developed case of scurvy. I prescribed treatment and ordered that the patient report to me at stated intervals. After waiting several days for the patient to appear, I called at the institution and found that the child was benefited from the treatment prescribed, and the matron told me they did not get usually so bad as this one. I concluded, therefore, that these cases are not rare in such institutions. On examining the mouths of 180 girls at the Lancaster Industrial School, I found 20 per cent. with thickened spongy gums, saliva purulent and mucoid and with the mucous membrane of the nose, mouth and throat inflamed. These patients invariably complained of rheumatic pains, and while the condition is not strictly scorbutic, it seems to suggest a field for investigation.

GENERAL SYMPTOMS OF THE DISEASE.

Infantile scurvy may appear at any age, but usually about the ninth month a child, anemic, poorly nourished, and living in improperly ventilated rooms becomes gradually weak and irritable. At the same time the muscles gradually become soft, the face becomes pale and assumes a scared expression; the skin is tense, shining, and seems edematous, but does not pit on pressure. The limbs become sore and the child screams if touched. The legs are flexed at first and later are extended. Swelling appears on the shafts of long bones, on the femur first and on the upper end of the tibia, later it may appear on any of the long or flat bones. The lesions are not always symmetrical and may go on to separation of diaphysis of the femur or upper end of the tibia. The eyes are more or less affected; ecchymosis appears in spots on different parts of the body. The lesions of the gums are more marked when teeth are present; the gums become swollen and purple, and bleed easily. The mouth is filled with a fetid sanious exudate. Digestive disturbances are vomiting and diarrhea. The internal organs affected are the spleen and kidneys.

COMPLICATIONS.

Infantile scurvy is not infrequently complicated with acute pulmonary diseases and in such cases there is a rise in temperature, accompanied by respiratory and cardiac disturbances.

TREATMENT AND PROGNOSIS.

Treatment.—This consists of regulation of diet. Milk, beef juice, fruit juice (preferably orange and lemon) and tonics must be given as the case demands. Plenty of fresh air, water and cleanliness are essential.

Prognosis.—Under favorable conditions a gradual recovery may be expected. When complicated with acute pulmonary diseases the case may terminate fatally in a very short time. Scurvy is frequently a complication of rickets.

PATHOLOGY.

Pathologic findings reported by different writers are extravasion of blood beneath the periosteum, separation of the epiphysis of the femur, sub-periosteal, medullary, and muscular hemorrhages, and a diminution of red corpuscles with their hemoglobin. No changes in the leucocytes are reported so far as I can find.

CASE I.—Mary B., aged 7 months, was brought to the dispensary.

Examination.—She had anemia, with swelling of the face and legs. The skin was shiny and tense; the parts did not pit on pressure. The legs were extended, with the toes turned outward. There was ecchymosis over the right eye and some spots on the upper part of the body. The gums were swollen and purple, and the mouth was filled with a fetid exudate. She cried with pain when touched and seemed in constant dread of being handled.

History.—The child's mother had nursed her for two months when all seemed to go well; but the mother was obliged to work and the child was fed on Nestles' food after the beginning of the third month, when it gradually lost strength and suffered from indigestion and loss of appetite, followed by the above described condition.

Treatment.—The patient's mother was instructed to give the child a warm bath and then to wrap her in flannel. The child's mouth was irrigated with a solution of water Oi, glycerin 3i, lemon juice 3ss, castor oil 3i, was given to clean out the alimentary canal. Modified milk, beef juice, and orange juice were ordered.

Result.—The child's mouth cleaned up and she began to retain food, when pneumonia developed and she died in forty-eight hours.

CASE 2.—Alfred G., aged 4 years, was brought to my office.

Examination.—He was nervous and afraid of being touched; he cried when looked at; his attendant gave a typical history of scurvy. The child's gums were purple, mouth filled with fetid sanicus discharge, and face anemic and shiny. The femur was so sore that the child moaned at each step. The joints were swollen, purpura was absent.

Treatment.—I ordered milk with lime water, beef juice, orange juice and lemonade. Castor oil, 3ii was given to clean out the bowels. The mouth was irrigated with water Oi, glycerin 3i, lemon juice 3ss. Treatment was changed as the child improved; he made a slow recovery.

There has been much writing on scurvy, as may be found by referring to the "Index Medicus." The principal authorities consulted in this article were Barlow, Comby, Baginsky, Rotch, Jacobi and Keating.

229 Berkeley Street.

DISCUSSION.

DR. M. L. RHEIN, New York, said that Dr. Steeves has very properly drawn the attention of the profession to the possibility of so much of this condition of infantile scurvy being prevalent in juvenile institutions, and to the great possibilities of its undermining the future strength of the child. The diagnosis of infantile scurvy is of comparatively recent date, and

* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

should not be confounded with general scurvy, which is a disease that has been recognized for a long time. It is one with which every practitioner should be thoroughly familiar, and Dr. Rhein said that Dr. Steeves did not draw the attention strongly enough to the fact that the main point in treatment of infantile scorbutus is that the diet should be radically changed; that it has been due to improper nutrition, and that while the acids are pre-eminently called for, the main feature is absolute change in the form of diet.

RELATION OF PHYSICIANS TO THE SO-CALLED "ETHICAL" PROPRIETARY MEDICINES.

G. B. KUYKENDALL, M.D.
POMEROY, WASH.

The medical profession is awakening to the fact that it has been made a cat's paw to rake out the proverbial chestnuts for the proprietary manufacturers. The work done by several lay papers and by THE JOURNAL of the American Medical Association and by a few other medical journals is having good results in causing physicians to try to see where they are.

There can be no doubt of the justice of the censure that has been passed on a number of proprietary manufacturers. The exposure of their methods has been so complete and the evidence against them so conclusive that there is no room for question.

There is no language too strong to use in condemnation of crooked concerns and their methods, but the question arises: For how much of this state of affairs are the members of our profession responsible? If not responsible for the sins of the proprietary manufacturer, have we not, to a great extent, aided them in their reprehensible work? There is scarcely one of the proprietary medicines for which the manufacturers do not quote letters of commendation from several physicians, some of them heads of medical colleges, professors, lecturers or writers of medical works or men prominent in the ranks of the profession.

How came these physicians to give their endorsements for publication? For certainly manufacturers did not practice fraud and use these names without authority. While some of the testimonials were not fairly obtained and are not rightly used, it is certain that a good many medical men of more or less eminence have permitted their names to be used to exploit very unethical preparations. We find the names of supposedly reputable physicians, members of medical societies and even of the American Medical Association, endorsing with high praise dozens of proprietary medicines, many of which are advertised in the lay press.

Is it not a fact that some members of our profession have been taken in by the makers and venders of proprietary medicines? We have trusted too implicitly to the honor of these manufacturers; some of them started out with very fine promises, and for a time were ethical to some extent, but after they had obtained the recommendation of physicians they betrayed them and placed them in a very unenviable position. We have listened with too much credulity to the representations of detail men, and have accepted their dictum, with too little investigation. There are many cases, not far to seek, for the present uncomfortable relation of physicians to the proprietary medicines and their manufacturers.

PHYSICIANS' USE OF PROPRIETARIES.

There has been a growing demand for handsome-appearing and pleasant-tasting preparations. The pharmaceutical houses have done much to make the taking of medicine less of a terror than it was formerly. With the bewildering array of elixirs, syrups, cordials, etc., in palatable form, and the glowing accounts of the wonderful virtues of these modern products, we have been hypnotized; certainly, in many instances, have been misled. In addition to the plausible advertisements of these products, the country is infested with representatives of the manufacturing establishments who tell us of the wonderful success these new things are having, how other physicians are "curing" almost every case with them. We are urged to try this or that combination, or mix-up, on the say so of somebody interested only in the sale of the product. If we listened to all of them, the days would be too short and life too brief to arrive at any satisfactory conclusion in regard to half of the wonderful products we are urged to try.

It would seem that not only the laity, but physicians as well, are easily humbugged and, even when scientifically trained, are captivated by the air of mystery thrown around a subject.

The trouble is that we are letting a lot of commercial adventurers do our thinking for us. We do not study materia medica and therapeutics as we should. We allow proprietary-medicine makers to put up compounds, tell us what they are good for and how to use them, without thinking how absurd it all is.

Instead of thoroughly studying our cases and writing our prescriptions, to fit present conditions, we too often consult the list of ready-made proprietaries to find something that will suit, after a fashion, the case in hand. Too many physicians prescribe these remedies because it is easier to do so than thoughtfully to write out their own combinations. For this reason the files of our drug stores are lumbered up with prescriptions for Hancock's bromids, Hayseed's Viburnum, or some fellow's hypophosphites. The promoters of such preparations are becoming millionaires while the poor doctor, poor in more ways than one, wears threadbare trousers and eks out an existence only.

We should do our own thinking and not delegate our head work to interested medicine venders. It may have been true in Cæsar's time that all Gaul was divided into three parts, but it has changed in these days; the drummer has his gall concentrated into one wad, and it takes an iron will to stand up and face down the smooth talk of the modern representative of some of the houses. They want to tell us all about what to give, and how to practice medicine, if we would win success, and too often we let them do it.

MEDICAL JOURNALS AND PROPRIETARIES.

To a very considerable extent we are to blame for the humiliating relation of the profession to the pseudo-ethical and quack remedies. It is not alone the rank and file of the profession who are to blame in giving favorable recommendations to secret proprietary medicines. There are a number of so-called medical journals which devote a large part of their space to advertising and exploiting questionable proprietary products. It would be easy to name a number of notable instances in which these journals do not hesitate to recommend, to those asking for treatment of cases, any of the proprietaries which they advertise.

Some of the journals of this class have large subscrip-

tion lists, and many physicians patronize them. If the demand ceased, the journals would go out of business. How are we ever going to get at manufacturers of nostrums so long as they can exploit their products in the medical journals and so long as medical journals give them their moral support?

The pharmaceutical houses have done much to advance "elegant pharmacy," but many really useful drugs have been manipulated until their elegance far outruns their usefulness. While we have been getting out the bitter, the nauseous and the disagreeable, and getting in syrup, flavorings and aromatics, the real virtues of the drugs have been lost in the shuffle in too many instances, and we have left only nice placebos suitable for persons who have not much the matter with them, but which are dangerous and deceptive things to trust when active drugs are really wanted.

Some of the pharmaceutical houses that we have been used to rely on as ethical in their methods are not altogether free from little transgressions in the matter of appealing directly to the public with their products.

I noticed the other day, standing on the shelves of a drug store, some four-ounce bottles that had on them familiar-looking labels. On examination they were found to contain euthymol, put up by Parke, Davis & Co., and inside of the wrapper of thin parchment paper there was folded on the back of the bottles a pink circular with printing on both sides. One side had a heading reading, "Euthymol, an efficient and harmless antiseptic and germicide," and the formula and an account of its usefulness as a germicide, and at the bottom it reads: "There are many other household applications for euthymol." On the other side there is a heading, "Chief applications of euthymol as a household remedy." Then follows a list of diseases and conditions for which the preparation is recommended, with directions as to manner of using. Will physicians feel like continuing to write prescriptions calling for euthymol when its manufacturers in this way undertake to prescribe for the ailments of the people? Some time ago I wrote to Parke, Davis & Co. in regard to this matter and they have assured me that the objectionable features will be removed from their advertising circulars in the future. I think all will agree that any preparation which is put up for physicians to prescribe should not be advertised to the laity under the same name, with lists of diseases in which it is useful, with manner of using!

Take another instance: In the "literature" left on my desk a few days ago by a representative of the firm of John Wyeth & Brother was a leaflet entitled "Collyrium, Wyeth, an antiseptic eye lotion." On the inside was a detailed account of the benefits of an antiseptic eye lotion "to all persons suffering from congestion or redness of the eyes by using them for near work over a prolonged period." "Sewing women may use this lotion freely, to avoid eyestrain, to which they are subjected many hours daily. Automobilists will find it most valuable in removing fine dust from the eyes, etc.," and then follows a detail of other uses, and at last, "Collyrium Wyeth, aside from its valuable healing properties, will prove an efficient adjunct to any treatment the physician may direct." Collyrium Wyeth, Pepto-Mangan-Gude, Bioplasm-Bower, there is here a similarity in rhythmic flow of words that is very suggestive.

Now this collyrium is designed either for the people direct or for the physician. Which is it? The leaflet accompanying it gives no hint whatever of its composition; hence it would be as wrong for a physician to prescribe it as it would be to recommend Thompson's eye water. If it is for the patient to buy at the drug store and to use "as an efficient adjunct to the treatment of the physician," then there are a good many of us who would prefer either to direct the whole treatment or to turn the case over to John Wyeth & Brother. This thing of manufacturers having one set of advertisements for the physician's eye and another for the public is getting to be too common.

There are before me two advertisements of Marchand's hydrozone. One is clipped from the advertising pages of *Advanced Therapeutics*. This winds up with: "My book, the 'Therapeutical Applications of Hydrozone,' sent free to physicians." The other is cut from the *Spokesman-Review*, a newspaper published in Spokane, Wash. This has printed in large flaring letters: "Hydrozone Cures Sore Throat," and "One 25-cent bottle free. Write for booklet on rational treatment of disease." Here we have the manufacturer of a product that he claims is strictly ethical, appealing to the people with one set of advertisements and to the physician with another. It is the old trick of trying to carry water on both shoulders. Like the old darkey, he expects to "ketch 'em a-comin' and a-goin'." and in the past he has been succeeding.

Let us know what we are giving, and prescribe with a distinct idea of what we expect to accomplish. We should get out of league with these proprietary and "patent-medicine" people and wash our hands of this whole business of prescribing medicines whose exact composition we do not know.

When we get the beam out of our own eyes we will be in better position to ask the removal of the mote from the eyes of others.

Clinical Notes

A NEW METHOD OF MOUNTING MUSEUM PREPARATIONS.

HENRY ALBERT, M.S., M.D.

Professor of Pathology and Bacteriology, University of Iowa; Director of the Iowa State Board of Health Bacteriologic Laboratory and Pathologist to the University Hospital.

IOWA CITY.

Realizing the importance of having a large collection of specimens illustrating the gross pathologic conditions, kept or preserved in their natural shape, size and color, in presenting the subject of pathology to medical students, and being unable to obtain a sufficient amount of material from recent autopsies and operations to meet the needs of a properly conducted course, I have, for the last few years, been paying considerable attention to the different methods of making permanent museum preparations so that whenever a good pathologic specimen is obtained it may be used repeatedly for demonstration.

Although I have repeatedly tried several of the methods recommended by different workers during recent years, none has proved so valuable as the Kaiserling method. When using flat jars, the specimens can be so arranged as to have the principal pathologic part next to the glass and in that way best exposed to view. It often happens, however, that specimens mounted in liquid fall out of position, necessitating constant manipulation to keep them so arranged as to present the diseased part to best advantage.

About four years ago I conceived the idea of mounting pathologic specimens in glycerin jelly in the ordinary

Petri dish used for bacteriologic work. These mounts were very successful, but while waiting to see how long they would remain in the good condition in which they were when first mounted, several articles were published regarding the preparation of specimens in the very manner with which I was at that time experimenting. The author of one of the articles, Dr. W. M. L. Coplin, of Philadelphia, has obtained very fine results by mounting specimens in glycerin jelly, not only in the Petri dishes, but more especially by his Petri-dish-glass-plate method. A number of these specimens were exhibited at the Atlantic City session of the American Medical Association. In endeavoring to make my specimens still more useful and practicable, I conceived the idea about two years ago of mounting stained microscopic sections of the pathologic specimens in the same Petri dish in which the specimen was mounted, so that by placing the Petri dish on the stage of a microscope the histologic features corresponding to the gross characteristics of the specimen could readily be compared. The value of this method will readily be appreciated by all who are concerned in presenting the subject of pathology.

Fig. 1.—Petri-dish-glycerin-jelly preparation of a specimen of cirrhosis of the liver. The stained microscopic section in the lower part of the field was taken from a piece removed from the gross specimen, as seen in illustration.

either to medical students or to practitioners in medical societies. The specimens are prepared as follows:

A small piece (or several pieces) of the gross specimen is removed for microscopic examination. The specimen is then washed free from any blood that may be on its surface and is placed immediately in Kaiserling's solution No. 1,[1] in which

1. Kaiserling's solution No. 1 (the fixative) consists of:
   Formalin (40 per cent. formaldehyd) ..... 800 c.c.
   Potassium nitrate ..... 45 gm.
   Potassium acetate ..... 90 gm.
   Water (distilled) ..... 4000 c.c.

it is left for from a few hours to five or six days, depending on the size of the specimen. This solution fixes the specimen and so hardens it that it will retain its shape. While in this solution the color will disappear. It is then placed in alcohol (95 per cent.), in which it is left for from one to six hours, depending on the size of the specimen. In this solution the color of the specimen again returns. Finally it is placed in Kaiserling's solution No. 3,[2] in which it may be kept indefinitely.

2. Kaiserling's solution No. 3 (the preservative) consists of:
   Potassium acetate ..... 200 gm.
   Glycerin ..... 400 c.c.
   Water (distilled) ..... 2,000 c.c.

If it is desired to mount the specimens in the Petri dish, a gelatin medium consisting of 10 parts of gelatin to 90 parts of Kaiserling's preservative solution[2] is prepared. This is clarified and sterilized just as the ordinary gelatin culture medium is prepared. The addition of a few drops of carbolic acid added to the gelatin while liquid will prevent the growth of moulds which otherwise frequently develop. The same thing may be accomplished by throwing a piece of thymol or camphor on the surface of the gelatin after it has been hardened. This glycerin jelly may be placed in a stock bottle and be used at any time.

Before mounting the specimen a section of the tissue is stained, clarified and mounted in balsam between two cover glasses. It is then mounted on the inner surface of the cover of the Petri dish. The mount is made near the edge of the cover in order that the specimen may be so situated as to be easily examined on any microscopic stage. If the cover of the Petri dish is perfectly smooth (as it should be for this work), the specimen may be mounted directly on the inside of the cover of the Petri dish—the specimen being covered with the ordinary cover glass. When the balsam used for mounting the preparation has become thoroughly dry, the gross preparation may be mounted. This is done by pouring some of the glycerin jelly (liquefied by gentle heat) into the Petri dish, then putting in

Fig. 2.—Petri-dish glycerin-jelly preparation of sarcomata of the intestine and peritoneum secondary to a sarcoma of the uterus. The dotted lines indicate the corresponding parts of the gross specimen and the stained microscopic sections of the same.

the specimen to be mounted, and covering the latter with more of the liquefied glycerin jelly. Enough of the gelatin should be poured into the Petri dish to form a slight convexity above the level of the dish; then a few drops of formalin are added, which assists in preserving the specimen and so acts on the gelatin that it subsequently remains firm, and is not easily broken up. The cover of the Petri dish is then placed over the dish proper and gently forced down in contact with the dish—some of the glycerin jelly necessarily being squeezed out between the cover and the dish proper. When the cover is in contact with the dish a weight is placed on the dish for some hours or until the gelatin has become hardened. Then the gelatin between the cover and the dish is scraped out and a small piece of gauze pressed in. The remainder of the space is then filled by pouring in liquefied hard paraffin. When this hardens the excess of paraffin is scraped off, the specimen is labeled and the preparation is completed.

The mounting of a single preparation requires considerable time and work, but when one sees the quite natural condition in which the specimen may be kept indefinitely and the great value of a preparation when so

mounted that a gross specimen may readily be compared with a microscopic section of the same tissue, it will be readily seen and appreciated that it is worth all the time and trouble required. The illustrations accompanying this article show the results obtained by this method of preparation.

After I had prepared the specimens in this way I thought that there ought to be some way in which the

Fig.3.—View of a hand microscope with the Petri-dish-glycerin-jelly preparation fastened in a special device and so placed as to afford a naked-eye view of the gross preparation. A mounted microscopic section of it is seen at one side.

specimens might be so arranged that when passed around a class of medical students or during a clinic or at medical societies the gross specimen and the microscopic section might be simultaneously compared by the aid of the ordinary hand microscope. To accomplish this I devised a simple attachment, which may be applied to

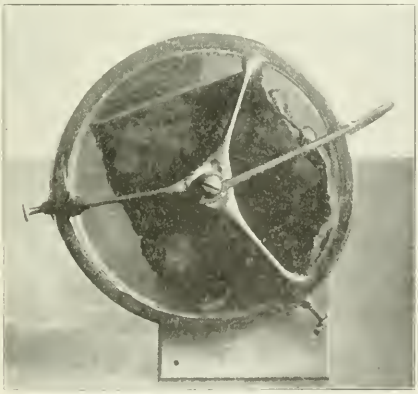


Fig. 4.—View of base of hand microscope with a Petri-dish-glycerin-jelly preparation fastened in special device and so placed that the microscopic section is directly under the objective of the microscope.

the ordinary hand microscope, in which the Petri dish proper may be placed and in which all parts of the specimen may be well inspected by the naked eye and the microscopic preparation then examined by placing it under the objective of the microscope. The device is so arranged that any part of the Petri dish may be placed under the objective and held firmly in place by a spring clamp. A better idea of the device can be obtained from the illustrations.

In my hands this method of preparing and demonstrating specimens has proved invaluable on all occasions when it is either impossible or impracticable to use a large stand microscope, as, for instance, in the clinical amphitheater, in medical societies or in the ordinary recitation room.

I desire to acknowledge the valuable assistance of Mr. L. A. Quaife in carrying out the technic necessary for this work. This method of mounting museum preparation is, of course, just as applicable for anatomic and embryologic specimens as for pathologic material.

A PORTABLE GASTRIC LAVAGE OUTFIT.

JESSE S. MYER, M.D.

ST. LOUIS, MO.

With the modern tendency to simplify therapeutic and diagnostic measures it seems strange indeed that the old method of gastric lavage should be so persistently employed; and this, in spite of the fact that the Leube-Rosenthal method has been so long known to the profession. Surely no one who has employed both methods can consistently maintain that the funnel method is either simpler, cleaner or more efficacious. In fact,

Fig. 1.—Gastric lavage outfit for office or hospital use.

no method may be considered simple which requires the amount of physical exertion necessary in the process of raising and lowering the funnel; no method clean which permits of the possibility of soiling the patient and things about him, and surely no method can be more efficacious than one which permits of the regulation of the in-flow and the out-flow of water, as does the Leube-Rosenthal method. Yet Herschell, though

he considers the apparatus very admirable in the hands of a practiced operator, says it is "too complicated for use in general practice, as almost the skill of a prestidigitator is required to properly manipulate the taps," and then proceeds to describe his "Three-way Tap," a truly complicated procedure. Riegel prefers the 500 cc. funnel, and describes the Leube-Rosenthal method as one applicable only in auto-lavage, which he condemns on general principles. Gillespie describes the method, recommending it in auto-lavage only. Reed recommends the funnel method and warns his readers against procuring "any of the complicated apparatus described in the books" as "troublesome and unsatisfactory." Boas, on the other hand, considers it a most valuable procedure, and uses it in his polyclinic work altogether. "The raising of the big funnel is quite troublesome," says Einhorn, "and I therefore prefer to use in my own practice the Leube-Rosenthal apparatus, which I consider the best means of washing out the stomach." Hemmeter does not recommend this method, but describes one of his own with a continuous current. The continuous current, in my opinion, defeats the chief object of gastric lavage, viz., the elimination of the rugæ, and thereby the removal of mucus and débris from the walls of the stomach.

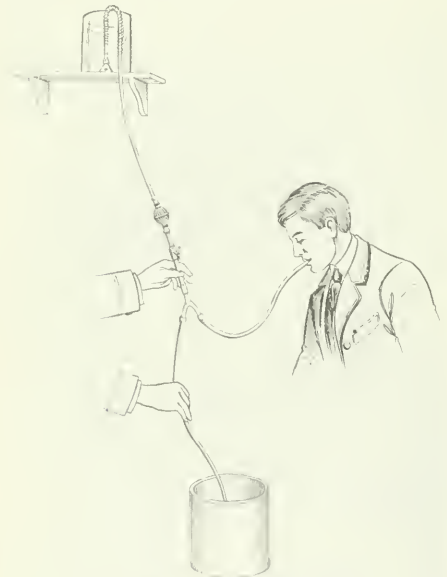


Fig. 2.—Portable gastric lavage outfit.

Strictly speaking, the complexity or simplicity of a method depends not so much on the apparatus used as on the number of movements required to carry out the procedure. In mechanics that appliance is considered simplest and most efficacious which requires least manipulation.

The Leube Rosenthal method consists of a large graduated irrigator, to which is connected a Y-shaped tube, to one arm of which the stomach tube is attached, and to another an outflow tube to a bucket below. Clamps are provided on the arm of the tube leading from the irrigator to the Y, and the one leading to the waste bucket. By manipulating these clamps water is permitted to run into and out of the stomach at one's pleasure.

During the past six years I have employed in my office a modification of this method, as indicated in Figure 1, and it has given me such complete satisfaction that I have discarded absolutely the funnel method, as comparatively impractical and unwieldy. It will be seen that we employ here a double irrigator—not because of its necessity, but because of the occasional desire to use two solutions; as, for instance, nitrate of silver and sodium chlorid. The irrigators are so stationed that they may be readily filled from the water tap. But one clamp is necessary, and that one to stop the flow from the reservoir. The operator stands by the side of the patient and simply manipulates *with his fingers* the tube leading from the reservoir and to the waste bucket; thus regulating the amount of water permitted to flow into the stomach from the graduated irrigators. By compressing the tube leading to the bucket and releasing the one leading from the irrigator, the water flows into the stomach, and on compressing the tube leading from the irrigator and releasing the one to the bucket, the water flows out of the stomach.

For a long time I employed this method in my office and the funnel arrangement when called on to use lavage at the residence or hospital, because of the impracticability of transporting an irrigator. It occurred to me, however, that these same principles might easily be applied to a portable outfit, and the results of the application of these principles are shown in Figure 2. In lieu of the irrigator, this outfit includes a lead sinker, a wire spiral—through which the tube is passed to prevent its collapsing on the side of the vessel—and a small valveless bulb. This outfit may be employed by placing a bucket or pitcher on a mantel or shelf over the patient's head. The flow of water is quickly started by closing the clamp and compressing the bulb two or three times, and after the water starts flowing the procedure is the same as that described above.

This method has been found very useful, too, in producing suction in those cases in which the stomach contents are not readily obtained through expression alone. By releasing both tubes and permitting the water to follow the line of least resistance, flowing rapidly from the irrigator into the bucket below, suction is produced in the tube within the stomach and the contents are readily withdrawn. When the contents are seen to appear at the Y the flow of water may be interrupted by closing the clamp. The stomach tube is then detached and the contents are withdrawn into another vessel. This suction is of such a gradual nature that the contents are more readily obtained than by the use of a bulb or bag.

The chief advantages that may be claimed for this method of gastric lavage are (1) its simplicity; (2) its portability, the whole occupying no more space than the ordinary tube with funnel; (3) but one person is required to manipulate it, and this may be done by a competent nurse or assistant, (4) a large amount of water may be used in a very short period of time without that constant trouble of raising and lowering the funnel and handling a heavy vessel full of water; (5) the removal of the stomach contents is facilitated through suction if desired.

4319 Lindell Boulevard.

A NEW SUPPOSITORY FOR THE MEDICAL AND SURGICAL TREATMENT OF THE NASAL CAVITIES.

EDWARD BAUM, A.B., M.D.

Formerly Assistant Resident Surgeon, Maryland General Hospital; Late Assistant in Surgery, Baltimore Medical College, Baltimore.

BALTIMORE.

Specialists in nose and throat work, especially the former, generally desire to render the effects of applications made to the nose or throat of longer duration than is usually the case with the swab, spray, nebula, ointment, or insufflation.

It is to this end that I have devoted much time and attention, the result of which I desire to submit for consideration.

The shape of the nasal suppository, which I present, conforms to the nasal cavities (Figs. 1 and 2). It is an oblong, oval-shaped body. The inner surface is flat (Fig. 2); the outer one is irregular (Fig. 1). The distal end is rounded and has a handle-shaped proximal end. The outer surface approaching the turbinates is irreg-

ular, with two longitudinal oval ribs corresponding to and fitting into the meati (Fig. 3); the lower rests on the floor of the nose and adapts itself to the inferior meatus. The upper approximates itself to the middle turbinate. These two ribs run parallel the length of the body of the suppository, and join each other at the interception of the body with the neck of the handle, thus forming a pocket or sulcus. Between these two longitudinal oval ribs is a long trough-shaped depression, open at its distal end and terminating in the sulcus, which approximates and admits the inferior turbinate. Immediately above the upper longitudinal rib

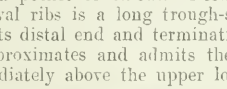


Fig. 1.—Suppositories, outer surface. L., left; R., right.

is another but smaller trough-like groove extending the whole length of the upper rib in which the middle turbinate rests and which continues upward, enveloping the middle turbinate. It then diminishes to a very thin edge, terminating two-thirds distance from the floor of the nose, and extending downward continuous with the septal surface.

The inner septal surface (Fig. 2), from above downward, is flat and smooth, and is interrupted in its continuity by a small oval projection or double-curved rib lying longitudinally from the handle to the oval end, separating (one-third above and two-thirds below)

Fig. 2.—Suppositories, inner or septal surface. L., left; R., right.

the suppository from the septum. This rib or narrow double-curved projection is the only point in contact with the septum, dividing mechanically the current of air, thus permitting free ingress and egress of air in breathing. It also serves to maintain the suppository in position, keeping in apposition the surface of the opposite side, and continually in contact with the turbinates, besides filling in the meati.

The handle-shaped end permits a secure grasp in introducing the suppository, and when in position the handle rests on the inner surface of the lobe of the nose and prevents its expulsion.

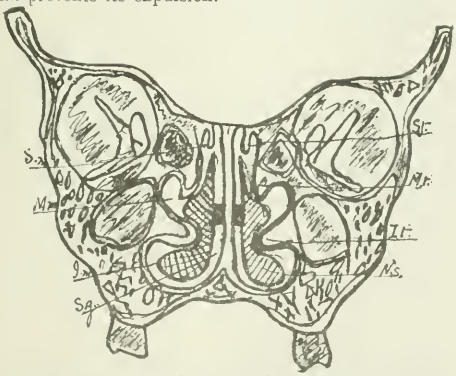


Fig. 3.—Cross section. S., septum; S.m., superior meatus; M.m., middle meatus; I.m., inferior meatus; Sg., air space; N.s., nasal suppository; I.t., inferior turbinate; M.t., middle turbinate; S.t., superior turbinate.

The distal end is rounded from above downward, and is irregular from side to side; it enters the nostril first and is so shaped as to facilitate its introduction.

The forms and conditions in which the nasal suppositories have been used are as follows:

First. The insoluble, unmedicated form in the manner of an internal splint for simple fracture of the nose.

Second. The insoluble form, medicated (antiseptically), as in the first instance with complications, the result of trauma, to maintain the internal conformity of the nasal cavities.

Third. The soluble or melting medicated form, the effects of which by its mere presence in the nose is of a dynamic nature. In relaxed, turgent, flabby turbinates, this effect is prominently noted, causing contraction and retraction immediately. This effect is temporary, but when astringents are incorporated the effect is prolonged.

Fourth. The soluble medicated form; any formulas or combinations can be incorporated for special treatments. Any of the usual sedatives, stimulants, depletives, astringents, antiseptics, anesthetics, deodorants, mild caustics, and escharotics can be combined in a spe-

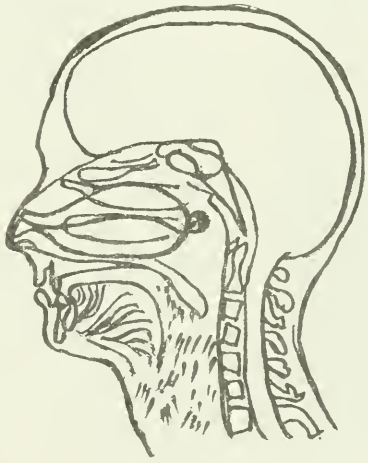


Fig. 4.—Nasal suppository *in situ*.

cial formula as the case may be and for the results desired.

ADVANTAGES.

Advantages experienced with the soluble medicated form: 1, the simplicity with which they can be introduced; 2, the length of time in which the medication can be applied; 3, the melting of the suppository at body temperature, thus setting free its medicant, which lasts from six to eight hours, constantly medicating the affected parts, besides affording a splendid protection against infection; 4, free bathing at all times; the septal surface is the last to disintegrate, this being provided for by the air-spacing between septum and suppository; 5, the suppository can be introduced at any time of day or at bedtime; 6, after surgical operations, this furnishes a splendid dressing; by its constant pressure it prevents oozing and facilitates removal of accumulations in subsequent dressings; 7, it is a valuable protection for mucous membranes from all irritating inhalations of dust, grit, acid fumes, etc.

FORMULAS.

The three formulas below have been used for their respective conditions and good results have been noted.

For catarrhal conditions:

R. Olei cassia.....m. v
Olei eucalypti
Olei gaultheriæ, āā.....m. vii
Camphoræ
Menthol, āā.....gr. iv
Thymol.....gr. iii
Olei theobromæ q. s. ad 3i

M. Ft. suppositories No. xii. Sig.: Insert one in each nostril at bedtime.

For hay fever:

R. Ext. suprarenal
Hydrastini, āā.....gr. i
Camphoræ monobromatis.....gr. xxiv
Menthol cryst.....gr. x
Antipyrini.....gr. xv
Resorcini.....gr. v
Olei theobromæ q. s. ad 3i

M. Ft. suppositories No. xii. Sig.: Insert one in each nostril any time of day or at bedtime.

For acute coryza:

R. Olei cassiæ.....m. ii
Olei anisæ.....m. iii
Olei thymæ.....m. iv
Olei eucalypti.....m. iii
Phenol
Camphoræ
Menthol, āā.....gr. iii
Olei theobromæ q. s. ad 3i

M. Ft. suppositories No. vi. Sig.: One suppository to be inserted in each nostril during the day or at bedtime.

1421 McCulloh Street.

A CASE OF HYPERTROPHY OF THE BRAIN.

JAMES. H. HABERLIN, M.D.

PAWTUCKET, R. I.

Patient.—Matthew B., aged 2, born in U. S.

Family History.—The father, an alcoholic, emotional and excitable, died just after patient's birth, aged 52. Two years before the patient's birth, the father had a painless, nonitching eruption on his legs, thorax and abdomen, and at the same time lost most of his hair and complained of lancinating pains in his head and extremities. The mother was 35 years old when the patient was born. She has always worked hard, always drunk alcoholic stimulants and, of late years, to excess. She married at 18 years of age and has seven living children and one abortion. The second child was born at eight months, lived five hours, and died in convulsions. The fourth born, now eleven years old, is a high-grade imbecile. The abortion was probably due to syphilis.

Previous History.—The patient, the last born child, was delivered with forceps. The head was somewhat larger than the heads of the previous children were at the time of their birth. The child cried as lustily as any of the previous children, and, excepting the comparatively large size of the head, was apparently normal. At three months his mother noticed a disproportionate increase in the size of his head, which continued until his death.

Present Illness.—I saw the baby Feb. 10, 1906, at eight o'clock in the evening. The first symptom that appealed to me was the large size of his head. Noticing a papulo-squamous rash on the forearms and face of his mother, I thought the case very probably one of chronic hydrocephalus of syphilitic origin. The patient had been seized with an epileptiform paroxysm previous to my coming, the mother said, and had just become profoundly prostrated, with twitchings of his face and hands. When I saw him he was comatose, but tossed his head from side to side, grasping in a purposeless way from time to time at things within his reach, and occasionally emitting the hydrocephalic cry. Later the coma deepened, the vacillations of the head gave way to convulsive twitchings of the facial muscles, the movements of the arms and hands became athetoid, and the breathing approached a Cheyne Stokes character. The pupils were asymmetrically dilated and did not respond to light. The tongue was coated with a grayish-brown fur and the teeth were covered with sordes. The pulse was too rapid and feeble to be counted. There was no rash on the body, but over the right, external femoral condyle was a ham-colored, circinate spot as large as a 25-cent piece. The lungs were normal, the abdomen was tympanitic, there were no symptoms of rachitis. The body and extremities were emaciated. Kernig's sign and Babinski's reflex were absent. The knee-jerk and the ankle-clonus were exaggerated.

The head resembled hydrocephalus of the average type. It was pyramidal in shape on the frontal aspect, symmetrical in its enlargement and presented that prominence at the root of the nose which Holt says is seen in no other form of enlargement of the head than hydrocephalus. There was no bulging of the eyes, nor did the interocular distance seem to be increased. The anterior fontanelle was patent and about two and one-half inches in diameter, but there was no separation at the sutures.

The patient died during a recurrence of the epileptiform paroxysm about three hours after the first seizure.

Autopsy.—With the assistance of Drs. W. G. Dwinell and O. G. Ingham, the autopsy was made the following day. The calvarium was removed in a wedge-shaped piece by sawing clear through. The dura was densely adherent to the bone and its removal required great force. The sutures were firmly ossified and the anterior fontanelle was covered with a dense membrane. The meninges were enormously thickened and adhered as one membrane. The superior longitudinal sinus was obliterated. The meninges did not adhere to the brain. The convolutions were not flattened. In removing the brain the cranial nerves were found markedly degenerated. The third, fourth, seventh and eighth nerves were torn easily by pressure of the back of the scalpel. The right occipital lobe was injured by the saw in cutting through the bone. The area of the brain substance thus exposed was pultaceous. The brain, as a whole, was apparently symmetrically enlarged. Very little fluid escaped as it was lifted from its bed. There was nothing especially significant in the thorax or abdomen.

Measurements.	Patient.	Normal Child, 2 Years.
Circumference of head	55 cm.	47.2 cm.
Circumference of thorax	38 cm.	48.4 cm.
Length of body	78 cm.	82.8 cm.
Weight of brain	1712 gm.	1000 gm.

The brain was placed in 80 per cent. alcohol for 9 hours, and later in successive changes of 95 per cent. alcohol. We attempted to examine the brain by Virchow's method, 43 hours after the child's death. Immediately below the surface we found the matter so pultaceous that a satisfactory demonstration was impossible. The following facts, however, were observed: The membranes were not adherent to the brain substance at any part; there was no flattening of the convolutions, no neoplasm, no disproportionate increase in the size of the ventricles. The various foramina were patent. The gray and white matter were developed proportionately.

I have not attempted an exhaustive research of the literature of this subject, but have simply reported this case to add to the literature of an apparently very rare condition, for in the works at my immediate service, among them those of such men as Dana, W. G. Thompson, Potts, Osler and Tyson, I find no mention at all of hypertrophy of the brain.

The case presented no signs by which hydrocephalus could be excluded. If it were not that we were fortunate in obtaining consent for an autopsy, we should yet believe the case to be one of hydrocephalus. The question naturally arises, how many cases like this with the cardinal symptoms of hydrocephalus have been incorrectly diagnosed.

Incentives to Greater Effort.—M. A. Austin, in *Central States Medical Magazine*, states that losing a case, having complications arise, or having unexpected difficulties to overcome, are reasons for constant study, greater care and more vigilance.

A CASE OF POISONING FROM VERONAL.

JOHN GERMANN, M.D.
BROOKLYN, N. Y.

Patient.—E. G., aged 22, male, a school teacher, unmarried, was found in a state of profound coma from which he could not be roused and died 79 hours afterward.

History.—The attending physician makes the following statement: "E. G., a young man of intelligence and a patient of over two years' standing, came to my office on the afternoon of January 13 and stated that he was suffering from insomnia. I advised against the use of any drug, telling him that the drug habit was worse than the rum habit. I advised him to give up a night class he was teaching and to try a hot bath at bedtime. He said that he could not give up the class and that he got home too late to take a bath. After some further talk I was about to write for a simple sedative when he asked me if I would not write for veronal, as his sister was taking it with marked benefit. I said that I had not used the drug, but that Merck's preparations were standard. The statement in the newspapers that I asked him how to spell the name of the drug is untrue. He obtained on my prescription a vial containing fifty 5 gr. tablets, with directions to take two tablets at bedtime. There were no directions to repeat or to increase the dose. So far as is known, he took none at bedtime. According to his father's testimony he went to his room at 9:30 Sunday morning and at 12:30 was found sleeping so soundly that he could not be roused. The vial was empty and none of the drug was found." The patient is supposed to have become impatient and to have taken from 200 to 250 grains instead of waiting for one or two doses to take effect.

Symptoms.—When found, four hours after a hearty breakfast, the pulse was 90, respiration 24. Half an hour before death, 79 hours later, pulse was 152, respiration 44, temperature 108.5. During the last 24 hours the respiration was irregular and stertorous and the man was cyanosed. The heart seemed the least affected; the pulse was of good quality till the last four hours.

Treatment.—Cathartic enemas were given and also high rectal enemas of hot saline solution. Coffee, caffein, diuretics, strychnin, oxygen, adnephrin, and saline solution by hypodermoclysis were all tried but without effect. After 24 hours, the urine contained albumin and a specimen 2 hours before death contained 33 per cent.

Autopsy.—The brain and all the organs were found deeply congested (but only *slight edema* at brain). The organs, especially the abdominal, were dark and the blood was chocolate colored. The stomach, especially, was greatly congested, with a hole 3 inches in diameter—caused by postmortem digestion.

Coroner's Verdict.—"E. G. came to his death on the 17th day of January, 1906, at 90 Norman Avenue, by cerebral congestion and edema, and nephritis caused by taking an overdose of veronal to produce sleep."

Remarks.—If any symptoms could be of an unusual character, I should judge they were the following: 1. Persistence of the coma for a period of 79 hours. 2. The fact that the pulse remained of a good character over such a period of time. 3. The gradual and steady rise of temperature from normal to 108.4 antemortem. 4. The increase of the respirations from 24 to 44. 5. The fact that cyanosis should appear so late in the case. 6. The presence of albuminous urine. 7. The intense cerebral congestion, found postmortem, and the very slight edema. 8. The discoloration of the organs—deep congestion, and the altered blood—dark chocolate color. 9. The intense congestion of the stomach, especially of the cardiac end, and the postmortem digestion of the large space of three and one-half inches in diameter.

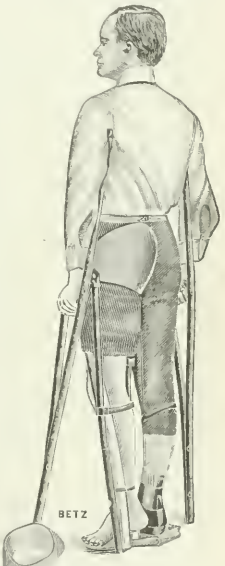
Concerning the manner of prescribing veronal, I can make no comments. The physician ordered 1 bottle of 5 gr. tablets of veronal (Merck). Dose 2 at bedtime. The dispensing druggist, not having a full bottle of 100 on hand, gave the young man 50 tablets. The only remedy, in my opinion, is to wash the stomach thoroughly if the case is seen within 2 or 3 hours after the ingestion of the drug.

A NEW EXTENSION SPLINT.

J. P. HETHERINGTON, M.D.
Surgeon for Pennsylvania, Vandalia, and Wabash Railroad and Union Traction Co.
LOGANSPORT, IND.

I am never called to treat a fracture of the hip or femur without feeling that I wish it could have been some other bone. Many methods of treatment have been tried, almost any one of which means that the patient must remain on his back for from four to six weeks. The pneumatic splint allows a patient to leave his bed, but the yielding air cushions do not give a stable point of extension and the splint is heavy. In bed the roll under the thigh and the rods down the back of the legs lack comfort.

Several years ago I studied the various methods of obtaining the upper bearing. Some surgeons used the perineum and others the axilla for the various extensions and crutch splints. I talked with the makers of artificial legs, and nearly all advised a hard, firm substance, slightly padded, for an artificial leg socket, so I decided that if a solid support were required to sustain the weight of the body it would certainly be sensible to have the same kind of support for a sustained extension of from five to twenty-five pounds on a broken leg. I tried the upper part of an artificial leg socket instead of the perineal band. Then I had half a dozen variously shaped hip and perineal bands hammered out of aluminum, until I finally succeeded in getting quite a comfortable hip-piece. This threw nearly all the weight on the ischium, almost entirely relieving the perineal pressure. The hammered aluminum, however, was brittle and would crack, so I had a light steel band made to fit the hip, and around this placed a shaped mold of fiber and leather. This made a splint that was easy, comfortable, and borne well day after day, but being constructed of steel and leather, it was heavy, and when permeated by various discharges its peculiar odor put it out of use.



I have made several unsuccessful attempts to have the splint cast of pure aluminum, but one maker after another gave it up until recently, when an expert patiently worked at it until he made a set of three sizes, both right and left. The medium size will fit nearly any ordinary person.

I had him make a "skeleton framework" consisting only of adjustable inside and outside rods and footpiece so that I could apply splints between or bandage around them (Fig. 1). Being lightly constructed of pure aluminum it is not strong enough to bear a heavy weight while walking on crutches, but a splint weighs less than four pounds complete. It will not rust, and being of solid metal it can be scrubbed or boiled. I have found it painful to use a bandage or pneumatic pad above the ankle for extension fastening, so I use the adhesive plaster along each side of the leg. The upper part, which I call a "hip housing," fits tightly. The broad thin metal is far more steady and comfortable than a narrow ring, and adds to the comfort in bed. While the pneumatic ring forms a thick pad and undesirably forces the upper fragment upward, the thin housing occupies almost no space between the hip and bed, assists in holding a short upper fragment inward, and, if padded underneath, helps to elevate the sacrum in guarding against bed sores. At the same time it is clear off the median line and aids rather than hinders evacuation of the bowels.

This seems to be another step toward making these patients more comfortable while obtaining the desired extension.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance
[*For other information see second page following reading matter.*]

SATURDAY, JUNE 30, 1906.

THE INDEX.

In spite of the fact that we have added additional pages in this issue, the index occupies so much space that we are compelled to omit some departments and to reduce the amount of space devoted to others. We do not hesitate again to call attention prominently to this index. We have repeatedly stated that the index to current literature, which occupies the greater portion of the space devoted to the whole index matter, is something entirely different to an ordinary index. It is an index to the current medical literature of the world, but especially to that of the United States. It must be used to be appreciated, and those who have occasion to look up subjects and who are not making use of it are urged to do so. It is not so complete in details as the *Index Medicus* or as the "Index to the Surgeon General's Library," but it will be found to have advantages over these, and peculiar to itself. The explanatory notes at the beginning of the departments should make its use easily understood. As usual, this index will be reprinted[1] in paper cover under the title, "Guide to Current Medical Literature." Included in this reprint will be the names of the journals and the titles of the articles, so that ready reference can be made without using The Journal.

THE EVOLUTION OF SPECIFIC THERAPY.

We are so accustomed to glorify the achievements of modern medical science that we sometimes seem to lose sight of the fact that great discoveries generally are the direct outcome of a gradual development which can be traced far back into the past. To many the discovery of antitoxins and the birth of the idea of a specific etiologic therapy of infectious and toxic diseases, so splendidly realized in the practical use of diphtheria antitoxin, probably appear to have little or no connection with the therapeutic conceptions and efforts of the past, whereas, in reality, in this particular instance, an objective point was reached toward which men had been striving with varying clearness of purpose for centuries and often, no doubt, in despair as to the desired outcome.

In the first place, it is of importance to note that the diseases now known to be infectious appear to have been regarded since the very beginning of history as representing reactions of the living body to special poisons and even in the earliest times epidemic infectious diseases were treated according to general principles similar to those that controlled the treatment of various obvious poisonings, namely, by means that were assumed or expected to destroy and to neutralize the morbific cause. Later, it is true, eliminative forms of treatment were introduced also. There are numerous isolated facts that indicate that the principle of immunization, both in the form now called passive, as well as in the active form, was recognized in very early times and even by uncivilized peoples. Thus, for instance, active immunization against snake-bites is said to have been practiced by African aborigines since time immemorial, and certain historical remedies of early European medicine contained parts of certain animals because those animals were known to be able to withstand poisonous substances. Amulets, the use of which persisted even into the modern era, were employed originally to ward off evil spirits capable of causing disease. Certain forms of amulets suggest efforts at immunization. This is especially true of those that contained poisons of various kinds and which were supposed to protect the bearer by habituating him to the poison. In the middle ages toad-amulets were held to be the best antidote to pest, and they were recommended particularly by Kirchner, one of the first to advocate a parasitic etiology of infectious diseases, because toads were held to originate from the same causes as the pest and were believed to contain in them the pest poison. Amulets were supposed to act also by virtue of a sympathy of poisons which attracted one another and thus to afford protection to the bearer.

In time the idea arose that a substance might be found which would be a universal antidote against the disease-producing poisons of all fevers and epidemics, and for this purpose the celebrated theriac, a mixture of at least 64 different substances, was introduced and used for centuries. Eventually, certain single substances came to be employed as specific antidotes in certain conditions, and the discovery in the sixteenth century that mercury is a specific against syphilis, together with the gradual differentiation of individual infectious diseases, led in the seventeenth century to systematic efforts to discover specific remedies for various infectious diseases, and the plan proposed was nothing less than to attack the special cause or poison of each disease. According to some, this poison was a chemical substance or ferment; according to others, minute organisms, such as worms and mites, later infusoria. Following the demonstration that the bark of the cinchona tree is or contains a direct antibody to the cause of malarial fever—the fermentum febrile—the great Sydenham boldly placed specific therapy as the ideal for medicine. Lange (1655-1701) was an early believer in the theory that infectious diseases are due to minute living things, and he advocated the use in treatment of these diseases of substances that arrest putrefaction or act as vermifuges. Rivinus also urged the use of anthelmintic and antiparasitic agents. It may be not without significance for later developments

1. This reprint is supplied at 50c a copy, or 75c a year.

that the value of antisepsis was early recognized in England, as shown in the following quotation from Francis Bacon: "It is an inquiry of excellent use to inquire of the means of preventing or staying putrefaction; for therein consisteth the means of conservation of bodies; for bodies have two kinds of dissolutions; the one by consumption and desiccation; the other by putrefaction. But as for the putrefactions of the bodies of men and living creatures, as in agues, worms, consumption of the lungs, impostumes and ulcers, both inwards and outwards, they are a great part of physic and surgery."

We must pass over without discussion the influence of the introduction of inoculation of smallpox, practiced for centuries in China and elsewhere, and of the discovery by Jenner of vaccination. In the beginning of the nineteenth century Eisenmann, in Germany, outlined with great clearness the necessary steps in order to discover by way of clinical observation and experiment specific curative agents for the individual infectious diseases, the particular aim being to find substances that would kill the organisms of the contagion without injury to the patient. These necessarily incomplete references will serve to emphasize at once the antiquity as well as the gradual growth in precision of the conception of a specific therapy aimed directly against the essential morbific agent. So far as a small number of diseases is concerned, the problem was solved finally by the discovery in our day of antitoxins, and as for the discovery of specific agents against the many diseases still without direct curative treatment at no time has the outlook been so promising as now.

PRESIDENT-ELECT BRYANT.

Dr. Joseph D. Bryant, President-elect of the American Medical Association, was born in East Troy, Wis., March, 1845, and was graduated from the Bellevue Hospital Medical College in 1868. He has held many important positions, and is now professor of principles and practice of surgery, operative and clinical surgery at the University and Bellevue Hospital Medical College, New York; visiting surgeon to St. Vincent's and Bellevue hospitals, etc. He has long held a high position both as an operator and as an authority on surgical subjects. His "Operative Surgery" took front rank as a standard text-book as soon as it was published, and has become more of a favorite with each edition. His miscellaneous contributions have been many and varied, and always of the highest order.

But it is not alone as a surgeon, or as a writer, but for what he has accomplished in a broader way for his profession, that Dr. Bryant is honored and loved. Without ostentation or display he has been actively interested in the various endeavors the American Medical Association has been making for the betterment of conditions among medical men. To him great credit is due for bringing together the profession of the Empire state and for terminating the differences that had existed there for nearly a quarter of a century. It was during his presidency of the New York State Medical Association, in 1899, that the movement really had its start, and while he was president of the Medical Society of the State of New York he had further opportunity, but both the opportunity and the right man were necessary; and he proved to be the right man.

It was certainly a fitting recognition of his services that the reorganized Medical Society of the State of New York elected him as its first president under the new order of things, although he had just presided for a year over the society.

Dr. Bryant is a genial companion, and his society is sought by men high in other professions. He is a practical man, and as such one of the most successful practicing surgeons in the country. Those who know him well enough to appreciate the energy and enthusiasm, and withal the good judgment which he puts into everything he undertakes, will agree with us when we state that the American Medical Association has honored itself by electing Dr. Bryant its president as much as it has honored Dr. Bryant.

VARIABLE TEMPERATURE THERAPY OF FEVER.

One of the interesting developments in modern therapeutics is the use of fresh air in the treatment of tuberculosis and of all the other diseases that are related to it in their effects on temperature and general health. As the result of the success of these newer methods there has come to be a very general impression that fresh air can also be of great service in the treatment of all febrile affections. It used to be considered necessary that patients suffering from tuberculosis, especially if the disease were running a febrile course, should be kept in an equable temperature without any danger of being affected by draughts or by air that came directly from outside the house. This has been recognized as one of the mistakes of the older method of treatment and, as a consequence, there is coming to be a general impression that other fevers, no matter what their origin, may also be best treated so far as possible in the open air.

The ideal of house and hospital ventilation has come to be that an abundance of fresh air should be supplied, but that this air should always be of a definite temperature, not much below 70 degrees, in order to avoid the supposed dangers of draughts and the exhaustion that might be due to radiation of heat. Is it not possible, however, that this ideal has been founded on a mistaken notion? Under ordinary circumstances, healthy individuals have been accustomed to live under conditions of temperature that represent a variation of from 20 to 40 or more degrees Fahrenheit during the course of the day. This variation of temperature acts as a stimulant to various metabolic processes within the body. It now seems manifest that the reactions by which disease is overcome are to no small extent dependent on these stimulations of metabolism consequent on variations of

temperature. Dr. Burney Yeo has called attention in his book on "The Therapeutics of Mineral Springs and Climates" to the fact that, while a mild equable climate without noteworthy variation between day and night temperature is good for patients suffering from catarrhal symptoms of various kinds, such a climate is only conservative, but never actively curative. It lacks the supreme quality of natural stimulation that is so effective for increasing resistive vitality. Tuberculous patients, Yeo says, do not improve unless there is a daily variation of at least 20 degrees of temperature; hence, it is that, while consumptive patients are often very comfortable along the northern shores of Africa, they do not improve to such a degree as to be able to live out of that climate. On the other hand, it is well known that at a considerable altitude, where the changes between night and day temperature are marked and always represent from 30 to 50 degrees of variation, consumptive patients, according to clinical experiences, are more likely to get well and even to be able to resume their previous occupations than anywhere else.

Certain it is that the ordinary healthy individual would not find himself under favorable circumstances for continued good health in an absolutely changeless temperature. It is a little bit like an absolutely unirritating diet. A certain amount of irritation of the gastrointestinal tract is needed in order to maintain peristalsis. In the same way, the irritation of the skin consequent on variation of temperature stimulates the vasomotor mechanism of the capillary system of the skin and so proves excitant to metabolic activity through the increased circulation. It is in the exhausting processes of continued fever that such stimulation is most needed. The suggestion made by Dr. Walter James at the recent meeting of the Association of American Physicians at Washington[1] that all fever patients should be given the benefit of this important therapeutic factor calls attention to what has been a much neglected feature of physical therapy.

There seems to be considerable clinical experience already at hand to justify the employment of this method of treatment quite apart from recent advances in phthisiotherapy. In New York at the Presbyterian Hospital and at the Fordham Hospital the treatment of pneumonia in the open air, the patient, protected only by a tent even in inclement weather, it is claimed, has given better results than the most careful housing of patients. A distinguished English clinician declared that if he had pneumonia himself he would prefer to be treated under the trees of a park than in the best-appointed hospital of any large city in the world. Pneumonia is one of the diseases in which owing to the inflammation in the lungs it might be thought that warm air would be of more benefit than cold air, yet clinical experience is all against such an impression. In other fevers there is no doubt that patients are much less restless, sleep far better at night and need fewer sedative drugs, and these are practically always depressant to some degree, if they are kept directly in contact with the outer air than otherwise. In fact, it is this feature of the cases that is particularly noteworthy. Sleep depends, so far as we know anything of its physiology, on cerebral anemia, and this does not readily occur unless the blood vessels of the skin have been stimulated by variations of temperature during the day. When cold air baths can be given to typhoid-fever patients there is very little need of cold water baths, and even cold sponges need not be employed so frequently as is ordinarily the case. Cold air is much less depressing than cold water and does not require for its application either the apparatus or the disturbance of the patient necessary for cold bathing.

It would seem, then, that cold air should be admitted much more freely than has been the case, especially to fever patients. It is well known that children suffering from surgical tuberculosis improve rapidly and sleep much better in a room so cold that nurses and physicians need to wear gloves and special wraps in order to keep comfortable. There has been entirely too much dread of cold air and of the effect of draughts. Draughts can only cause congestions when patients' temperatures are already somewhat subnormal. With a temperature above normal there is apparently no danger of the taking of cold from the presence of cold air, while there are apparently very desirable therapeutic effects quite in line with our recent advances in natural and physical therapy that may thus be obtained. Much prejudice needs to be overcome before sufficient clinical experience to determine its value can be secured, but it seems well worth trying faithfully and diligently.

1. The Journal A. M. A., June 2, 1906, p. 1722.

PRIMARY TUMORS OF THE URINARY BLADDER.

Primary tumors of the urinary bladder are relatively rare. Their period of greatest prevalence is between 60 and 70. Men are the victims far more commonly than women. As with new growths in other situations, no special cause has been definitely established, although the predisposing cause is considered generally to consist in some form of irritation. For the purpose of eliciting certain clinical data and of investigating the pathologic anatomy of the simple epithelial tumors of the bladder, also known as papillomata, Dr. Lincoln Davis[1] undertook an analysis of 41 cases observed at the Massachusetts General Hospital during a period of 28 years. In 37 of these the tumor was removed at operation and in 4 it was obtained at autopsy. As the result of clinical and histologic study of these specimens he reaches the conclusion that stone in the bladder is not an etiologic factor of importance in the causation of the tumors under consideration. The condition of the underlying bladder wall in regard to epithelial infiltration is the most satisfactory and reliable guide in the determination of the benign or malignant character of papillary epithelial tumors of the bladder. If the foregoing is

1. Annals of Surgery, April, 1906, p. 556.

accepted as the differential test for these growths, then will the benign forms commonly called papillomata be found at least to equal if not to outnumber the malignant, the papillary carcinomata. Recurrent epithelial tumors are not necessarily malignant. Papillary tumors of the bladder, proved to be histologically benign, may rapidly lead to a fatal result if left alone. Surgical intervention at the proper time in the case of pedunculated papillary tumors of the bladder offers a fair chance of long immunity, if not of permanent cure. The method of surgical intervention to be preferred in these cases is excision of the tumor entirely, with a margin of bladder wall at its base, including mucosa, submucosa and muscularis in part; the section need not penetrate the entire thickness of the wall. In this way a beginning epithelial infiltration of the base, if present, may be circumvented; or if it is not present, the knowledge of the fact is of great value in the important matters of diagnosis and prognosis. The defect in the bladder wall should be closed with sutures, which will at the same time control hemorrhage. The gravity of the operation is not appreciably increased by this procedure.

VIRTUE ITS OWN REWARD AT SAN FRANCISCO.

During the late earthquake troubles in San Francisco the physicians of that city, hard-hit as they were by the catastrophe, were called on as a class more than any other citizens to use their special knowledge and skill in the emergency conditions that resulted. It seems that while others who rendered special services, militiamen, mechanics, plumbers, nurses, etc., received pay for their services—and no one grudges it—there is no provision whatever for any recompense to the physicians. Their services were appreciated as inestimable during the calamity. But the adjective applies also to their compensation and, therefore, the problem is dropped as unsolvable. The general relief committees seem to have no means to pay for their services or are so tied up by legal restrictions that they could not do it even if they had the means. The justice of this is sufficiently obvious, but it is the way things go. As Governor Pardee, who can appreciate the physician's side of the question, says, the medical men of San Francisco were probably the greatest sufferers of any class of citizens, and when the history of the disaster is written "the devotion of the physicians of San Francisco to their duty will receive the prominent place that it deserves." It may seem small comfort to say to a man who is in need that virtue is its own reward, but it may be that that is all the consolation that can be given to the San Francisco physicians at the present time. It is really something, however, to feel that one has acted on the best traditions of his profession and has not dishonored the flag.

Treponema Pallidum and Mercurial Treatment of Syphilis.—*Spitalul* contains an article in the last issue for 1905 describing research on the treponema in syphilitic lesions under mercurial treatment. The number found in the lesions always decreased as treatment progressed, dropping from five or six in each field to one or two before complete recovery. An abstract in the *Muench. med. Wochft.* states that the mercury was injected in the buttocks in the form of 0.03 gm. sublimate every fourth day.

Medical News

CALIFORNIA.

Hospital Opened.—The Whittier Hospital was formally opened with a reception, June 4.

Bequest.—By the will of the late Bartlett Doe of San Francisco, the Fabiola Hospital, Oakland, and the Hospital for Children each receives five-eightcenths of 1 per cent. of the estate, which is valued at more than $2,000,000.

Leper's Home Burned.—By order of the mayor of Santa Ana, the house in which a leper has been living in that city was burned. Three adjoining buildings and vegetable gardens, where the leper had worked, were also destroyed.

Lane Lecture Course.—Cooper Medical College announces that the course of Lane medical lectures will commence August 20, and will continue during five days of the week, two lectures being delivered daily. The lecturer is Dr. John C. McVail, D.P.H., Glasgow, Scotland, and his subject is "Practical Hygiene, Epidemics and Preventive Medicine."

Medical School Rearrangement.—The University of California has transferred from San Francisco to Berkeley all instruction in the first two years of the college of medicine. Students desiring admission to the medical department of the university must have completed certain studies in physics, chemistry, zoology, German and French, which ordinarily require two years of residence at a university or college of good standing. The first two years of the strictly professional work is devoted to anatomy, physiology and pathology. As heretofore, the work of the last two years of the medical course—the clinical years—will be carried on in San Francisco in the affiliated college buildings. The dispensary, heretofore situated in what is now the burned district of San Francisco, will now be established in the medical building.

ILLINOIS.

New Hospital.—A private hospital has been established by Dr. William Blender in Carthage.

Physician Acquitted.—Dr. Robert Emery, Peoria, accused of manslaughter by a criminal operation, was acquitted by the jury, June 8.

Alleged Smallpox.—Dr. Emil Lofgren, health officer of Rockford, has investigated the cases of alleged smallpox at Rockton, and states that the disease is not smallpox.

Medical Fraternity Election.—At the meeting of the Medical Fraternity of Jacksonville, May 8, Dr. John W. Hairgrove was elected president, and Dr. Emma Grace Dewey, secretary.

Smallpox.—A number of cases of smallpox have been reported from Hurricane Township, Fayette County, near Bayle City, and Dr. J. C. Westervelt, inspector for the State Board of Health, has been sent to make an investigation.

Resolutions of Regret.—At a meeting of the Bi-County (Iroquois-Ford) Medical Society, June 5, resolutions were unanimously adopted setting forth the long and honorable career of the late Dr. Daniel L. Jewett, Watseka, first president of the society, and deploring his decease.

Loan to Hospital.—The Oak Park Hospital and Training School for Nurses, of the Sisters of Misericorde, has obtained a loan of $100,000 for 15 years, at 4½ per cent., from the parent organization in Montreal, secured by a mortgage on its property in Oak Park.

Chicago.

Hospital Enlarged.—Grace Hospital, at Sangamon Street and Jackson Boulevard, has been enlarged so that its former capacity is doubled. It now can accommodate from 60 to 70 patients.

Personal.—Dr. Casey Wood was granted the *ad eundem* degrees of M.D. and C.M. by McGill University, Canada, for "services to medical science."——Dr. and Mrs. B. Fantus have gone to Germany to spend the summer.

Clinical School Election.—At the annual meeting of the directors of the Chicago Clinical School, Dr. W. T. Eckley was elected president, Dr. George F. Hawley vice-president, Dr. Arthur M. Corwin secretary and Dr. John S. Nagel treasurer.

Fourth of July Warning.—The *Bulletin* of the Department of Health quotes from the editorial in THE JOURNAL on this subject, and speaks of the improvement of the tetanus situation in the past two years. It urges that all Fourth of July wounds, no matter how caused or when caused, should be kept open to the air until seen by a physician.

Health Conditions.—The death rate last week was equivalent to an annual death rate of 10.76 per 1,000 of population.

The average June rate for 10 years has been 13.04. The hospital population at the close of the week was the lowest in the previous three months. Pneumonia patients are fewer than since the close of last October. Typhoid is less than for many weeks.

Ice Very Good.—The *Bulletin* of the Department of Health reports that of the 167 samples of ice analyzed since Feb. 1, 1906, only 1.5 per cent. were below standard. This is the best showing for years. Although the ice is very good, the methods of handling are reported to be highly objectionable, and a number of dealers and railroads have been notified that the unsanitary conditions must be immediately remedied.

Cocain Sellers.—C. A. Montgomery, a druggist, accused of the illegal sale of cocain and morphin, was fined $100 and costs, June 12.——J. H. Montgomery, a druggist, accused of a similar offense, was discharged on a technicality.——A. Lane claimed that his clerk had sold the drug, and a warrant was issued for the arrest of the clerk.——The case against Charles Cunradi was continued until June 18.——A. C. Brendeke was fined $50 and costs, June 14, for the illegal sale of cocain.

Hospital Asks Injunction.—The Chicago Union Hospital, through its president, has asked the Circuit Court to restrain the building commissioner and the chief of police from interfering with the erection of a new hospital building at Wellington Avenue and Dayton Street. Work on the structure had been ordered stopped by the commissioner of buildings, on the ground that the building was being erected in violation of a city ordinance which forbids a hospital within 400 feet of property used for public school purposes.

Chicago Medical Society.—At the annual meeting of the Chicago Medical Society, June 20, the medicolegal committee made an exhaustive report, showing that 77 suits or threatened suits for malpractice had been brought before it, but that only one judgment had been rendered against a member of the society, and that that had since been set aside. Furthermore, that not a case had been decided or a final judgment rendered against a member of the society for malpractice since the existence of this committee. The organization committee reported that during the year 248 new members had been added to the society, and that one new branch society had been organized, known as the Northwest Suburban branch, District No. 12. Since 1890 the membership of the society has increased from 940 to 1,948. The committee on permanent home reported that the Crerar Library had agreed to furnish quarters for the society as soon as its new building is ready. After the passage of a vote of thanks to the active officers for the efficient service rendered, the election of the following officers was announced: President, Dr. George W. Webster; secretary, Dr. Robert T. Gillmore; counselors for three years, Drs. William A. Evans, Charles S. Bacon, Frank Billings, Louis L. McArthur and Fernand Henrotin; alternates for three years, Drs. William E. Quine, Henry F. Lewis, Winfield S. Harpole, Brown Pusey and Theodore Tieken; alternates for one year, Drs. John E. Rhodes, Heman M. Brown, Jacob F. Burkholder, Frederick Menge and Homer M. Thomas.

INDIANA.

Fined for Illegal Practice.—Robert T. Gamble, Princeton, has been fined $25 for practicing medicine without a license.

Smallpox.—Four cases of smallpox have been reported to the secretary of the Jay County board of health, from Dunkirk. ——Two cases have been reported from Shelbyville.

Disease and Death During May.—In the monthly Bulletin of the State Board of Health, rheumatism was reported as the most prevalent disease. Tonsillitis was reported as most prevalent in the preceding month, an interesting fact in connection with the relationship between tonsillitis and rheumatism. Whooping-cough prevailed unusually. On the whole, the health of the state was better in May than in the preceding month, but no better than in the corresponding month last year. Smallpox still prevails; 112 cases were reported from 14 counties, with no deaths. Tuberculosis caused 376 deaths, including 37 fathers and 73 mothers, all between the ages of 18 and 40. They left 226 orphans under 12 years of age. The disease invaded 372 homes. Diphtheria steadily decreases, causing only 8 deaths. Antitoxin is certainly the principal reducing agent. Cancer caused 128 deaths. About 70 per cent. of all cancer deaths are of women over 50 years of age. One hundred and fifty two deaths were caused by violence, an increase over the preceding month of 28 and an increase of 112 over the corresponding month last year. Of the deaths by violence, 8 were murders, 25 suicides and the remainder accidental. Of the suicides 8 chose carbolic acid, 3 morphin, 4 potash and other poisons, 4 gunshot and 5 hanging. Of the accidental deaths, 14 were caused by railroads, 1 by trolley cars, 30 by crushing injuries, 11 by burns and scalds, 5 by gunshot, 13 by drowning, 5 by horses and vehicles, 12 by poisoning, 4 by lightning and the remainder in various other ways. The total number of deaths was 2,665, rate 11.9; the cities named presented the following death rates: Indianapolis, 16.3; Evansville, 13.6; Fort Wayne, 16.7; South Bend, 16.1; Terre Haute, 21.8; Muncie, 14.8. The average death rate for all cities was 15.2; for the country, 9.8.

MAINE.

Asylum Changes.—Dr. Ezra B. Skolfield, second assistant superintendent of the Eastern Maine Insane Hospital, Bangor, has resigned to enter practice at Charleston. Dr. Forest C. Tyson, Boston, has been appointed successor to Dr. Skolfield.

Many Years in Practice.—Of the 48 physicians who were in practice in Somerset County forty years ago only four are now living, namely: Drs. David S. Hunnewell, Madison; Sirvilla A. Bennett, Norway; Ivory Lowe, Canaan, and Llewellyn Brown, Norridgewock.

Assignments of Medical Officers.—The following assignments of medical officers have been made: To the First Infantry, Major and Surgeon Bial F. Bradbury, Norway, and Captain and Assistant Surgeon Charles L. Cragin, Portland; to the Second Infantry, Major and Surgeon Edwin M. Fuller, Bath, Captain and Assistant Surgeon James F. Hill, Waterville, and Lieutenant and Assistant Surgeon Frederick A. Chandler, Addison; to the Naval Reserve, Lieutenant (j. g.) George H. Turner, Jr., Portland.

Maine Medical Corps.—Under general orders issued by the adjutant general, June 14, the medical officers of the National Guard of the State of Maine are organized as a medical corps, consisting of one surgeon general with the rank of colonel, two surgeons with the rank of major, two assistant surgeons with the rank of captain, two assistant surgeons with the rank of first lieutenant and one assistant surgeon with the rank of lieutenant (junior grade). The hospital corps is to consist of two first-class sergeants, six sergeants, twelve first-class privates and six privates.

Maine Medical Association.—The fifty-fourth annual meeting of the Maine Medical Association was held in Portland, June 13, 14 and 15, under the presidency of Dr. Randall D. Bibber, Bath. The venerable Dr. Alonzo Garcelon, Lewiston, 97 years of age, was the only charter member present. Dr. Walter E. Tobie, Portland, was appointed official reporter. The question of the adoption of the standard constitution for state societies, suggested by the American Medical Association, was decided in the negative by a vote of 45 to 44, as for its adoption a two-thirds vote was required. The annual oration was delivered by Dr. Charles S. Minot, Boston, on "Relation of Embryology to Medical Progress." The following officers were elected: President, Dr. Charles E. Williams, Auburn; vice-presidents, Drs. Charles D. Smith, Portland, and Oscar C. S. Davies, Augusta; censors, Drs. Henry H. Brock, Portland, Bertram L. Bryant, Bangor, Jasper D. Cochrane, Saco, Ellery M. Wing, North Anson, and William L. Haskell, Lewiston; committee on publication, Drs. Walter E. Tobie and Stanley P. Warren, Portland, Louis L. Hills, Westbrook, Joshua W. Beede, Auburn, and Langdon T. Snipe, Bath.

MARYLAND.

Improvement.—The publicity recently given to such matters has worked great improvements in our slaughter houses, according to the statements of city and state health authorities. Some of the establishments were found in such a condition that they will have to be closed entirely.

Personal.—Dr. S. W. Page, late of the house staff, City Hospital, and resident physician of Bayview Asylum, has returned to his home in Anderson, S. C., where he will practice.——Dr. Howard A. Kelly received the honorary degre of LL.D. at the commencement of Washington and Lee University, June 20.——Drs. Hugh H. Young and Gordon Wilson sailed for France, June 20.——Dr. J. S. Woodward, Jr., assistant surgeon, United States Navy, who has been stationed at Panama for several months, is visiting this city.——Dr. Conrad K. Uhlig has been appointed lecturer on chemistry at the Woman's Medical College.——Drs. J. M. Hundley and R. Winslow sailed for Europe June 21.

Baltimore.

Fined for Illegal Practice.—Theodore J. Taylor, colored, was fined $75 and costs in the criminal court, June 12, for practicing medicine without a license. The defendant claimed that he gave his patients only herb teas and did not pretend to be a physician.

Hospitals for Consumptives.—The annual report for the Hospital for Consumptives shows that 115 patients were treated during the year, of whom 46 were discharged benefited, 16 showed no improvement, and 9 died. An additional building and mountain sanatorium were added to the institution.

Hospital Appointments.—The following appointments are announced on the staff of St. Joseph's Hospital for the year beginning June 1: Pathologist, Dr. Eugene H. Hayward; radiographer, Dr. Howard E. Asbury; resident staff, Drs. Hamner C. Irwin, senior resident and surgeon, and Bernard J. West, gynecologist and oculist, both reappointed; Drs. George H. Pfueger and Charles L. Jennings, physicians, and Drs. V. F. Cullen and Newton W. Hirshner, surgeons. The following dispensary appointments have been made: Medical, Dr. John S. Fischer; surgical, Drs. Joseph E. Gately and J. M. Lynch; eye and ear, Drs. J. J. Carroll and Otto S. Duker; nose and throat, Drs. Frank E. Brown and J. P. Robinson; pediatrics and skin, Dr. E. L. Crutchfield; gynecology and obstetrics, Drs. L. E. Neal and E. L. Crutchfield, and protology, Dr. Arthur Hebb.

MASSACHUSETTS.

Establishes Chair in College.—Mrs. Louisa N. Bullard has given Harvard University Medical School $52,000 to establish a chair of neuropathology.

Sentenced to Penitentiary.—David H. Richmond, Brockton, on June 15 was sentenced to imprisonment in the penitentiary for a period of from six to ten years for causing the death of a woman by an illegal operation.

Bequest.—By the will of Miss Ella A. Bartlett, Kingston, N. H., Hale Hospital, Haverhill, is given $5,000 as an endowment for a free bed for the use of Kingston people, and $3,000 is devised to the Exeter College Hospital, to be known as the Sandborn Stevens fund.

Require Five Years' Course.—At the annual commencement exercises of the College of Physicians and Surgeons, Boston, it was announced that in future, in order to obtain the degree of doctor of medicine, a five years' course of study will be required, together with one year's hospital work after the completion of the course.

Medical Care for Employés.—In connection with a new building to be constructed for the W. L. Douglas Shoe Company, of Brockton, there is to be a thoroughly equipped medical emergency room, with a physician in constant attendance, who will also make professional calls in the homes of such of the employés as may so desire.

MICHIGAN.

Hospital Opened.—The Hubbard Memorial Hospital, given to Huron City by Frank W. Hubbard, Bad Axe, was formally opened May 30.

To and from Europe.—Dr. and Mrs. Charles B. Nancrede, Ann Arbor, are spending the summer in Europe.——Dr. Walter R. Parker, Detroit, has sailed for London.——Dr. and Mrs. R. Adlington Newman, Detroit, who have been in Europe, sailed for home June 8.——Dr. George F. Inch and wife, Kalamazoo, have sailed for England.——Dr. James A. Ardiel, Grand Rapids, started for Europe June 11.

Communicable Diseases.—Greenville is reported to have had 14 cases of smallpox.——Two cases of smallpox are reported in Chapin. No spread of the disease is anticipated.——Measles is reported to be epidemic at the Michigan Home for Feeble-minded and Epileptic, Mount Clemens.——On account of the prevalence of diphtheria in Coldwater the Board of Health has closed the city schools and churches and prohibited public gatherings.

Personal.—Dr. Theodore A. Felch, Ishpeming, has been appointed a member of the State Board of Medical Registration, vice Dr. Joseph B. Griswold, Grand Rapids, resigned.——Dr. Zygmont L. Kadlubowski has been appointed city physician of Detroit, vice Dr. Boleslaus W. Pasternacki.——Dr. Henry M. Joy, Calumet, is in Ann Arbor under treatment for septicemia.——Dr. Henry B. Gammon, Hastings, recently underwent operation for nephrectomy and is reported to be improving.——Dr. Ziba H. Evans, Traverse City, has been adjudged insane and committed to the State Hospital, Kalamazoo.

MINNESOTA.

"Patent Medicines" in Minnesota.—Under a law of Minnesota a state medical board is constituted with directions to procure samples of all the "patent medicines" sold in the state and to subject them to a careful analysis. The results of each analysis are to be published in a weekly bulletin to be issued by the department. If the preparations contain opiates, alcohol or other deleterious substances, that fact will be published, together with the quantity.

NEW JERSEY.

Election of Officers.—At the one hundred and fortieth annual meeting of the New Jersey State Medical Society, held in Atlantic City, June 19-21, the following officers were elected: President, Dr. Alexander Marcy, Jr., Riverton; vice-presidents, Edward J. Ill, Newark, David St. John, Hackensack, and Benjamin Waddington, Salem; corresponding secretary, Daniel Strock, Camden; recording secretary, William J. Chandler, South Orange; treasurer, Archibald Mercer, Newark. It was decided to meet next year at Cape May in the last week of June.

NEW YORK.

New York City.

Funds for St. Mary's Hospital.—A garden party netted $6,000 for St. Mary's Hospital. This is more than was secured at any of the 16 previous functions of this sort.

Library for Fordham.—It has been announced that Dr. Thomas Addis Emmet has given his medical library, said to be the finest nucleus around which a medical library could grow, and valued at more than $25,000, to the Medical Department of Fordham University.

A Million for Hospitals.—The board of health has applied for an appropriation of $1,000,000 to continue the additions being made to the contagious disease hospitals on North Brother Island, at the foot of East Sixteenth Street and on Kingston Avenue, Brooklyn.

Ambulance Accident.—An ambulance belonging to the Long Island College Hospital was struck by a trolley car and upset, injuring the driver and a bystander. Dr. Williams, the surgeon, was picked up unconscious, badly cut and bruised about the head, and showing symptoms of internal injuries.

Seaside Hospital Open.—The Seaside Hospital belonging to St. John's Guild has opened for the summer two weeks earlier than usual. Tickets for admission have been distributed to hospitals, dispensaries and other organizations working among the poor, and will be given to mothers of sick babies needing treatment.

Personal.—Dr. Francis J. Quinlan has been the recipient of the Laetare medal, which is conferred once a year by Notre Dame University on a Roman Catholic layman who has won distinction by service to mankind.——Dr. Charles L. Gibson has been elected professor of clinical surgery in the Cornell Medical College.——Dr. and Mrs. G. S. Munson sailed on the *Koenigin Luise* June 23.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending June 16, 669 cases of measles, with 30 deaths; 416 cases of tuberculosis pulmonalis, with 157 deaths; 297 cases of diphtheria, with 26 deaths; 133 cases of scarlet fever, with 10 deaths; 58 cases of whooping cough, with 3 deaths; 38 cases of typhoid fever, with 6 deaths; 14 cases of cerebrospinal meningitis, with 14 deaths; 108 cases of varicella, and 4 cases of smallpox, making a total of 1,737 cases, with 246 deaths.

Result of Caisson Inquests.—The inquest on the deaths of four men from caisson disease contracted in the Pennsylvania Railroad tunnel has been concluded. The jury recommended more care in allowing men to enter and leave the air locks, and advised that men should not be allowed to exchange passes, thus permitting some to go in without physical examination. The jury recommended that the board of health take adequate action to prevent further needless loss of life. It was stated officially that the board had made inspections and would repeat such inspections in consequence of the recent accidents.

St. Mark's Hospital.—The sixteenth annual report of this institution shows that 4,676 patients have been treated during the past year. The total receipts for the year were $46,221.46 and the expenditures $43,254. The average daily cost of maintenance per patient was $1.80, a sum below that reported by many other hospitals. One feature of this institution is to give a free meal to every poor person applying for it at the doors; during the past year 5,609 free meals have been dispensed. This hospital is not connected with any religious organization, but is entirely dependent on voluntary contributions.

Object to New York Garbage.—Complaints have been received that the beaches of Long Island and New Jersey have become a dumping ground for New York garbage. This indicates that the 15 mile limit is not far enough and Commissioner Woodbury proposes to have the scows taken 25 miles out. The commission which the legislature authorized the

mayor of New York City to appoint to devise means for keeping the waters of New York harbor from becoming polluted will consist of Dr. Daniel Lewis, ex-president of the State Board of Health; Prof. Olin H. Landreth, Dr. George H. Soper, Mathew C. Fleming and A. J. Provost. The commission is requested to ask the co-operation of the authorities of New Jersey and to make a report within two years.

OHIO.

Free Diphtheria Antitoxin.—Commencing July 1 the city of Cleveland will distribute diphtheria antitoxin to the needy free of charge.

Personal.—Dr. Wade MacMillan, surgeon to Christ's Hospital, Cincinnati, has been appointed on a commission by the governor to build a state hospital for crippled children. Dr. Frank Bunts, Cleveland, is the other medical member of the commission, while the third is a layman.——Dr. and Mrs. A. Judson Quimby, Blaine, have sailed for Europe.

Cincinnati.

Commencements.—Miami Medical College and the Medical College of Ohio held their annual commencement exercises June 1. The former graduated a class of 24, of which 18, or 75 per cent., secured hospital positions. The Medical College of Ohio, out of a class of 33, secured hospital positions for 22, or 67 per cent.

Personal.—Dr. Frank B. Cross is in Vienna, in Fuch's clinic. ——The Cincinnati Board of Public Service has appointed Dr. Louis P. Heyn city bacteriologist in place of the late Dr. W. H. Crane. Dr. Crane's other position, city chemist, has been awarded to Dr. Fred Sampson.——At a recent meeting of the board of trustees of the Chicago Home for Destitute Crippled Children, Dr. Gilbert L. Bailey, formerly of Cincinnati, was appointed assistant orthopedic surgeon.——Drs. Emmett, Fayen and Streitman, who have just finished their terms of service as internes to the Good Samaritan Hospital leave shortly for Europe, to be gone a year.

PENNSYLVANIA.

Personal.—Dr. B. F. Wagonseller, Selins Grove, has been selected as a candidate for Congress from Snyder County.

Portrait of Dr. Penrose for University.—At the annual commencement exercises of the University of Pennsylvania, June 13, Dr. Edward Martin presented to the Medical Department of the university a life-size portrait of Dr. Charles B. Penrose, a former professor of gynecology.

Formaldehyd in Milk.—At Pottsville a test was made of local dairy products before Justice of the Peace Conrad, which disclosed the presence of formaldehyd as a preservative. It was asserted that the milk had been kept sweet for six weeks. State Food Commissioner Simmers will enter prosecution.

Vaccination for State Cattle.—Dr. Leonard Pearson, state veterinarian, assisted by Drs. M. P. Ravenel and S. M. Gilliland, has made experiments during six years to guard against tuberculosis in cattle. Dr. Pearson has been led to state that perfect immunization can be obtained in healthy cattle and that the disease can be arrested in those already attacked. As a result of these experiments, it is said, the vaccination of cattle to prevent tuberculosis is about to be put in practice throughout the state.

Tablet in Honor of John Morgan.—A memorial tablet to the memory of John Morgan, founder of the Medical Department of the University of Pennsylvania, has been secured and will be placed in Houston Hall of the university. The tablet contains the following inscription:

JOHN MORGAN. College, 1757. F.R.S., 1762.
Edinburgh University, M.D., 1763.
Physician-in-Chief of the American Army, 1775-77.
Founder of the Medical Department of the University, 1765, and first in America to hold a Chair of Medicine.
Erected by the Class of 1906, Medical.

Alumni Reunion.—The twenty-fifth anniversary of the graduation of the class of '81 of the Medical Department of the University of Pennsylvania was celebrated by a reunion and dinner at Essington, Pa., June 13. Twenty-two members of the class were present, with Drs. James Tyson, J. H. Musser and H. R. Wharton as invited guests. The former officers of the class were re-elected: Dr. G. E. de Schweinitz, president; Dr. W. Easterly Ashton, vice-president, and Dr. D. W. Nead, 3222 Spencer Terrace, Philadelphia, secretary and treasurer. It was decided to hold reunions every five years, or oftener, at the discretion of the officers, and a resolution was adopted fixing the annual dues of the members of the class at $1.00.

Philadelphia.

Public Baths Open. The 18 public bath-houses throughout the city were opened to the public for the summer June 18. The houses will be open daily from 6 a. m. to 9 p. m., except Sunday, when the hours will be from 6 to 9 a. m. Two new bath-houses have been added to the list since last summer. Last summer 4,602,729 baths were taken.

Money for Hospitals.—By the will of the late Joseph A. Seffarlen, St. Vincent's Maternity Hospital receives $5,000.—— By the will of the late Hettie W. Swire, $500 is given to the Philadelphia Home for Incurables, and $500 to the Sanitarium Association.——The Germantown Hospital will realize about $2,000 as a result of a benefit garden party.

English Surgeons Visit.—Messrs. Charles A. and Hamilton Ballance, surgeons to St. Thomas Hospital, London, who had been attending the Boston session of the American Medical Association, were entertained by Dr. Robert G. Le Conte at the Rittenhouse Club, June 12. While in the city they were the guests of Dr. W. W. Keen and visited the principal medical schools and hospitals.

City Milk Supply.—The report of the milk inspectors, detailed by the board of health to investigate the milk supply of the city, reports that the milk was found to be fresh, wholesome and not contaminated. The improved condition of the city's milk supply is attributed to the observance by the milk dealers of the regulations issued by the department of health and adopted by the Philadelphia milk exchange.

Vacation Suspension.—During July and August there will be no meetings of Philadelphia medical organizations exceept the Medicolegal Society. The *Weekly Roster* will also suspend. During the first season of the roster it has aided in the formation of two branches of the County Medical Society, has increased the number of particiapating organizations to 28, and its weekly circulation from 1,300 to almost 2,400.

Personal.—Drs. Clara Marshall, Francis White, Donnel Hughes, Morris Longstreth, John M. Swan, Walter Ziegler and Daniel Hoyt have sailed for Europe.——Dr. W. W. Maries has resigned as assistant medical inspector from the board of health.——Dr. William E. Hughes, pathologist to the Presbyterian Hospital and late professor of medicine in the Medico-Chirurgical College, was operated on for appendicitis in the German Hospital, June 21.

Hospital Report.—The report of the Medico-Chirurgical Hospital shows that there were treated in the hospital during May, 311 cases; in the accident room, 701; medical dispensary, 280; surgical dispensary, 1,288; gynecologic dispensary, 162; orthopedic dispensary, 40; genitourinary dispensary, 490; skin dispensary, 111; nervous dispensary, 177; pediatric dispensary, 42; eye dispensary, 1,480; ear dispensary, 416; nose and throat, 257; therapeutic, 138; electrical, 178; *x*-ray, 162, making a total of 6,283.

Fire Ambulance Service.—The plan to have regular ambulance service at all fires throughout the city has been arranged and the new service will be placed in effect during the present week. The city has been divided into five districts, corresponding to the chief police districts. The ambulances to the hospitals in the district in which a fire occurs will respond to a single fire alarm; when two or more alarms are sent in the ambulances more remote will also respond. Twenty-five free and four paid ambulances constitute the service.

Health Report.—The total number of deaths reported for last week reached 429. The principal causes of death were: Typhoid fever, 18; measles, 2; pertussis, 4; diphtheria, 8; pulmonary consumption, 59; cancer, 30; apoplexy, 16; heart disease, 33; acute respiratory disease, 31; enteritis, 46; hepatic cirrhosis, 6; Bright's disease, 34; suicide, 2; accidents, 18; and marasmus, 7. There were 219 cases of contagious disease reported, with 27 deaths. The death rate is of the normal average and contagious diseases have decreased in comparison with the preceding week.

Slaughter Houses Insanitary.—The report of the medical inspectors of the Bureau of Health shows that the city's slaughter houses are in a dangerous condition. Out of 76 houses inspected, 50 were declared insanitary. Each proprietor is notified by the Board of Health to put his place in a sanitary condition or to take his chances of having his business condemned. Several arrests have been made of men who have failed to comply with the warnings issued by the health bureau. Fifteen per cent. of the slaughter houses and large abattoirs were found in an excellent sanitary condition.

Venereal Prophylaxis. The Philadelphia Society for the Study and Prevention of Social Disease is now thoroughly organized and plans a large hospital as well as a widespread

educational movement. The officers are: Hon. Abraham M. Beitler, president; Dr. W. W. Keen, Charles C. Harrison, Esq., and Col. R. Dale Benson, vice-presidents; Dr. Robert N. Willson, secretary, 1708 Locust Street; Dr. Jay F. Schamberg, treasurer. The society is sending out the following statement in connection with an appeal to physicians to join the movement:

It is proposed to attack the problem of venereal disease along the general lines that have been followed in combating other infectious conditions, and conspicuously in the fight against tuberculosis. At present neither the medical profession nor the lay public should be asked to sanction measures other than those of an educational nature. It would seem just, however, in the presence of a widespread venereal infection, which spares no class even when free from misdoing, that laymen should be placed in possession of their only safeguard, the facts, to which they have a clear title. Women, rich and poor, stand the brunt of the storm. They suffer disease and sterility in silence and in ignorance that the cause is often the double standard of morals that admits of male license, yet requires the female to be pure. This society hopes primarily to present the facts regarding normal sexual hygiene. Much will be accomplished if the laity, male and female, be informed with authority of the need for early education in the home, especially regarding Nature's laws, and later as to her imperative demand for chastity in both sexes. Thus only will the health of the community be safeguarded.

Practical evidence of the existing state of affairs is afforded fathers and mothers in the report of nearly one thousand cases of venereal disease treated annually in the Philadelphia Hospital alone, with as many more in the wards in a chronic state. From this and every focus proceeds a danger of both innocent and criminal infection that should not be ignored. Though the poor man and the poor man's daughter suffer most, the statistics among the so-called higher classes afford the physician a no less certain cause for reflection and regret. Adequate provision for the hospital treatment of venereal disease, the education of private and hospital patients concerning the means of its transmission, and the importance of sexual health as a prerequisite to marriage, are all matters that should interest you.

VIRGINIA.

Personal.—On May 29 the citizens of Portsmouth presented a silver loving cup to Medical Director Remus C. Persons, U. S. Navy, in charge of the Norfolk Naval Hospital, who has been transferred to the Mare Island Navy Yard.——Dr. Charles R. Robins, Richmond, recently advanced from adjunct professor to professor of gynecology in the Medical College of Virginia, in accordance with the custom of that institution, gave a banquet to the adjunct faculty, May 31.

WASHINGTON.

Medical Women Organized.—The Medical Women's Club of Seattle was recently organized with 15 charter members and the following officers: Dr. Sarah J. Dean, president; Dr. Sarah A. Kendall, vice-president, and Dr. Marietta Marsh, secretary and treasurer.

Hospital Plans New Building.—St. Mary's Hospital, Walla Walla, has decided to build an addition which will double the present capacity of the institution. The new building will be three stories in height, will accommodate 150 patients, and will cost about $100,000.

Fined for Illegal Practice.—E. W. Colgrave, Walla Walla, on April 25, pleaded guilty to practicing medicine without a license and was given a minimum fine of $50. The defendant pleaded ignorance of the law, stating that he supposed he was entitled to practice on filing notice with the state board of his intention to take the examination.

WISCONSIN.

Hospital Opened.—A new hospital with 14 rooms was opened in Stevens Point June 2.

Leper in Soldiers' Home.—A case of leprosy was reported June 5 from the Soldiers' Home, Milwaukee,

Itinerant Physician Not Guilty.—In the case of J. Austin Larsen, Eau Claire, charged with practicing medicine without a license, the jury, on May 28, found the defendant not guilty.

Proposed Consolidation.—At the banquet following the commencement exercises of the Milwaukee Medical College, May 31, Dr. William J. Cronyn, professor of medical jurisprudence in that institution, strongly advocated union of the two medical colleges of the city.

Must Pay License.—Physicians of Stillwater, Minn., have received notice from the Wisconsin State Board of Health that if they desire to practice in that state they must pay a license fee of $25. For many years it has been the custom for Stillwater physicians to answer calls in the small towns on the Wisconsin side of the St. Croix river.

Anti-Nostrum Resolutions.—At a recent meeting of the physicians of Manitowoc, Calumet and Sheboygan counties, at Brillion, the following resolutions regarding proprietary and "patent medicines" were unanimously adopted:

WHEREAS, The use of proprietary and "patent medicine" is a danger to the health of the community and derogatory to the position of the physician as a good citizen and guardian of the people's health.

Resolved, That we as a party and as individual members of the profession put ourselves on record as opposing the use of such remedies advertised through either as the newspaper's or in any such form, or in the form in which they are placed before the physician.

Resolved, Further, that we commend the efforts of such newspapers or journals that are making an effort to destroy the "Great American Fraud."

GENERAL.

New York Quarantine Regulations Against Cuba.—The New York quarantine against Cuba went into effect June 23. Under these regulations all passengers on steamships from Havana and other Cuban ports must on arrival produce certificates showing that they are immune from yellow fever. Their failure to do so will mean that they will be held for observation until five days have elapsed since their departure from Cuba.

Dr. White Convalescing.—Dr. J. William White, Philadelphia, professor of surgery in the University of Pennsylvania, underwent an operation at Rochester, Minn., June 21, for the removal of the sigmoid flexure of the colon on account of a tumor, which proved on pathologic examination to be of an inflammatory origin, caused by an intestinal diverticulum containing an enterolith. On June 26 he was reported to be convalescing satisfactorily with every reason to expect permanent recovery.

Red Cross Prizes.—The central committee of the American National Red Cross has received notification that the Empress Marie Feodorovna, who is patroness of the Russian Red Cross Society, has given $40,000 to establish a fund, the interest of which is to be given each five years in prizes for inventions which will facilitate the removal of the wounded from battle fields and from scenes of action at sea. The awards will be made by a special international jury. Three of these prizes will be given in 1907. The central committee of the American National Red Cross, War Department, Washington, offers at the proper time to receive and forward, without expense, the plans and models of American competitors for these prizes.

Health Report of the Isthmus for May.—The report of the sanitary department of the Canal Zone for May states that during the month one case of yellow fever occurred in Colon. The patient was an Italian who had been living in Colon for two months. He died after an illness of 5 days. The general health of the canal employés is excellent. The death rate was the smallest for the last year. Pneumonia continues to be the greatest cause of death; during the month there were 15 deaths among the blacks and 2 among the whites from this cause. Malaria caused 5 deaths. The report states that while the health conditions among the civil employés population is not so good as among the laborers, it is improving. Beriberi is decreasing; a year ago the deaths from this disease averaged 16 or 17 a month. During May, 1906, there were only 2 deaths from this cause.

B. & O. to Fight Bacteria.—The Baltimore & Ohio Railroad has started a campaign against propagation of bacteria by thorough disinfection of their cars. An order has been issued by the general manager that all passenger cars shall be equipped with cans of disinfecting material and train porters are being instructed as to their use. Each porter is required to keep his car antiseptically clean, and similar orders have been issued to the employés in charge of passenger stations. Disinfection of cars and stations is done under the direction of the medical inspectors of the relief department of the road. When it is learned that any one on the train is suffering from a contagious or infectious disease the conductor is instructed to notify his division superintendent by wire, so that the car can be promptly disinfected at the end of its run. Formaldehyd gas is used and the car subjected to the action of these fumes for a period of seven hours.

CANADA.

Contagious Diseases.—During May there were 33 cases of diphtheria in Toronto, 25 of scarlet fever, and 8 of typhoid fever.——There were 37 cases of typhoid fever in St. John, N. B., during the last week of May, all traced to milk.

Hospital News.—The York County Council, Ontario, is making a grant of $15,000 to the Toronto General Hospital.——The Toronto General Hospital and the Hospital for Sick Children will periodically make interchanges in their nursing staffs.——The new wing for patients with nervous diseases in connection with the Toronto General Hospital was formally opened June 14. It contains two private wards and two public wards, with accommodation for 12 patients.——The Commercial Travelers' Association of Montreal has endowed a bed in the Montreal General Hospital at an expense of $2,000.

Personal.—Dr. William Oldright, Toronto, who attended the International Medical Congress, was robbed at Padua of his purse, personal papers and a letter of credit for $1,500.——Dr. McLaren, formerly superintendent of the Hamilton City Hospital, has been appointed sub-inspector of ophthalmic hospitals under the government of Egypt and is on his way to Cairo.——Dr. Louis de Lotbiniere Harwood has been appointed medical superintendent of the Notre Dame Hospital, Montreal. ——Dr. Helen MacMurchy, Toronto, has been appointed by the Ontario government to take a census of the feeble-minded people of the province of Ontario other than those confined in provincial hospitals and houses of refuge.

FOREIGN.

German Appropriation for Research on Syphilis.—The German Reichstag has appropriated $25,000 to further the research on syphilis, especially Neisser's work with monkeys in Java.

Ibsen a Student of Pharmacy and Medicine.—Our foreign exchanges state that Henrik Ibsen was a graduate pharmacist and served at Grimstadt for three years as pharmacist's assistant. He then left this town to take up the study of medicine, but did not continue it long, turning then permanently to literature.

Prize for Work on Tuberculosis.—It is reported from Budapest that Prof. F. Koranyi offered a prize of $250 for the best Hungarian work on tuberculosis that has appeared in the last five years. The prize was unanimously awarded to Prof. O. Pertik for his important monograph on tuberculosis, based on personal research, which forms the second part of the Lubarsch-Ostertag "General Pathology and Pathologic Anatomy."

Appropriations for Special Research in France.—About $31,600 was appropriated by the French government during 1905 to aid scientists in special research. Among the beneficiaries was Calmette of Lille, director of the experimental institute where antivenin, to protect against snakebites, and serums of various kinds are prepared. He also established the first special dispensary for tuberculosis. His scientific zeal won for him also the Audiffred "devotion prize" last year. Achard of Paris was another beneficiary, his research being especially on "salt starvation" in treatment of various diseases. Arloing of Lyons received financial aid in his studies on vaccination against tuberculosis, R. Dubois on the "radiobes", F. J. Bose on the bryocytic diseases," and J. Ray on cancer.

Physicians in Politics.—The *Semaine Médicale* of Paris comments on the exceptionally large representation of the medical profession in the French parliament, saying that it is out of proportion to the population and to other professions. It says also that experience has shown that when a physician is elected to the national legislature in France he seems to lose all concern for the material interests of the profession and even for everything connected with medicine. It adds that it could cite the names of several confrères, long subscribers to the *Semaine Médicale*, who say they no longer have leisure to read it as their time is so occupied with their legislative duties. France suffers very much from irregular practices, and quacks of all kinds, even to the extent of having an irregular "School of Massage and Magnetism," conducted by one Durville, officially sanctioned by the state and duly registered. The Congress for the Repression of Quackery, recently held at Paris, is mentioned below.

Organization of the Profession in France.—It is now 25 years since Dr. G. Mignen of Montaigu, a small town in northwestern France, conceived the idea of urging the physicians of his district to combine for the purpose of promoting their material interests. The association thus formed was the first "syndicat médical" in France. Now there are 157, and they number more than 8,000 members, with only a few departments still without an organization of the kind. The anniversary was celebrated on May 16, when a bronze tablet was presented to Dr. Mignen, bearing an allegorical device and the motto: "Credo, Spero, Expecto." The *Progrès Méd.* remarks that the members say their "Credo" full of faith in the future of the organization of the profession, their "Spero" full of hope in the results of the work, shoulder to shoulder, which has scarcely as yet begun, and their "Expecto" looking forward with confidence to the day when the physicians of the land will be able to take the useful and honorable place in modern society which membership in the organized and well directed profession will insure for them.

The Cancroin Suit.—Professor Adamkiewicz, formerly of Warsaw, now of Vienna, has instituted proceedings against the manufacturing chemists, Merck & Co. of Darmstadt, claiming $60,000 as the forfeit agreed on in a contract for the manufacture and exploitation of his "cancer remedy, cancroin." The contract was signed in 1901 and the firm agreed to manufacture and push the remedy and not to withdraw from the agreement until after five years, under penalty of forfeiting the above amount. He further claims that the firm did not make the cancroin according to his directions, but purchased the neurin, the principal ingredient, instead of supervising its production. The firm contend that Adamkiewicz misled them with his statements that cancroin was an actually effectual remedy against cancer. They state that the reports of prominent physicians have been unfavorable, and that they have lost money on the venture. To this the plaintiff, according to the Vienna letter in the *Deutsche med. Wochft.* for May 31, retorts that "if the firm lost money it was due solely to the lack of the advertising necessary for the introduction of a new remedy."

Plague in India.—The Indian correspondent of the *Lancet* states that the epidemic of plague in India this season is pursuing a very unusual course. While it has been comparatively mild and has developed later in nearly all parts, the city of Bombay is suffering to an intense degree and about a thousand deaths a week are being recorded. Calcutta, on the other hand, has this year escaped with a very modified outbreak. There has not yet been any official announcement with regard to the results of the work of the scientific investigations on plague, but it is rumored that the rat-flea theory has been accepted, and great efforts have been made in many towns to exterminate these pests. Scores of thousands of rats have been destroyed in Rangoon, Calcutta, and Bombay, but anything approaching extermination has not been realized. The milder outbreaks this year can hardly be attributed to this measure, because the lessened severity has been equally marked in places where the rats have been left undisturbed. It is interesting to note that the recrudescence in Bombay city is a month later in the season than heretofore and has developed to its present intensity in the hottest part of the year. No more ought to be heard of the annual decline being brought about through the advent of hot weather.

Congress for the Repression of Illegal Practice of Medicine.—The long-heralded French congress to discuss ways and means for repressing irregular practices opened at Paris, May 28, with 300 physicians in attendance. The ministers of public instruction and of the interior and the prefect of police were also present, and a number of lawyers were among the speakers. Professor Brouardel opened the session, but was compelled to retire early on account of his feeble health. The walls were decorated with quack advertisements, posters, etc., but perhaps the most striking example of quack effrontery was the distribution to the members of the congress, as they approached the building, of a circular entitled "Aux Congressistes." It proved to be a virulent diatribe against regular medicine, a manifesto issued by the quack *Journal de Santé*. Special emphasis was laid by many speakers on the necessity for collecting all the cases of injury from quack practices that are known. Each local medical society was urged to have its members on the alert for such occurrences. Among the resolutions adopted by the congress was one to the effect that the medical syndicates should co-operate in the production of a work showing the danger and damage from irregular practices and ask that the subject should be presented in the schools. A number of resolutions were adopted, some advocating the restriction of massage and of the fitting of eyeglasses to registered physicians, others urging that massage should be taught in the medical colleges. The French law regulating the practice of medicine was shown to be capable of much more rigorous application. The delegate from the Berlin Medical Chamber expressed a wish that Germany might have legislation like it. Levassort urged the organization of a central office, to be supported by contributions from the various medical societies throughout the country, the official title to be the Central Office for the Protection of the Public Health Against the Illegal Practice of Medicine. This office should centralize the efforts of physicians in the repression of quackery and education of the public, collect and classify data in regard to illegal practices, and supply information. This motion was adopted and also another by the same speaker, urging the collecting of data for an official directory of all the legally qualified practitioners of medicine in France. An able article on the congress as a whole, in the *Semaine Médicale* for June 6, sums up its work as not productive of much that was new, but as pointing with increasing clearness to the fact that the way to suppress quack practices is by education of the public. Little can be hoped from the public authorities until they are forced to act by the coercion of public opinion.

VIENNA LETTER.

The New Hospital for Clinical Teaching.

The Vienna General State Hospital having proved entirely inadequate to the needs of modern medicine and modern teachings on account of its restricted localities, a combined action by municipal and governmental authorities was initiated by the senate of the Vienna University with a view to building a suitable hospital on modern principles. Thus a vast area of garden ground has been bought up by the respective representatives, and now 200,000 square meters are at the disposal of the building committee. The new hospital will consist of 21 large pavilions, each pavilion being devoted to the needs of one clinic and comprising all facilities and opportunities for conducting scientific and curative researches. Vast, commodious wards, laboratories furnished with all necessary apparatus, and completely fitted out according to the wishes of the directors of the respective clinics, are planned, and three pavilions are already in course of erection. They will be completed in September, when they will be opened. The plans comprise three clinics (pavilions) for internal diseases, two surgical, two gynecologic and obstetric, two each for ophthalmologic, otologic, dermatologic, laryngologic and neurologic purposes, besides a chemical institute and a pavilion for morbid anatomy, besides another building for administrative purposes. Cases which do not seem suitable for clinical demonstration will be directed to another hospital, situated more on the outskirts of the city, while the state hospital will be situated in the center of the town, near the present hospital. The capacity of the wards will be 2,400 beds, and the costs are estimated at 20,000,000 kroner ($4,000,000). It will be not the most expensive, but the largest and best equipped clinical hospital in Europe, perhaps in the world.

The Winter Session at the University.

The last winter semester of the University of Vienna lasted until the end of April on account of the numerous courses and lectures which were delivered by the professors and their assistants. The postgraduate lectures are delivered monthly during the time of Easter holidays and after the summer term, so as to enable the practitioners to make use of these classes. There were 52 physicians from England and America, and numerous others are still working in the wards of the hospitals. English courses are being held by several professors for the convenience of foreign visitors, thus offering them a great advantage, at least, for their first few weeks in the city.

Insurance Fees and Lodge Practice

Some Companies Allow Mileage.

WHITING, IOWA, June 13, 1906.

To the Editor:—I wish to add my mite to the discussion going on in regard to life insurance examination fees. It may not be generally known to examiners that some companies allow a mileage fee in addition to the regular examination fee in cases in which the physician has to make a trip to the applicant's place of residence. As so many life insurance companies seem to reveal a disposition to exploit their medical examiners, the latter ought to be on the watch to get all that is coming to them, and should always include a bill for mileage in cases in which they have had to make examinations away from their offices. F. S. SPEARMAN, M.D.

One Insurance Company Voluntarily Raises Fees.

DALLAS, TEXAS, June 8, 1906.

To the Editor:—While individual physicians and medical societies are protesting through THE JOURNAL against the cut in fees of some large eastern insurance companies, it is gratifying to state that the Pacific Mutual Life Insurance Company of California has voluntarily raised the fees for medical examinations from $3 to $5, independent of the size of the policy.

EMILE ARONSON, M.D.

Societies Take Action.

OTHER SOCIETIES.

The Chickasaw County (Iowa) Medical Society adopted resolutions making it dishonorable for any member to accept less than $5 for making an examination for life insurance. Similar resolutions were adopted by the Randolph County (Ga.) Medical Society, the Obion County (Tenn.) Medical Society, the Spartanburg (S. C.) Medical Society, the Sixth District (N. D.) Medical Society, the Whitley County (Ind.) Medical Society, the Indiana State Medical Association, and the North Carolina State Medical Society.

The Recent Cut in Insurance Fees.

HERMAN, MINN., June 5, 1906.

To the Editor:—The physician who examines an applicant for life insurance immediately assumes the position of a corporation lawyer, that is, his ability is bought to ascertain the practicability of a company investing in the applicant's chance to live. Is the applicant a business proposition? Is his earning capacity—physical health—good for the maximum of his expectancy? In other words, the physician is the "grader" of risks, the governor which keeps the mortality from "blowing off."

If it were a matter of mere questioning and the search for albumin a notary public would suffice and his seal and 25 cents might close the incident. But, would his acceptance satisfy the discriminating insurance company as to the soundness of such "bucket-shopping"? No; the company insists on a qualified physician with hospital experience, a member of a medical society, possessed of the means and knowledge of complete urinalysis. And even then the physician is most carefully selected from many of his kind because of individual adaptability. This is the man that is asked to apprise the company as to the physical soundness of their agent's catch.

If, then, you are examining for old-line companies—an acknowledgment of your superior ability—and accept a reduction in fees you not only flatly contradict their opinion of you, but your reduction is added to the very profits which your examination has made possible—the premium-bearing applicant. Or, to strike nearer home, you—a trained man—are cut $2 to defray the expenses of the untrained—the agent—usually a man who has failed in all other lines of business attempted! J. T. LELAND, M.D.

Correspondence

The Advertising of the Battle Creek Sanitarium Company.

CHICAGO, June 25, 1906.

To the Editor:—In view of the fact that Dr. Kellogg says in his letter, printed on page 1941 of your last issue, that "I consider Dr. Pusey's censure entirely just in every particular with the one exception that it does not apply to the Battle Creek Sanitarium, but rests wholly on the management of the Battle Creek Sanitarium Co., Limited," there seems to be no occasion to call further attention to my letter (THE JOURNAL, May 12, 1906, p. 1462). There is, however, a slight error in his statement when he speaks of my criticising the Battle Creek Sanitarium because of certain advertisements which are published in the newspapers over the name of the Battle Creek Sanitarium Co., Ltd. I used no names in my criticism except the name which occurred in the advertisement, the "Battle Creek Sanitarium Co., Ltd.," and if in criticising that concern I was unavoidably criticising the sanitarium, the mistake lies with the sanitarium in allowing its name to be used by an independent concern in such a way as to leave the impression with readers that it is the Battle Creek Sanitarium.

I accept fully the disclaimer of Dr. Kellogg that neither he nor the Battle Creek Sanitarium is intentionally responsible for the actions of the Battle Creek Sanitarium Co., Ltd., but it seems to me that the Battle Creek Sanitarium cannot hope to escape from any criticism which may result from the actions of a company that has the name "Battle Creek Sanitarium" as part of its title. The name inevitably suggests connection with, if not proprietorship of, the sanitarium, and it is a name which surely no corporation could adopt without the acquiescence of the sanitarium. The public cannot be expected to go to the incorporation papers of the Battle Creek Sanitarium Co., Ltd., or to know that it is not the company controlling the Battle Creek Sanitarium, without some such statement as Dr. Kellogg's. Until the publication of Dr. Kel-

logg's explanation, I think the very large majority of the medical profession must also have lived under the error that the Battle Creek Sanitarium Co., Ltd., was a corporation owning the Battle Creek Sanitarium or was a subsidiary corporation.

After writing my letter to THE JOURNAL, I had an agent answer an advertisement of the Battle Creek Sanitarium Co., Ltd. In reply I received a symptom blank to be filled out and a request to send $5.00 for a supply of food, "which our expert dietitians will select." I filled out this blank *showing a person in normal health without bad habits*, and sent it and the $5.00. The only answers which possibly could have been distorted into evidence of dyspepsia were, "Sometimes sleepy," in reply to "Have you pain or heaviness after eating?" and "Drowsiness at times" in reply to "Do you suffer after eating from headache, drowsiness, etc., etc.?" Do you suppose there is a person living who is not sometimes sleepy, or who is not drowsy at times after eating!

In reply to this symptom blank I received a supply of foodstuffs and various literature. One letter which purported to be an individual letter addressed to the patient, began "The foods have been selected by our dietitians for your particular use." In addition there was a twenty-page letter, apparently a personal typewritten letter, in which there was a lot of instructions and advice addressed to the patient. This began, "From the statements made on your information blank, it appears that you are suffering from delayed digestion resulting in mal-assimilation, etc." There was also included "A blank report of progress for the dietetic department," to be filled out by the patient and returned, presumably for further information. In about ten days there came a follow-up letter containing, among other things, "Let us know at once any symptoms which are indicated on the report blank."

This, of course, is making an effort to treat people by mail; but it is more than that. By reverting to their advertisement it will be seen that they request replies both from the sick and those who wish to remain well, and in my particular case they were notifying a person, whose symptom blank showed normal health, that he was suffering from "mal-assimilation"—and a lot of other big words—and were then going ahead to treat him. This comes precious near trying to persuade people that they are sick, in order to cure them, or at least in order to have them for patients, or, we will say, purchasers of their goods; and in so doing it comes very close to the practices of the worst types of medical charlatans. To undertake to prescribe for people by mail is bad enough from the standpoint of the medical profession, but to tell them that they are sick in order to sell them things is the limit.

Now, as to the confusion with the Battle Creek Sanitarium—not *my* confusion, because, although I knew no better, I referred to nobody but the signer of the advertisement—but as to the confusion which must inevitably take place in the minds of the people who read these advertisements and get this literature. The letters sent out with their foods, and advice, were written on stationery with letter heads like "Battle Creek Sanitarium Company, Ltd., Battle Creek, Michigan, Department of Dietetics," with pictures of the sanitarium as part of most of the letter-heads. There was enclosed a book entitled, "The Simple Life, . . . The Battle Creek Idea." In this there was a two-page illustration of the Battle Creek Sanitarium. The third sentence on the first page of the letter-press of this booklet is "The expenditure of over a million and a half dollars in the creation of the Battle Creek Sanitarium was possible only because of the wonderful results secured." All through this booklet are references to the "Battle Creek Idea," the "Battle Creek System," and more than once reference is made to the "Battle Creek Sanitarium," not to "The Battle Creek Sanitarium Co., Ltd." There is nothing in this booklet that I found to indicate that all this stuff is not put out by the Battle Creek Sanitarium. On the contrary, I could get no other idea from the booklet, from the other literature, and from the labels on most of the packages, than that the design was to make the credulous believe that these things were issued by the Battle Creek Sanitarium.

Another leaflet which I received is chiefly an advertisement of a book by Dr. Kellogg, "The Stomach." "Dr. Kellogg, superintendent of the great Battle Creek Sanitarium, wrote this book. . . ." On one of the symptom blanks which they sent out, with an offer to furnish a supply of proper foods for $5, is stuck an insert in red ink, saying, "Use this blank and secure 'The Stomach' free." On the fourth page of this leaflet advertising "The Stomach" there are several testimonials. In one of them occurs the following sentence: "I can not say but one thing of all that has been sent me from the Battle Creek Sanitarium." I can not resist quoting another sentence from this same testimonial: "The 'Good Health' came last night, and like all else it is beautiful, good and true." (How true this rings to the average medical testimonial with its bad grammar and bathos).

Now, unless the Battle Creek Sanitarium proposes to stand for such methods, it seems to me absolutely necessary that its name be eliminated from the company issuing these food products. If there is any criticism from the professional standpoint to be attached to what the Battle Creek Sanitarium Co., Ltd., is doing, it is inevitable that this criticism must reflect on the Battle Creek Sanitarium, so long as the food company does business under its present name; the only way the Battle Creek Sanitarium can escape the conviction that it is behind this food company is to take its name entirely out of this company.

The logic of the situation indeed, compels me to go further, and to believe that neither the Battle Creek Sanitarium nor the medical men in association with the sanitarium can maintain their ethical character in the eyes of the profession, unless the sanitarium is able in some way to stop the exploitation of its reputation in the way it has been exploited by the Battle Creek Sanitarium Co., Ltd., or, better, make the company selling its products radically change its methods.

I am as glad as anybody that Dr. Kellogg and the Battle Creek Sanitarium are independent of the Battle Creek Sanitarium Co., Ltd., and I deplore as much as any one the fact that they are unwittingly laid open to what Dr. Kellogg calls "censure entirely just." And I hope that in the interest of their professional dignity they will be able to prevent the further use of the reputation of the Battle Creek Sanitarium in the ways which I have described above. W. A. PUSEY.

The Country Doctor.

GUM SPRING, VA., June 16, 1906.

To the Editor: I am very glad to note in THE JOURNAL, June 2, 1906, page 1711, Dr. M. W. Pearson's reply to Dr. John C. Wilson on "The Country Doctor." I am confident that Dr. Wilson's article is calculated to do great mischief, for it may be the means of stimulating other young and over-confident practitioners to undertake operations which they are incapable of performing except in a third-rate or fourth-rate manner, thus not only jeopardizing human lives without warrant, but bringing scientific surgery into disrepute with the non-discriminating public. I am myself a country practitioner, and I know whereof I write.

In my judgment, the country doctor (or any other general practitioner), who does major surgery, except in the most extreme emergencies, deserves to have his license to practice revoked.

To me it seems the baldest nonsense to talk of the country doctor doing refraction work, for any one who has tried country practice knows that, were the doctor never so well qualified, he would lack the time, and no man can become specially skilled in a special field without devoting most, if not all, of his time to it. W. K. McCOY.

Ocular Complications of Measles—The Country Doctor.

KALAMAZOO, MICH., June 11, 1906.

To the Editor:—In THE JOURNAL, May 26, there appears an item in Therapeutics on "The Ocular Complications in Measles." While in many respects there is a great deal of good advice in the article there are one or two things which it seems to me few oculists would advise. First, I am pretty sure that no one would think of using solution of cocain when intense photophobia is present. This symptom is most usually due to erosion of the cornea, and one of the great objections to

cocain solution is just this propensity to bring about such conditions. It is better to use 5 per cent. dionin or 0.5 per cent. solution of atropin sulphate p. r. n. Second, when intense itching of the eyelids occurs, it has not been my fortune to see any good result from the Pagenstecher ointment. I should think that better results would follow the use of phenol ointment, 10 per cent.

As to the use of the spray in general catarrhal conditions, I don't believe that one child in a hundred ill with measles will let the physician use a spray, and even if it did, if there is one thing that is decidedly *passé*, it is the spray. A very much readier way to wash the nares of these little patients is to use the ordinary nasal douche. It is simple, effectual and cleanly. Moreover, after using it or any other form of cleansing agent (and, by the way, a simple solution of salt and baking soda—a pinch each in the douche of warm water, is the easiest, handiest and best in my judgment), the child should not be permitted violently to blow the nose, for fear of carrying these secretions up the Eustachian tubes.

While I am correcting what seems to me to be an error, permit me to correct another error which appeared in THE JOURNAL, May 19, in a very excellent article on "The Country Doctor." There was much to commend in this article, and no one can have a higher respect for the capabilities of the country doctor than I, nor do I forget for one moment that Ephraim McDowell and Marion Sims were country doctors. The point which seems self-evident to me is the error in fancying that the specialist exists simply to impress his wonderful prowess on the non-specialist, or that the work specialists do is so unimportant that any country doctor can correct errors of refraction as well as the trained oculist. I have my doubts about this, that he can do as well and better than the average spectacle dealer (who, by the way, is not an optician even) goes without saying, but if the average physician with no preparation, or with a six-weeks course, can do as well as the thoroughly prepared oculists, than the ranks of the American ophthalmologic societies must be made up of some very poor timber. As a matter of fact, there is hardly a problem in medicine which calls for a more accurate and painstaking piece of work than the correction of refraction. That the doctor—country or city—should be able to tell whether or not an error of refraction exists is most necessary. I would go further and say that it is most desirable that he should be able properly to use the ophthalmoscope in his daily work. It will be of inestimable value to him. Among other things he should be able to recognize adenoids and, if need be, to operate for their removal. He can do that infinitely better and to more advantage to his patients than to correct refraction. It is remarkable how much shockingly bad work is foisted on a poor, deluded public by men with a smattering of ophthalmic knowledge.

ED. J. BERNSTEIN.

Dr. MacCormack in Lincoln County, Kentucky.

STANFORD, KY., June 1, 1906.

To the Editor:—In the language of the "sport," Dr. J. N. MacCormack, of Bowling Green, the representative of the American Medical Association, has been "going some" during the month of May. Except it be one in the flush of full health, as is usual with Dr. MacCormack, he could ill withstand the mental and physical strain through which he has recently gone. Meeting with recognition and encouragement everywhere enables him to keep young. His itinerary, arranged for him by the council of the Kentucky State Medical Association, began on May 1 and ended on the evening of May 26. He delivered in the 26 days (Sundays excepted), 38 addresses, which, like the stories of the sea god's daughters, are neither the same, nor yet different, but as sisters should be.

I would not presume to speak for other sections, but am able to compute for the profession of Lincoln County the gain which has accrued from his recent visit to Stanford, May 16. He was announced to speak at 10 a. m., not a convenient hour, being rather early for business people to "drop everything," even to hear a political harangue, of which Kentuckians, generally, are so fond; but the large, old-fashioned court-house, one of the most ancient in the commonwealth, was filled to overflowing with gentle folk, old and young, big and little, all anxious to listen to a new rendering of "The Relations of the Medical Profession to the Public," by a gentleman whom they had not seen, but of whom they had heard much. Suffice it that all were highly pleased as well as edified.

With the exception of three or four, who were unavoidably detained, every doctor in the county graced the occasion with his presence, and Casey, an adjoining county, sent a coterie of representative physicians.

Dr. MacCormack is so modern, so well equipped, his qualifications are so numerous, his manner and methods so fetching that to hear him before an audience is the rarest of treats. He does not indulge in polemics; his sentences mean something, he puts wit into them, emotion and satire, and when necessary, metaphorically speaking, "spanks" both the layman and the doctor—just for their own good. He is earnest, alert, open-eyed, and his eagerness is so patent that every one observes his desire to do good for the great common people by his sensible, practical remarks; and the members of the profession the boys in the trenches—feel, too, the higher and more ennobling life he pictures to them.

He wants the doctor not to neglect to-day, but to make the most of every passing hour, to fulfill his own hopes or the hopes of his friends, to be accomplished in his art, and above all, to observe the sweet amenities of life toward his fellow-practitioners.

Now, that the itinerary of Dr. MacCormack is over and gone, the aftermath is bound to be fine. We, in Lincoln, can hear flattering testimony to the efficiency of the good work done here. May harmony and peace, like a flowing river, ever be with us, as it is to-day.

Dr. MacCormack touched on a wide range of topics, but one in particular, "the mustard in the salad dressing," was that of fees for the examination of subjects for life insurance. He enumerated the $5 and the $3 companies. This matter is now interesting the whole profession. I may emphasize the fact that the Lincoln County Medical Society recently legislated on this question with unanimity, resolving that no member shall in the future, make an examination for an old-line company without charging and receiving therefor the fee of $5. Verily justice should be meted out to the doctors as is done to others—they deserve it. The recently promulgated plan of our metropolitan life companies compelling the physician, the man of standing and ability, to examine an applicant, then pass judgment on a risk of $1,000 and paying him only $3 for his service is an outrageous travesty on equity and justice, driving him, as it were, like sheep to the shambles; but still there are some, like Barkis, who are "willin'."

This should not prevail! Only organized effort will bring the companies "to taw" and cause them to pay a decent fee. But should they hang fire, not willing to accede to the demands of the profession, attempt the expedient, which is threatened, of doing without the doctor in $1,000 policies, or employ (and they may find them) cut-rate examiners for this work, discomfiture may and doubtless will overtake them within a few years.

In this tour the national organizer is dealing with this subject in an emphatic way, and his advice will overcome the obstacles now confronting us, or at least, so alleviate them as to make them tolerable. He is for the doctor in and out of season. It remains with him, then, to stand stanch and true like a pig's foot. If he shies at the fear of losing a job, he should have pasted in his chapeaux this sentiment:

"Our doubts are traitors
And make us lose the good we oft might win
By fearing to attempt."

STEELE BAILEY, M.D.

Presentation of Papers—A Just Criticism.

CHICAGO, June 16, 1906.

To the Editor:—While we are still enthusiastic over the wonderful success of the Boston session and thoroughly impressed with the dignity and great efficiency of the machinery of the American Medical Association, would it not be well to consider some of the factors which have operated to qualify the complete satisfactoriness in some directions?

It is obvious that the growth and general development of the Association is to present new problems which so far as may be should be anticipated. The sections, particularly in medicine and surgery, are and are destined to be still more attended to a degree that makes the complete usefulness difficult to achieve.

The presentation of the formal paper necessarily is acquiring a greater prominence and the discussion by the general profession, which in former days was one of the chief pleasures, to say the least, of the session, is becoming more difficult and distinctly less a feature. It serves to direct attention very distinctly to the character, not only of the papers produced, but also of the presentation thereof.

It is common observation that many members who read papers have entirely neglected the rhetorical quality necessary to present their views. One does not refer to the matter of startling impression through rhetoric, but to the desirable end of being comprehensible. For the most part this is due to faulty reading. Many elements enter into this. Many men are inexperienced, many are unfamiliar with their subject matter, and few have naturally insufficient voice, but most have tricks of enunciation and modulation of the voice which are utterly unsuited for presentation of serious matter to large gatherings in large spaces.

This is not a trivial matter, but a matter of the deepest importance, not only so far as regards the individual, but as concerning the rights of the audience to entertainment and instruction. No one has the right to take the time of a section or a general meeting in presenting a paper read either so rapidly, so indistinctly, or so stumblingly as to be painful to the great majority of the audience trying to listen.

No man need be so embarrassed as to make his inexperience an insuperable obstacle; no man need be at all unfamiliar with his paper, and there is no voice which under proper and considerate management can not be made to do effective service.

This does not apply to the members of minor prominence in the Association. If one could mention names it would be found to touch most pointedly many of the members whose opinions and influence in medical affairs are most sought for and needed.

Let every individual who has participated in the Boston session take it to himself and consider whether, in presenting his contribution, he has done full justice to the audience in this respect.

B.

An Ohio League.

SIDNEY, OHIO, June 11, 1906.

To the Editor:—The letters and other matter in recent numbers of THE JOURNAL which refer to the practice of church papers in giving place to advertisements of nostrums indicate a commendable interest.

It seems difficult to account for the apathy of clergymen of all denominations on this subject. The only rational explanation is that these men have not been aroused to a proper sense of the enormity of the evil. Either the family physician has not taken his brother of the clergy in hand and given him proper information, or individual effort has counted for little. Believing the latter to be the true reason, an effort was made at the annual meeting of the Ohio State Medical Society, held at Canton, to effect an organization of medical men who are interested in church work, for the purpose of doing by united action what can not be done by individuals alone. It is called "The League of Members and Adherents of Churches for the Suppression of Fraudulent Advertising in Church Publications."

In its constitution or declaration of principles the league states its object to be the enlistment of all moral and religious forces for the protection of the people, and the enforcement of such legal measures as seem necessary and proper.

Its aim is to organize auxiliary societies in every county of the state, to be composed of physicians, lawyers, ministers, teachers and other educated persons, women's clubs and other societies. These local associations are expected to distribute literature and to secure lecturers, and in every legitimate way to seek to enlighten the minds of the people and to prevent their exploitation by charlatans and fakers. In this way every clergyman will be brought to face the fact of his responsibility in permitting his own people to be defrauded and deceived. Church organizations, conferences, presbyteries, synods, associations, and other courts will soon take such steps as will reform this blot on our Christian civilization.

If this plan of campaign appeals to medical men in other states as it does to those of Ohio, a great impetus to the work will be given by early organization in every county in every state in the Union. United efforts alone can bring success—especially when the attack commences as it must ere long—on secular papers. The Great American Fraud is too strongly intrenched behind a fortress of unlimited capital to surrender without a gigantic struggle.

The condition which confronts us is one largely of our own making. Too long have we neglected the education of the people. Our allegiance to God and our duty to humanity calls for this work of redemption.

Already a large number of members of churches and others have joined this league.

Correspondence is invited by the executive committee:

D. R. SILVER, Sidney,
H. B. BLAIR, Lebanon,
E. W. MITCHEL, Cincinnati,
J. C. M. FLOYD, Steubenville,
HUGH F. LORIMER, Chillicothe.

Nitroglycerin in Pneumonia.

ST. LOUIS, June 20, 1906.

To the Editor:—The caustic criticism of the practice of using nitroglycerin in the treatment of pneumonia, in the article on "The Treatment of Lobar Pneumonia," by E. Russell Zemp, in THE JOURNAL, May 26, calls for some defense of a valuable but much abused and misused drug. Dr. Zemp states dogmatically that "nitroglycerin most certainly paralyzes the pneumogastric and the respiratory and vasomotor systems," also that "no one who clearly understands the physiologic action of this drug can be excused for killing a patient with pneumonia by its use."

As a matter of fact, the physiologic action of nitroglycerin has not as yet been clearly established. The recent study of the drug by Dr. H. P. Loomis, "Limitations of the Value of Nitroglycerin as a Therapeutic Agent," *Med. Record*, 1905, No. 11, p. 411, corroborates the commonly accepted opinion that it causes an acceleration of the heart's action and a dilatation of the peripheral arteries. The notion that it causes a fall in blood pressure, he proves to be unfounded and erroneous. His experiments show that instead of a fall a slight rise in pressure is recorded by the sphygmomanometer.

I do not wish to be understood as advocating the routine use of nitroglycerin in the treatment of pneumonia, but I am convinced that it is of great benefit in the collapse following the crisis. It is especially indicated in the extreme cases in which the medullary centers are obtunded and pulmonary edema ensues, the heart muscle weakens, the extremities become cool and the skin cyanosed. In a number of cases in this condition, while full doses of strychnin, digitalin and normal saline solution were being administered, I have observed remarkable improvement to follow the addition of nitroglycerin. It should be given in the form of spirits of glonoin (U. S. P., 1890) dropped on the tongue every half hour (average dose, three drops), gradually withdrawing the drug after the desired result is produced.

As to the manner in which it acts, Dr. Loomis suggests that "it causes intrinsic changes in the circulation, increasing the supply of blood to the respiratory centers in the medulla, thus stimulating them."

I believe it to be a safe, quickly absorbed, rapidly diffused stimulant, tending to restore the circulatory equilibrium and especially valuable in the treatment of collapse.

HORACE W. SOPER, M.D.

Association News

A Correction to the Minutes of the House of Delegates.

Dr. Alexander R. Craig of Pennsylvania, chairman of the Reference Committee on Amendments to the Constitution and

By-Laws, has called attention to the fact that in the minutes of the Boston session of the House of Delegates, printed in THE JOURNAL, June 16, page 1875, in the report of the Reference Committee, the amendment to Chapter 10, Section 7, of the By-Laws was inadvertently printed as a part of the report of the committee. This amendment was proposed at the Portland session and was referred to the Reference Committee on Amendments to the Constitution and By-Laws. On investigation this committee found the amendment to be in conflict with the Constitution and reported instead the substitute amendment to Article 8 of the Constitution, which, under the rules, was held over for one year before action. At the Boston session the committee reported in favor of this amendment to the Constitution and it was adopted. In making up the minutes the original amendment, which had been discarded in favor of the substitute, was unintentionally included in the report of the committee.

Marriages

LEWIS M. EASTMAN, M.D., to Miss E. May Hines, both of Baltimore, June 5.

J. LEO DEVINE, M.D., to Miss Marie E. Davis, both of Lansford, N. D., June 6.

GRANT GOODWIN, M.D., to Miss Eva H. Sidle, both of Monticello, Ind., June 6.

CHARLES A. KREUTZER, M.D., to Miss Helen Kramer, both of Milwaukee, June 27.

LEWIS B. GAINES, M.D., to Miss Ethel Alexander, both of Atlanta, Ga., June 12.

J. ROBERT CAYWOOD, M.D., to Miss Elizabeth Barber, both of Piqua, Ohio, recently.

EDGAR BOONE WILCOX, M.D., to Miss Margaret Bevan, of Oskaloosa, Iowa, June 12.

JOHN B. HALL, M.D., Boston, Mass., to Miss Mary Harriet Curtis of Chicago, June 27.

FRANK M. RIDLEY, M.D., JR., La Grange, Ga., to Miss Mabel Hood, of Baltimore, recently.

ROY C. GLANN, M.D., Bronson, Iowa, to Miss Bertha Shedd, of Holly Springs, Iowa, June 6.

WILLIAM A. HACKETT, M.D., to Miss Adele Hagemeister, both of Detroit, Mich., June 14.

LOUIS PROUDFIT, M.D., Osceola, Ind., to Miss Grace B. Sawyer, of Mishawaka, Ind., June 14.

VICTOR J. LA ROSE, M.D., Mandan, N. D., to Miss Rose McHugh, of Bismarck, N. D., June 12.

GEORGE CARROLL LOCKARD, M.D., to Miss Louise Cummings Wright, both of Baltimore, June 12.

JOHN WALTER MARTIN, M.D., Colfax, Iowa, to Miss Fannie Leonore Benson, of Chicago, June 20.

ADONIRAM JUDSON QUIMBY, M.D., to Miss Gertrude Seabright, both of Blaine, Ohio, June 13.

THOMAS A. BURRAGE, M.D., Portland, Maine, to Miss Harriet G. Dyer, of Providence, R. I., June 12.

WALTER E. KEEHL, M.D., Battle Creek, Iowa, to Miss Sylvia Duncan, of Iowa City, Iowa, June 14.

LUTHER EMERICH, M. D., Saugerties, N. Y., to Miss Cordelia E. Parish, of Maryland, N. Y., June 13.

JOSIAH MEDBERY, M.D., Columbus, Ohio, to Miss Frances B. Lodwig, of Portsmouth, Ohio, June 19.

HARRY L. CRUTTENDEN, M.D., Morris, N. Y., to Mrs. Claudine S. Johnston, of Otsego, N. Y., June 12.

A. E. LEMON, M.D., Fresno, Cal., to Miss Daisy Mitchell, of Clinton, Mo., at Topeka, Kan., recently.

JAMES HAWLEY BURTENSHAW, M.D., to Mrs. Susan Dewey Holman, both of New York City, June 9.

PRENTISS BOWDEN CLEAVES, M.D., Cherokee, Iowa, to Miss Jane Delaplaine, of Tipton, Iowa, June 9.

WINFRED LEMAN POTTER, M.D., Homer, N. Y., to GEORGETTA ALLER, M.D., of Brooklyn, N. Y., June 12.

CHARLES SUMNER ROCKHILL, M.D., Cincinnati, to Miss Margaret Hackedorn of Toledo, Ohio, June 27.

JAMES KNIGHT QUIGLEY, M.D., Rochester, N. Y., to Miss Genevieve Searl, at Franklinville, N. Y., June 20.

Deaths

Oscar L. Dales, M.D. Cleveland Medical College, Medical Department of Western Reserve University, 1880, of Grand Rapids, Mich., a member of the American Medical Association, city health officer in 1897, a member of the board of health in 1903, and president of the board for a year and a half thereafter, a member of the Michigan State Medical Society, and of the Grand Rapids Academy of Medicine, and one of the most prominent physicians of central Michigan, died at the Union Benevolent Association Hospital, Grand Rapids, June 12, after a long illness, aged 49.

Henry C. Willison, M.D. New York University, New York City, 1872, superintendent of the Western Washington Hospital for the Insane, Stellacoom, and thereafter a resident of Port Townsend, for several terms president of the Washington State Medical Association, and twice a member of the State Board of Medical Examiners, died at his home, June 12, aged 61.

Charles Lee Fisk, M.D. College of Physicians and Surgeons in the City of New York, 1856, a member of the Massachusetts Medical Society, once vice-president of the Franklin District Medical Society and chairman of the local board of health, died at his home in Greenfield, Mass., April 21, from angina pectoris, after an illness of three weeks, aged 74.

Joseph Henry Widdifield, M.D. University of the Victoria College, Coburg, Ont., 1869, M. R. C. S., England, 1870, licentiate Royal College of Physicians, Edinburgh, 1870, member of the College of Physicians and Surgeons, Ontario, 1870, sheriff for the County of York since 1888, died suddenly at his residence in Toronto, June 3.

Francis Root Day, M.D. Rush Medical College, Chicago, 1883 a member of the American Medical Association, who went to the Sandwich Islands in 1890, and was soon after appointed physician to King Kalakaua, and became one of the foremost practitioners of Honolulu, died at his home in that city June 1, from pneumonia.

Tighlman Hunt, M.D. Medical College of Indiana, Indianapolis, 1872, a member of the American Medical Association, a prominent practitioner of Indiana for more than 40 years, died at his home in Plainfield, June 12, from cerebral hemorrhage, after an illness of two months, aged 68.

Daniel H. Hardaway, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861, surgeon in the Confederate service during the Civil War, died at his home near Blackstone, Va., June 7, from nephritis, after a short illness, aged 67.

Andrew D. Blanchard, M.D. Harvard University Medical School, Boston, 1846, surgeon during the Civil War stationed at Fortress Monroe, Va., for several years a practitioner of Lawrence, Mass., died at his home in Melrose, Mass., June 11, aged 83.

Heman D. Ure, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, formerly of Lexington, Ky., died in St. Louis, April 26, four hours after an accidental fall in which he sustained a fracture of the skull, aged 60.

James McGovern, M.D. University of Nashville, Medical Department, 1905, of Pom Nolen, Miss., died Feb. 16, from concussion of the brain, the result of a fall from his horse, while making a professional call five days before, aged 25.

James Morris Madden, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1860, of Brunswick, Ga., died in that city March 14, an hour after having been thrown from his buggy in a runaway accident, aged 63.

Edward Payson Jeffries, M.D. Harvard University Medical School, Boston, a surgeon in the army during the Civil War, died suddenly at his home in Avalon, Catalina Island, Cal., March 14, aged 70.

Henry R. Hundley, M.D. Hospital College of Medicine, Louisville, Ky., 1905, of Clay County, Ky., died in Flora Vista, N. M., recently, from tuberculosis, after an illness of one year, aged 28.

Charles Newton Mayson, M.D. Medical College of Georgia, Augusta, 1843, died at his home in Kingston, Ga., February 6, from senile debility, after an illness of sixteen months, aged 82.

Robert H. Richards, M.D. Manitoba Medical College, Winnipeg, 1901, surgeon of the steamer *Miowera*, committed suicide by shooting himself in his cabin on the steamer, June 16, aged 27.

Timothy J. Caldwell, M.D. Medical Department of the University of Iowa at Keokuk, 1861, formerly state representative and state senator, died suddenly in his apartment in Adel, Iowa, June 16, from senile debility.

Jennie B. Allen La Tourrette, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1892, died in New York City, March 15, from cancer, after an illness of two years, aged 58.

Clara Hazard, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1897, died at her home in Iowa City, June 14, after a short illness from uremia.

Charles Augustus Lampanius, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878, died suddenly from cerebral hemorrhage, June 13, at his home in Catonsville, Md., aged 53.

John C. O'Haire, M.D. Albany (N. Y.) Medical College, 1891, of Nassau, N. Y., died at the home of his mother in Watervliet, N. Y., June 16, after an illness of about three months.

Paul S. Sue, M.D. Detroit Medical College, 1869, for 37 years a practitioner at Fenton, Mich., died at his home, June 2, from paralysis, after an illness of five years, aged 59.

William Parker, M.D. College of Physicians and Surgeons of Ontario, 1877, died at his home at Westport, Ont., from anemia, June 6, aged 65 years.

Levin D. Collier, M.D. Department of Medicine of the University of Pennsylvania, a practitioner until 1871, died at his home in Salisbury, Md., June 12, aged 75.

G. W. Miller, M.D. Medical Department of Western Reserve University, Cleveland, 1881, was burned to death at his home in Brush Valley, Pa., June 15.

John Cooke Laurens, M.D. Louisville Medical College, 1896, died at his home in Mantoe, Va., June 14, aged 32.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 23, 1906:

Bradley, A. E., surgeon, left Fort Sheridan, Ill., on fifteen days' leave of absence.

Bevans, James L., asst.-surgeon, advanced to rank of captain.

Birmingham, H. P., surgeon, will take temporary charge of the office of the chief surgeon, Department of the Gulf, and of the attending surgeon, during the absence of the latter on sick leave. Major Birmingham will retain station at Fort McPherson, Ga., and make such visits to Department Headquarters and return as may be necessary.

Skinner, Geo. A., asst.-surgeon, granted twenty days' leave of absence on completion of his examination for promotion.

Kirkpatrick, Thos. J., asst. surgeon, reports for duty at U. S. Target Range, Waco, Ga., from temporary duty at Fort McPherson, Ga.

Kneedler, Wm. L., surgeon, ordered to report in person to Brigadier General Frederick Funston, U. S. Army, president of an Army retiring board at San Francisco, Cal., at such time as he may designate, for examination by the board.

Gilchrist, H. L., and Davis, Wm. T., asst.-surgeons, left from temporary duty at San Francisco, Cal., en route to rejoin station, Army General Hospital, Washington, D. C.

Wadhams, S. H., asst.-surgeon, left Fort Slocum, N. Y., on seven days' leave of absence.

Metcalfe, R. F., asst.-surgeon, left Columbus Barracks, Ohio, with recruits, en route to Fort Lawton, Wash.

Duval, Douglas F., asst.-surgeon, granted twenty days' leave of absence on account of sickness, to take effect on the expiration of present leave.

Ford, Clyde S., asst.-surgeon, ordered to proceed from New York City, N. Y., to Philadelphia, Pa., on official business pertaining to the inspection of certain articles manufactured for use of the Medical Department of the Army.

Ferguson, James B., contract surgeon, granted leave of absence for three months.

Hutson, T. Ogier, contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort McPherson, Ga., for temporary duty.

Campbell, George F., contract surgeon, sailed from San Francisco, Cal., June 15, on the *Thomas*, for Philippine service.

Hardis, Herbert I., contract surgeon, arrived at San Francisco, Cal., June 17, on the *Sheridan*, for leave of absence from the Philippines Division.

Baker, Charles L., contract surgeon, arrived at San Francisco, Cal., June 17, on the *Sheridan*, for leave of absence from Honolulu, H. T.

Whitaney, Jean C., contract surgeon, left Boise Barracks, Idaho, and arrived at Fort Casey, Washington, for duty.

Rhoades, Rex H., dental surgeon, arrived at Fort Sheridan, Ill., for duty.

Ware, William H., dental surgeon, left Fort Apache, Ariz., and arrived at Whipple Barracks, Ariz., for duty.

Daywalt, George W., contract surgeon, arrived at Key West Barracks, Fla., for temporary duty.

Watkins, Victor E., contract surgeon, left Fort Mansfield, R. I., and arrived at Plattsburg Barracks, N. Y., for duty.

Richardson, George H., contract surgeon, reported for temporary duty as surgeon of the transport *Buford*.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 23, 1906:

Woods, E. L., asst.-surgeon, detached from the Naval Academy and ordered to the *Kearsarge*.

Gill, J. E., asst.-surgeon, detached from the *Kearsage* and ordered home to wait orders.

Warner, R. A., surgeon, asst.-surgeon, detached from the Naval Academy and ordered to the *Louisiana*.

Butts, H., Garrison, P. E., Raison, T. W., asst.-surgeons, appointed asst.-surgeons, with rank of lieutenant (junior grade), from June 1, 1906.

Lee, A. E., asst.-surgeon, ordered to the Naval Hospital, Mare Island, Cal.

Steadman, W. G., Jr., Dollard, H. L., acting asst.-surgeons, ordered to the Naval Hospital, New York, N. Y.

Plummer, G. R., acting asst.-surgeon, reappointed acting asst.-surgeon for three years from July 1, 1906.

Parker, E. G., P. A. surgeon, detached from the *Pensacola*, July 9, and ordered to Washington, D. C., July 16, for examination for promotion, and thence home to wait orders.

Freeman, G. F., P. A. surgeon, ordered to special duty with the Surgeon General of the Navy.

Wheeler, L. H., asst.-surgeon, detached from the Naval Station, Cavite, P. I., and ordered to the *Helena*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended June 20, 1906:

Amesse, J. W., P. A. surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Gulfport, Miss., for temporary duty.

Stimson, A. M., assist.-surgeon, directed to rejoin station at Ellis Island, N. Y.

Collins, G. L., asst.-surgeon, granted leave of absence for three days from June 25, 1906.

de Valin, Hugh, asst.-surgeon, granted leave of absence for one day, June 16, 1906, under Paragraph 191 of the Regulations.

Bailey, C. Williams, acting asst.-surgeon, granted leave of absence for seven days from June 27, 1906.

McConnell, E. F., acting asst.-surgeon, granted twenty-two days leave of absence on account of sickness and three days annual leave from May 17, 1906.

Mason, W. C., acting asst. surgeon, granted leave of absence for five days from June 25, 1906.

Riemer, H. B. C., acting asst.-surgeon, granted leave of absence for seven days from June 14, 1906, under Paragraph 210 of the Regulations.

Stevenson, J. W., actlag asst-surgeon, leave of absence granted for thirty days from June 11, 1906, amended to be effective from June 18, 1906.

Walker, T. D., acting asst.-surgeon, granted leave of absence for eight days from June 8, 1906.

Achenbach, John, pharmacist, granted leave of absence for thirty days from May 3, 1906, on account of sickness.

Brown, F. L., pharmacist, granted le vaeof absence for one day, June 16, 1906, under Paragraph 210 of the Regulations.

Richardson, S. W., pharmacist, leave of absence granted for ten days from June 3, 1906, amended to read five days only

Troxler, R. F., pharmacist, granted leave of absence for seven days from June 13, 1906, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended June 22, 1906:

SMALLPOX—UNITED STATES.

Alaska: Nome, June 14-15, 6 cases (on schooner *Monterey*).
California: Los Angeles, June 2-9, 1 case.
Florida: General, June 9-16, 6 cases; Jacksonville, 3 cases.
Georgia: Augusta, June 4-11, 3 cases; Sapelo Island, to June 12, 6 cases.
Louisiana: New Orleans, July 9-16, 5 cases.
Michigan: Detroit, June 9-16, 2 cases.
Montana: General, May 1-31, 6 cases.
New York: Monroe, June 19, 1 case; Saratoga Springs, 1 case; New York, June 9-16, 4 cases.
North Dakota: General, April 1-30, 25 cases, 4 deaths.
Ohio: Cincinnati, June 8-15, 12 cases; Hamilton, May 12-19, 1 case; Youngstown, May 16-June 15, 3 cases.
Oklahoma Territory: Oklahoma, June 2-9, 8 cases, 1 death.
Oregon: General, May 1-31, 36 cases, 1 death.
Pennsylvania: Allegheny, June 9-16, 1 case; Pittsburg, May 26-June 9, 5 cases, 3 deaths.
Tennessee: Knoxville, June 9-16, 1 case; Memphis, June 2-16, 5 cases.
Utah: General, May 1-31, 79 cases.
Wisconsin: Appleton, June 9-16, 2 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, May 5-12, 4 cases; Freetown, May 11, present.
Belgium: Liege, May 19-26, 1 case, 1 death.
Brazil: Pernambuco, May 8-15, 5 deaths.
Chile: Antofagasta, May 20, present; Coquimbo, present; Iquique, epidemic; Talkahuana, present.
France: Paris, May 12-26, 16 cases.
Gibraltar: May 27-June 3, 2 cases.
Great Britain: Liverpool, May 26-June 2, 2 cases; London, May 26-June 2, 3 cases.
India: Bombay, May 15-22, 5 deaths; Calcutta, May 6-12, 57 deaths; Karachi, May 13-20, 15 cases, 11 deaths; Madras, May 12-18, 11 deaths; Rangoon, May 6-12, 23 deaths.
Italy, General, May 25-31, 27 cases.
Peru: Callao, May 12-19, 1 case.

CHOLERA—FOREIGN.

India: Bombay, May 15-22, 20 deaths; Calcutta, May 6-12, 42 deaths; Rangoon, May 6-12, 4 deaths.

YELLOW FEVER.

Costa Rica: Limon, June 20, 1 case.
Cuba: Habana, June 18-21, 2 cases.
Honduras: Pimienta, May 19-23, 20 cases.
Mexico: Merida, May 27-June 9, 3 cases, 1 death.
Case reported at Coatzacoalcos in report for June 8, 1906, found not to be yellow fever.

PLAGUE—INSULAR.

Hawaii: Honolulu, June 15, 1 death.

PLAGUE—FOREIGN.

Australia: Brisbane, April 28-May 5, 1 case, 1 death; Rockhampton, April 28-May 5, 1 case.
Brazil: Pernambuco, May 1-15, 1 death.
Egypt: General, May 17-31, 34 cases, 12 deaths; Alexandria, May 29, 1 case; Port Said, May 26, 2 cases, 1 death.
India: Bombay, May 15-22, 511 deaths; Calcutta, May 6-12, 92 deaths; Karachi, May 13-20, 144 cases, 135 deaths; Rangoon, May 6-12, 69 deaths.
Peru: Lambayeque, May 6-13, 2 cases; Lima, April 30-May 13, 9 cases.

Book Notices

TEXT-BOOK OF MATERIA MEDICA FOR NURSES. Compiled by L. L. Dock. Fourth Edition, Revised and Enlarged. Cloth. Pp. 330. Price, $1.50 net. New York: G. P. Putnam's Sons, 1905.

This well-known text-book for nurses has been revised to conform to the new United States Pharmacopeia. Chapters have been added on serum therapy and on mineral springs and waters. The table of solutions is practical; it gives the name of the drug used and its usual form, percentage, strength, i. e., 1-1,000. grains to the fluid ounce, and amount per liter.

HANDBOOK OF SURGERY. By G. B. Buchanan, B.A., M.B., C.M., F.F.P.S., Assistant-Surgeon, Western Infirmary, Glasgow, etc. Cloth. Pp. 547. Price, $2.75 net. New York: William Wood & Co.

This is intended as a manual for students and is chiefly a work of compilation. The subject matter is divided into three sections: 1. General Surgery. 2. Surgery of Special Tissues. 3. Injuries and Diseases of Special Regions. Each of these is in turn subdivided. There is a lack of detail regarding the technic of the surgical measures indicated in the various conditions discussed, and, as the book is intended for students, the omission is a grave one.

DIE KRANKHEITEN DES VERDAUUNGSKANALS (Oesophagus, Magen, Darm). Ein Leitfaden für praktische Aerzte. von Dr. Paul Cohnheim, Spezialärzt für Magen-und Darmkrankheiten in Berlin. Mit 17 Abbildungen. Paper. Pp. 247. Price, 5.60 m. Berlin: Verlag von S. Karger. 1905.

Cohnheim divides his book into two parts—general and special. In the first he considers the history of the patient, the physical and chemical examination, and the various methods employed for conducting these and apparatus needed. Stress is laid on the importance of the history and a thorough and painstaking physical examination which often leads to a correct diagnosis. In the second part are discussed the diseases of the several parts of the digestive tract. The book abounds in many excellent diet lists and useful prescriptions.

RELATIONS OF DISEASES OF THE SKIN TO INTERNAL DISORDERS, with Observations on Diet, Hygiene and General Therapeutics. By L. D. Bulkley, A.M., M.D. Cloth. Pp. 175. Price, $1.50. New York: Rebman Co., 1906.

This consists of a series of lectures delivered at the New York Skin and Cancer Hospital during the spring of 1905. Bulkley believes that by the separation of dermatology as a specialty attention has been directed from the relations existing between the skin and the general economy to the microscopic details and the study of local features. The predisposing and exciting causes of skin lesions are briefly considered, and the urticaria resulting from gastrointestinal derangements. He mentions copaiba, quinin, aconite, belladonna, ergot, opium and turpentine as vegetable drugs which may cause skin eruptions, and iodin and bromin and their compounds, arsenic and certain of the coal-tar preparations such as antipyrin, phenacetin, sulphonal as mineral drugs which may cause skin lesions. Digestive, excretory, respiratory, nervous and cutaneous disturbances are discussed in their relation to skin diseases. Lecture IV, the last, is devoted to a consideration of the diet in these cases and to hygiene and the general therapeutics of skin diseases.

LABORATORY GUIDE IN EXPERIMENTAL PHARMACOLOGY. Directions for the Course Given in the University of Michigan. By C. W. Edmunds, A.B., M.D., and A. R. Cushny, A.M., M.D. Cloth. Pp. 246. Price, $1.50. Ann Arbor, Michigan: George Wahr, Publisher.

This work serves as a guide for the student in making laboratory experiments along the line of pharmacology. Experiments with many drugs are carried out and observed on animals. Only those preparations with which the student most commonly comes in contact are included in these experiments, such as the more important hypnotics, the cerebral and spinal excitants, the heart stimulants and depressants as demonstrated by their action on the heart of the turtle and dog. The effects of the suprarenal extract and the nitrites on the blood pressure may be demonstrated. The experiments for the most part are simple and practical and are of value in impressing the student with an accurate knowledge of the physiologic action of a drug in order that he may prescribe it in a proper therapeutic manner.

INTRODUCTION TO MATERIA MEDICA AND PHARMACOLOGY, Including the Elements of Medical Pharmacy, Prescription Writing, Medical Latin, Toxicology, and Methods of Local Treatment. By O. T. Osborne, M.A., M.D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the Yale University. Cloth. Pp. 167. Price, $1.00 net. Philadelphia: Lea Brothers & Co., 1906.

The object of this book, as stated by the author, is to introduce the student to the study of pharmacology and therapeutics, "with the purpose constantly in mind of preparing him for the practice of medicine, i. e., to care for the sick", and this worthy aim is carried out in the book. Chapter 5 on special treatments and Chapter 6 on simple food preparation contain valuable information on matters in regard to which the medical student's education usually is neglected. The book is practical in every way and will be found helpful to those who feel themselves weak in pharmacology. While errors are few, it should be noted that nitroglycerin is not a nitrite (p. 33), and that calomel is not a synonym for mercuric chlorid.

DISEASES OF INFANCY AND CHILDHOOD. Designed for the Use of Students and Practitioners of Medicine. By H. Koplik, M.D. Second edition, thoroughly revised and enlarged. Illustrated with 106 engravings and 33 plates. Cloth. Pp. 885. Price, $5.00. Philadelphia: Lea Brothers & Co., 1906.

This work has been revised, many chapters having been entirely rewritten. The chapters on "Management and Hygiene of the Normal Infant" and "Methods of Examination" are very practical. Section II of the book is devoted to the subject of infant feeding and this section alone would make the book a valuable one. Tables are given showing the composition of colostrum, normal breast milk, cow's milk, etc., and the differences in composition in human milk and that of the cow, goat and ass. Methods of modifying and Pasteurizing cow's milk are discussed in detail, and the disadvantages of sterilization as compared with Pasteurization are noted. Directions are also given for preparing the various artificial foods. Contraindications for maternal nursing are noted and the qualifications for a good wet-nurse stated. The various diseases of infancy and childhood are considered, including congenital syphilis. The illustrations are good, especially the colored ones.

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Academy of Ophthal. and Otolaryn., Detroit, Aug. 30-Sept. 1.
Western Surgical and Gyn. Ass'n., Salt Lake City, Aug. 31-Sept. 1.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held at Cleveland, Ohio, May 30, 31 and June 1, 1906.

The President, DR. ALBERT VANDER VEER, of Albany, New York, in the Chair.

Surgery of the Large Intestine.

DR. GEORGE E. ARMSTRONG, Montreal, Canada, said that in a very large percentage of cases of early malignant disease of the intestine there is a regular daily rise of temperature, amounting to two or more degrees, and that if this proves to

be a general rule, it will be a valuable sign. Another symptom complex referred to was the frequently recurring colicky pains associated with constipation; and when the cancer is situated in the rectum, the sudden development of hemorrhoids. These tumors sometimes lie under the liver, or under the spleen, so that they cannot be detected with the patient in the recumbent position, and yet become apparent when he stands up, or they may be discoverable one day, and the next be impalpable in any position that the patient may assume. A distinguishing feature of these tumors is their mobility, particularly mobile under the hand, and most marked when situated in the transverse colon and sigmoid.

The treatment of these cases was discussed from two points of view. First, the relief of intestinal obstruction; second, the radical removal of the growth. In the former good judgment has more to do with the results than manual dexterity or knowledge of technic, and in the case of patients with distended abdomen, stercoraceous vomiting, general peritonitis, and intestinal walls sodden and friable, nothing more should be attempted than drainage of the bowel through the appendix or an appropriately placed Paul tube. Many deaths occur through trying to do too much under such circumstances. Ideal surgery should not be considered; it is a question of expedience and of temporizing, and of giving a patient time to recover from the toxemia present. Short circuiting of the growth and its removal at the same or some subsequent time is a cleaner and more satisfactory procedure than colostomy, and a method which offers opportunity for the removal of glands. The delivery of the growth, drainage of the bowel with a Paul tube, subsequent removal of the tumor, and the establishment of anastomosis by Mikulicz's kentrotribe is commended as a safe procedure, but by no means ideal, as it is dirty, and does not generally permit thorough removal of glands.

In the so-called high cancer of the rectum good results have been obtained by the sacral methods. By this route the disease may be removed at a high level and the operation is comparatively bloodless. On the other hand it opens up a large field which too often becomes infected in spite of all precaution. The combined abdominal and perineal method is the most conservative, the safest and most radical of the methods so far employed. Through the abdominal incision the operator can get as far above the disease as is necessary. The glands may be thoroughly removed and involvement of the peritoneum or bladder, if present, may be recognized and dealt with as may seem best. The greater part of the operative work may be accomplished before the intestine is opened or the peritoneum exposed to infection. If there is sufficient of the lower end left after the removal of the disease, the intestinal canal may be restored by a sigmoidorectostomy, or an ileosigmoidostomy. If this is impossible, the upper end may be brought out through a colotomy wound, and a permanent artificial anus established. The lower end can then be separated by blunt dissection, pushed down behind the bladder, and the peritoneum closed over it much in the same way as after extirpation of the uterus. The lower end may then be removed by the perineal route. If the patient's condition is not good, the removal of the lower end of the rectum may be delayed for a few days, but in four cases in which the author removed high rectal disease by this method the patients have been remarkably free from shock, and have left the table in good condition.

Cancer of the Sigmoid and Rectum.

DR. CHARLES H. MAYO, Rochester, Minn., said that cancer of the colon is a disease in a removable structure which may remain essentially local for a long period. In the sigmoid, if the tumor is not removable, short circuiting the bowel is advisable. Low cancer of the rectum can be removed by the perineal route. Those cases which lie above easy reach are best removed by a combined operation, abdominal and perineal. If the muscular and nerve tissue can be preserved, the anal outlet is maintained; if it must be destroyed, an inguinal anus is made. If within (easy) reach and inoperable, curetting and cautery is preferable to colostomy. In five years Drs. W. J. and C. H. Mayo operated on 26 patients by the combined method. 7 died from the operation or within one month; 10 were operated too recently to be of value, but are alive and well; 7 lived over one year, 5 are alive now; 5 lived over two years, 3 are alive now; 3 lived over three years, 2 are alive now. Only 4 survived the operations made over three years ago, and 50 per cent. are alive and well, so that the results of cure are favorable, although the operative mortality is high.

Cancer of the Colon.

DR. WILLY MEYER, New York, pointed out the paramount importance of early diagnosis and timely operation, at the same time admitting the great difficulty in reaching such a consummation, chiefly on account of the usually latent development of the disease. He cited a case in which the patient had apparently been in perfect health up to within a few weeks of his death. The symptoms then developing pointed to malignant tumor of the anterior mediastinum. Postmortem showed primary carcinoma of the colon at the splenic curvature, with metastatic involvement of the mediastinum. Of the subjective symptoms that of greatest value is periodic contraction within the abdomen. It occurs usually in more or less the same locality, and, in an advanced stage of the disease, is frequently followed by a distinctly audible gurgling sound. He calls this sign "subjective stiffening" of the gut, in contradistinction to the "objective stiffening," or tetanic recurrent peristalsis of the gut proximal to the seat of the disease. In one of his own cases, a carcinoma of the transverse colon, this "subjective stiffening" of the gut represented the only symptom complained of during many months. Among the objective signs the author mentions the appearance of a palpable tumor in 40 per cent. of the cases only, chronic circumscribed meteorism, objective stiffening of the gut, and the sudden formation of capillary angiomata and pigmented warts in the skin of the abdominal wall, the latter an unfailing pathognomonic sign of cancer of the colon, provided the history and palpation point to this disease.

The age of the patient is not a contraindication to radical operation, so long as his general condition is still good. In greatly debilitated patients, palliative operation only can be performed, but if done at an early stage of the disease the objectionable artificial anus, otherwise unavoidable, may be obviated by way of a lateral anastmosis.

Surgery of Tuberculosis of the Colon.

DR. L. L. MCARTHUR, Chicago, submitted the following propositions: 1. Intestinal tuberculosis is far more frequent than has been in the past accepted. 2. Its primary nature is admitted to be 5 per cent. by the pathologists, who also claim that 25 per cent. of all human tuberculosis gains its entrance through the intestinal mucosa. 3. Either the "ulcerative" or the "hypertrophic" type of this disease is (at some time) amenable to surgical interference. 4. Interference should be either by excision or exclusion. 5. Surgical intervention in these forms of intestinal disease is better borne than in any other. 6. Early recognition by the internist and interference by the surgeon will eliminate a large proportion of cases now classified as tabes mesenterica.

Myomata of the Large Intestine.

DR. W. L. ESTES, South Bethlehem, Pa., said that true myomata of the large intestine are almost unknown. So-called myomata of the large intestines are histologically fibromyomata and they are practically always fibroleiomyomata. The rectum is the part of the large intestine which in the great majority of the cases is involved, although there are a few cases on record of myomata of the cecum, of the ascending and of the descending colon. Estes gives the history of a very remarkable case of stenosis of the sigmoid flexure, which resulted from enormous and symmetrical hyperplasia, chiefly of the muscular coats of the gut, and which formed a well-marked tumor of the intestine. The intestine was strictured, almost entirely closed, within the area of the tumor, not above it, nor below it, and the stenosis was produced by the bulk of the hyperplastic muscular layer. Histologically, it was classed as a myofibroma. He has not been able to find any mention in the literature of a similar case. He believes that his case is very rare, and that it indicates the possibility of a fourth class of tumor of the large intestine, which belongs to the myomatous groups.

Surgery of Carcinoma of Rectum and Sigmoid Colon.

DR. JOS. C. BLOODGOOD, Baltimore, Md., stated that in the majority of these cases the hope of future progress depends more on earlier recognition than on improvement in operative technic. The only partially settled problem is in regard to the extent to which glandular dissection shall be carried. At the present time the majority of authorities favor a restricted glandular operation in view of the higher mortality of the more extensive dissection and the slight probability of a cure if these more remote glands are involved. In planning for the complete extirpation of these growths one should resect a very generous portion of the apparently uninvolved intestine on each side of the palpable tumor, because infiltration of the new growth along the submucosa beyond the open ulcer is a common occurrence. The next most important step is to include with this portion of the bowel a large area of mesocolon, whether the glands be palpable or not.

In selecting the point for the division of the bowel above and below the tumor one should have in mind not only the complete removal of the tumor, but to select a point for division which shall have, after the resection of the mesenteric area, a proper blood supply. The decision as to the method of suture after the resection is a somewhat difficult one. As a rule, closure of the two ends with a lateral anastomosis is the safer procedure. As the tumor of the colon approaches the promontory of the sacrum new problems arise. In some instances there is sufficient healthy bowel below the tumor to allow a resection and suture within the abdomen. In other cases, on account of the position of the tumor, or its infiltration analwards, the resection can only be accomplished completely by a combination of an abdominal and extra-abdominal or sacral incision. He has endeavored not only to fulfill the requirements of a complete removal of the malignant disease, but to attempt, after its removal, a restoration of the continuity of the bowel by an end to end anastomosis. In one case he was able to perform the complete resection of a carcinoma situated just above the promontory of the sacrum entirely within the abdomen. The condition of the patient, however, forbade at that time an attempt at suture. At the present writing, eighteen months since operation, the patient is content with the colostomy. In a second case it was necessary to finish the resection through a sacral incision. In this instance it was possible to save, with a good blood supply, eight inches of the lower end of the rectum, which rendered an end to end suture in the sacral wound possible. The result at the present time is unusually satisfactory. In the third and most recent case it was possible to resect and suture entirely within the abdomen.

A careful study of the cases in the literature appears to justify the following criticisms: First, colostomy has been performed too frequently as a primary operation. He believes that colostomy is not indicated unless the patients are first seen in the condition of an acute obstruction, or their condition is so critical from chronic obstruction that a prolonged operation is contraindicated. If possible, the entire operation should be performed at one sitting. Second, it is unnecessary to ligate the vessels so far from the mesenteric border of the colon. Resection of the glands up to this point is not indicated. If they are involved, his experience demonstrates that the condition is hopeless for an ultimate cure. The disadvantage of ligation of the vessels so far from the colon is due to the fact that, after such a ligation, a more extensive resection of large intestine is necessary in order to leave the bowel with proper circulation. Third, too much bowel below the tumor is removed.

(To be continued.)

MASSACHUSETTS MEDICAL SOCIETY.

Annual Meeting, held in Boston, June 12-13, 1906.

(Continued from page 1937.)

Owing to the recent session of the American Medical Association the subject of "Diseases of the Bile Passages," including the liver, gall-bladder and pancreas, was the only scientific topic presented for discussion.

DR. VICTOR C. VAUGHAN of Ann Arbor, Mich., in the "Shattuck Lecture" considered "The Chemistry of the Bacterial Cell," and in the "Annual Discourse," delivered this year by Dr. John L. Hildreth, of Cambridge, "The Relation of the General Practitioner to the Specialist" was discussed.

The question of amending the by-laws relating to membership in the society provoked an animated discussion. For thirty years or more the society has forbidden its members to practice "spiritualism, homeopathy, allopathy, Thomsonianism, eclecticism or any other irregular or exclusive system, generally recognized as such by the profession, or declared so by the councillors of the society." Practically, homeopaths formed the class chiefly under discussion, and a committee, of which Dr. F. C. Shattuck, of Boston, was chairman, after calling attention to the demise of some of the other sects, presented an amendment allowing, under strict educational qualifications, one to become a member, provided he "does not profess to treat disease by, or does not intend to practice any exclusive system, generally recognized as such by the profession, or declared so by the councillors of the society." After considerable discussion the amendment was adopted.

More than twelve hundred members sat down at the annual dinner at which addresses were made by President Charles W. Eliot of Harvard University, and Judge Henry N. Sheldon, one of the trial justices in the Tucker murder case, who presented some considerations on the value of circumstantial evidence.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-first Annual Meeting, held at Hot Springs, Va., May 22-24, 1906.

(Concluded from page 1967.)

Surgery of Female Pelvic Organs.

DR. SETH C. GORDON, Portland, Me., presented the following conclusions: "1. The Battey operation does much good in the practice of men of experience and skill in operating. The results in many cases are often delayed for obvious reasons. Undoubtedly much more harm than good is done because of inexperience in pathology and operative skill. 2. So-called conservative gynecology in too many instances is but a conservatism of diseased organs, in whole or in part, and not conservative of the health of the patient. 3. The sentiment is changing from this extreme conservatism to a more careful consideration of the future condition of the patient, as instanced in a more general belief in hysterectomy for fibroids of the uterus instead of myomectomy. 4. In resections of the adnexæ regard should be paid to the history of the cause of infection rather than to the macroscopic condition, as the virulent germs produce changes that require total removal, together with the uterus, as the only safety to the patient. 5. In malignant disease of the uterus efforts should be made to discover it early, when panhysterectomy might be done to advantage. Advanced cancer may be treated tentatively by curettement and actual cautery. The extremely extensive operations of attempting removal of a wide margin around the uterus have produced unsatisfactory results, with a very high mortality and early recurrence. 6. Surgical measures for displacements are still *sub judice* so far as any agreement as to any special method is concerned.

Conservative Operations on the Ovaries.

DR. J. MONTGOMERY BALDY, Philadelphia, said that senile sentiment has no place in deciding what should be done in the presence of a diseased ovary. Nor is the anatomic limit of disease and health in this organ the only thing to consider. It is difficult to tell what is and what is not disease in the ovary, even microscopically, and in a very large number of instances it is necessary to decide the question by the symptoms and not by the makeup of the organ. Conservative operations on the ovaries are so commonly mixed up with the removal of adhesions, replacement of the uterus and other accompanying procedures that it is utterly impossible to distinguish between results. Immediate results and end results are different. End results are not always reliable. It is only by the survey of the whole case, general as well as local, together with a profound practical knowledge of human nature, as well as a sublime respect for the vagaries of women's nerves, that one appreciates the full truth. Again, end results are important in that large

numbers of women are operated on, the lesions corrected, and yet no good results or only temporary results are obtained.

Putting the facts squarely before the ordinary woman, giving her full, unprejudiced freedom of decision, in twenty-four cases out of twenty-five she will decide for a complete operation. Sentiment exists largely in the physician, not in the woman, and the few who are influenced by it have been educated up to that point by physicians who object to the removal of the ovaries because they have found on analysis of a group of cases that "78 per cent. subsequently suffered a notable loss of memory, 60 per cent. were troubled with flashes of heat and vertigo, 50 per cent. became irritable, less patient, and some so changed as to give way to violent and irresponsible fits of temper; 42 per cent. suffered more or less from mental depression, 35 per cent. increased in weight, and some became abnormally fat," the general intelligence being such as not to appreciate that the picture drawn as one of bad results following faulty judgment consists merely of the symptoms of the natural and inevitable menopause and which would in a short time leave the woman as surely as they came to her.

End Results in One Hundred Cases of Conservative Operations on the Uterine Appendages.

DR. WALTER P. MANTON, Detroit, Mich., said that in order to ascertain his own experience along conservative lines he had taken 100 cases from his notebooks. Of the 100 women, 30 were single, 64 married and 6 not noted. The following operations were done: On the ovaries, resection of both ovaries in 17 cases, right ovary in 26 cases, left ovary in 13 cases. Puncture of both ovaries in 22 cases, right ovary in 8 cases, left ovary in 14 cases. In 19 women the ovary of one side was found to be so largely involved as to require removal, the right in 6 instances, the left in 13. Resection was done in both tubes in 13 cases, right tube in 4 cases and left tube in 9 cases. It was found necessary to remove one tube in 10 of the patients, the right in 4 and the left in 6. The opposite ovary was left untouched or was resected.

In the 100 women the immediate results were entirely satisfactory, that is, all the patients recovered from operation and were relieved from the sufferings of which they formerly complained. The mortality was, therefore, *nil*, and the results temporarily perfect. The majority of these patients remained under observation for at least three months. Following this quarter year, 61 are known to be well at present, 31 have been lost sight of, 5 are doubtful, complaining of pelvic pain referable to the resected ovary, but in which no change could be detected on examination, and 3 required a second operation for the removal of the conserved organ, which in each instance had undergone further cystic degeneration. Of the 64 married women, 55, or 85 per cent., and of the 30 single women, 23, or 75 per cent., were well a year following operation. Of 64 patients of whom knowledge was had a year or more following operation, 41 were married. Of this number, 6, 14 per cent., subsequently became pregnant; 4 of these were delivered at term, 1 aborted at the third month and 1 is still pregnant.

From the foregoing he maintained that his own statistics and those of others show that the conservative surgery of the ovaries and tubes, having passed the experimental stage, has established itself as a legitimate and successful operation in all the conditions to which it might be applied properly, and that it should be the operation of choice in all instances during the child-bearing age, in which the diseased state of the organs admits of its employment.

Technic of the Repair of Large Vesical Fistulae.

DR. WILLIAM S. STONE, New York, summarized his paper as follows: 1. The basic principle in the repair of large fistulæ is an extensive separation of the bladder walls, especially of the upper part in front of the cervix, by means of which it is readily sutured to the more fixed lower portion. 2. The uterus, which has been made movable by the free dissection entailed in the separation of the bladder, or by an additional incision posteriorly in some cases, is a most valuable supplement in filling up the opening in the vaginal wall. 3. With these principles applied it is a matter of little importance what kind of suture material is used or what relation the vesical and vaginal suture lines have to each other.

Treatment of Vesico-Vaginal Fistulae.

DR. I. S. STONE, Washington, D. C., said experience has shown that wounds of the bladder made during the performance of a surgical operation heal readily after careful application of sutures. This occurs after injuries at the base, as in vaginal hysterectomies, as well as in those at or near the fundus, which are comparatively frequent in operations on the uterus for the removal of tumors. Two principal causes contribute to this result. One is the healthy condition of the bladder itself and another is the ease with which the muscular wall of the organ can be approximated when absolutely free from the uterus or vaginal wall. It has been his experience that the very large fistulæ afford such free drainage as to secure perfectly healthy mucus surfaces of both bladder and vagina, the only exception being in one bedridden patient who had been indifferently cared for and whose fistula was covered with incrustations. It will be found in many instances that large fistulæ persist because they are associated with injuries of the vagina, of a serious character, which produce extensive cicatricial contraction. Such an injury is more than a mere incision or laceration of the vaginal wall, and includes the connective tissue also, which becomes a permanent retractor to the margins of the fistula and prevents its closure until surgical relief is afforded.

He feels confident that any fistula can be closed satisfactorily by first liberating the bladder from any adherent surface or organ which prevents its closure, and then by uniting the margins of the fistula with catgut, and afterward, at the same sitting, by utilizing the vaginal wall of the uterus as might be needed to support the line of sutures in the bladder wall. This is opposed to the contention of those who favor suture of the supporting base only the vaginal wall, for example. Finally, one might draw the vaginal walls forward after suitable dissection, or he might utilize the uterus, as suggested by Kelly, or by using the Freund method of turning the fundus downward and then forward into the opening. This last method is objectionable because it necessitates a new opening into the cavity of the uterus to provide for the escape of the menstrual flow. He has overcome the disadvantages of Kelly's method and has obtained abundant mobility by drawing down the uterus, cutting away the anterior vaginal wall and dividing the broad ligaments so as to cause less traction on the sutures. This has also been accomplished by separating the bladder from the uterus and broad ligaments through an abdominal incision and by a division of the broad ligaments at their upper border, where they are attached to the uterus. This method has been used for the relief of fistula of any description, and the profession owes acknowledgment to Mackenrodt for priority and for clearly establishing its usefulness in almost any fistula of whatever shape, position or size. In the treatment of small fistulæ the vagina is divided longitudinally, the bladder is separated from the vaginal wall, then united, and the vaginal wall closed, each independently. He has found its best and most useful application in the closure of large fistulæ and where failure has resulted after previous attempts at cure.

Shortening of Round Ligaments Within Inguinal Canals Through a Single Suprapubic Transverse or Median Longitudinal Incision.

DR. REUBEN PETERSON, Ann Arbor, Mich., said that in his hands the Alexander operation for shortening the round ligaments has proved the most satisfactory of all the operations for backward displacement of the uterus. However, the operation has two great disadvantages: It is limited to freely movable uteri and it necessitates two incisions. In the operation now employed by Peterson the work is performed (1) through a single incision, preferably through a suprapubic, transverse incision not more than three inches in length; (2) the external rings are easily exposed by such an incision; (3) they can be readily, although not so easily, exposed by the ordinary median longitudinal incision; (4) the operation is applicable to adherent as well as movable uteri, since the abdomen is opened in every instance; (5) by following out a certain technic the round ligaments can be definitely and quickly located in every instance.

Hypernephroma Renis.

DR. J. WESLEY BOVÉE, Washington, D. C., reported two such cases and said that hypernephroma is the commonest form of

kidney tumor. Many kidney tumors formerly thought to spring from kidney structure are now known to originate in islands of suprarenal tissue included in the kidney, the so-called renal nests. Such deposits of renal tissue are common along the genitourinary tract, are usually benign in character, but may become malignant. The treatment consists of removal when they cause symptoms.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

The Removal of Foreign Bodies from the Eye.

Among the most frequent minor accidents that mankind is heir to, according to A. R. Baker, in the *Cleveland Medical Journal*, is the danger of the introduction of foreign bodies in the eye. In the removal of these bodies Baker states that the cornea should be exposed to a good light and that the physician should have perfect eyesight, a steady hand and good judgment. Before attempting to remove a foreign body two or three drops of a 2 per cent. solution of cocain should be instilled into the eye at intervals of one or two minutes. He speaks of the importance of having on hand a freshly prepared solution of cocain, and says that no solution should be used which is more than twenty-four hours old. Consequently he advises the method of preparing solutions from hypodermic tablets. A tablet containing 2 3/5 grains to the dram of boiled water will make approximately a 2 per cent. solution. In cases in which the eyes are irritable or sensitive to light, a drop of the cocain solution in the uninjured eye will greatly facilitate the ease of the removal of the foreign body from the effected eye. The lids should be thoroughly cleansed, as well as the surgeon's hands and all instruments used in this connection.

The great danger lies not infrequently in the fact that the patient immediately rubs the eye when a foreign body has entered it, with his dirty fingers or a dirty handkerchief, thus increasing the probability of infection. On the other hand, if it were let alone, profuse lachrymation in a great many instances would dislodge the body.

The most frequent form of infection is that of an acute catarrhal conjunctivitis, generally brought on by the application of bread and milk, flaxseed or other poultices. These substances usually contain numerous pathogenic bacteria placed on a splendid receptacle, which is the conjunctiva. If these cases are not of long standing, or if the secretion is of a purulent character, the eye may be washed out with sterile water or a saturated solution of boric acid, followed by a 2 per cent. solution of some silver preparation, and this followed by repeated flooding of the eye with a boric acid solution. If an ulceration of the cornea should arise, the prognosis, of course, is more grave. If this ulcer shows a "dirty" appearance, all the shreds of the broken-down epithelium should be scraped off with a needle, or any other instrument used for removal of foreign bodies, then a fine probe or toothpick wrapped in a piece of sterilized cotton should be dipped into a solution of bichlorid of mercury (1 to 250 to 1 to 500), and applied to the ulcer; at the same time giving the cotton a slightly rolling motion, so as to touch every particle affected. Great care should be used to prevent an excess of the bichlorid in order to avoid coming in contact with the healthy cornea. If there are no conjunctival complications, a compress bandage with dry dressings may be used, but if there is any suspicion of a conjunctivitis, past or present, the eye should be left open. If pain is present, even though there be no evidence of an iritis, he recommends that a solution of atropin, 4 grains to the ounce, be dropped into the eye two or three times a day. The use of hot fomentation is, as a rule, the most valuable adjunct to this treatment. They should be used for from twenty minutes to an hour, and repeated two or three times a day, or more frequently if the pain persists.

The Treatment of Psoriasis.

P. S. Abraham, in the *British Medical Journal*, states that if he were asked as to the comparative efficacy of external and internal treatment of psoriasis, he should prefer the external treatment. In his experience the eruption of psoriasis practically always disappears under application of some tar preparation, especially chrysarobin; even where no internal medication has been carried out. However, he advises both external and internal medication, although there is no specific for psoriasis. He regards arsenic of benefit as a nerve tonic, especially in those patients who have a neurotic tendency, when it may be pushed to its toxic effects and cause a temporary disappearance of the eruption. Another substance which influences the nutrition of the skin and sometimes has a beneficial effect on psoriasis is thyroid extract. He remarks, however, that after the treatment of some 65 patients, extending over a period of several months, that only a few showed improvement. In more than half the cases the result was either negative or the eruption actually increased while the preparation was being administered. He advises the administration of magnesium sulphate with a little iron and some bitter tonic as of value in regulating the bowels, promoting excretion and improving the general nutrition. In every case in which there is the least suspicion of a uric acid diathesis, he recommends the administration of salicylates, salicin and alkalies. As regards external remedies, he, as a rule, orders a thorough soaking of the skin for at least ten minutes in a weak tar bath every day, followed by a copious inunction with some ointment containing a tar preparation. He does not consider the exact preparation of any material importance. In this connection he prefers creolin as a preparation which will answer the purpose. He recommends as a bath 3i (4.00) of this preparation to six gallons of water, and as an ointment for the indurated patches on the extensor surface the following combination:

℞ Creolin 3i-ii 4-8
Acidi salicylici
Hydrargyri ammoniati, āā ..... gr. x .65
Lanolini q. s. ad 3i 30

M. Ft. unguentum. Sig.: Apply locally to the affected areas.

In some cases the addition of soft soap, 3ii-iii (8.-12.), and occasionally precipitate of sulphur gr. xv (1.00), to the foregoing combination, is recommended by the author.

He states in this connection that the proportion of the ingredients must be varied, either diminished or increased, or some of them perhaps entirely omitted, depending on special circumstances of the case, the idiosyncrasies of the patient and the parts affected. Good results, as a rule, are obtained from this outline of treatment within a few weeks. In those cases in which the progress is slow he adds chrysarobin, gr. x-xx (.65-1.30) to the foregoing ointment, especially when the case can be properly watched. In cases of psoriasis of the scalp he recommends the following combination:

℞ Hydrargyri ammoniati
Saponis mollis, āā 3i 4
Liquid petrolati 3i 30

M. Ft. unguentum. Sig.: Apply locally to the scalp.

He sometimes recommends the addition of resorcin or some tarry oil to the foregoing combination.

Diarrhea in Infancy.

The following combinations are recommended by Yeo in the treatment of diarrheas occurring in infancy:

℞ Sodii bicarb. ..... gr. iv .25
Pulv. rhei ..... gr. iss .09
Pulv. cinnamomi ..... gr. i .06

M. Ft. chart. No. i. Sig.: One such powder to be taken twice a day.

When curds of milk are present in the stools the following combination is recommended:

℞ Pulv. ipecac. et opii ..... gr. xv 1
Pulv. guaranæ ..... gr. 3 4 .05
Pulv. sacchari albi ..... gr. xlv 3

M. Ft. chart. No. x. Sig.: One powder every two or three hours.

In cases of profuse diarrhea without dyspeptic symptoms the following combination is recommended:

R.	Tinct. krameriæ	3ss 2 |
	Tinct. opii	m. iss |09
	Syr. simplicis	3iiss 10 |
	Aquæ destil	3iii 90 |

M. Sig.: One dessertspoonful every two hours.

In cases in which anemia is a factor following chronic diarrhea the following combination is of service:

R.	Ferri carb. sach.	|
	Pulv. ipecac. et opii, āā	gr. iss |09

M. Ft. chart. No. x. Sig.: Three or four powders daily.

In cases of fetid diarrhea, in which there is marked evidence of putrefaction with foul odor, the following is recommended:

R.	Ferri sulphatis	|
	Sodii salicylatis, āā	gr. xx 1 |30
	Glycerini	3iii 12 |
	Aquæ	3iii 90 |

M. Dissolve the sulphate of iron and the salicylate of soda separately and then mix. Sig.: One tablespoonful every three hours until the stools are blackened.

In summer diarrhea the following is of value:

R.	Decoct. hematoxyli (5 per cent.)	|
	Acidi sulphurici arom., āā	3ii 8 |
	Spiritus chloroformi	3vi 24 |
	Tinct. opii camph.	
	Tinct. card. comp., āā	3i 30 |

M. Sig.: One teaspoonful in water after each movement of the bowels.

In cases of ulcerative colitis Yeo recommends the following combination as a rectal injection:

R.	Argenti nitratis	3ss-i 2-4 |
	Aquæ dest.	Oi-ii 500-1 000 |

M. Sig.: Elevate the hips and allow the water to flow in slowly from a syphon bag.

In some cases of chronic diarrhea in adults the following is recommended:

R.	Tinct. catechu	|
	Tinct. kino, āā	3ii 8 |
	Tinct. opii	3i 4 |
	Spts. camphoræ	3iss 6 |
	Misturæ creta q. s. ad	3iii 90 |

M. Sig.: Two teaspoonfuls every four hours.

When the diarrhea is accompanied by flatulency the following combination is advised in adults:

R.	Tinct. opii	m. xv 1 |
	Ext. hematoxyli	gr. lxxv 5 |
	Syrupi aurantii corticis	3iiss 10 |
	Aquæ menth. pip. q. s. ad	3v 150 |

M. Sig.: One tablespoonful every two hours.

In atonic cases of diarrhea the following is of service:

R.	Acidi tannici	3ss 2 |
	Ext. opii	gr. 3 4 |05
	Ext. calumbæ	3ss 2 |

M. Ft. capsulæ No. xx. Sig.: One pill every three hours.

Medicolegal

State Board Law Valid—License Revocation and Review.

The Supreme Court of Nebraska holds, in Munk vs. Frink, that the act of 1891 creating a State Board of Health is not rendered void by the fact that it provides for compensation of its secretary by fees which are not required to be accounted for or paid into the state treasury.

A complaint filed before the State Board of Health for the purpose of procuring an order revoking the license of a physician is sufficient if it informs the accused, not only of the nature of the wrong laid to his charge but of the particular instance of its alleged perpetration. By section 580 of the Code of Civil Procedure the district court is given jurisdiction to review, by proceedings in error, an order of the State Board of Health revoking the license of a physician.

The Supreme Court commissioners in writing the opinion of this case say that a licensee does not necessarily have a property or contractual right in his privilege, so as to render a revocation of his license a judicial act, but they think that the legislature confers a quasi property or contractual right by providing that revocation shall be only for specified cause or causes arising out of the conduct of the licensee and analogous to a forfeiture, the declaration of which is essentially a judicial act. This view does not, of course, involve a limitation of the power of the legislature to revoke the license by direct enactment.

Death from Compressed Air Being Turned on Person.

The Court of Civil Appeals of Texas says that what is now entitled the case of the Galveston, Harrisburg & San Antonio Railway Co. vs. Currie was brought to recover from the company for the death of an employé alleged to have been caused by compressed air being injected into his bowels from a compressed-air hose turned on him by his foreman. It was true that this seemed to have been a result of an application of compressed air to a person that staggered the comprehension of the physician who testified in the case, who said he did not believe it possible for a hose of the size of the one in question to so overcome the sphincter muscle as to allow air to rush into the bowels of the employé, but he went on to say that it did. It was probably safe to say from the evidence that the foreman did not expect the air to penetrate the employé so as to cause his death or do him any real harm. But the act was the direct and proximate cause of the employé's death, and in such cases it does not affect the liability of the wrongdoer that the consequence of his act was something unforeseen or improbable. The act was calculated or likely to do some injury, and as this was the case it was necessary that injury in the precise form in which it in fact resulted should have been foreseen. Moreover, the court considers that under all of the circumstances the railway company could be held liable for the death, and so affirms a judgment against it for damages therefor. And it says that it was immaterial that in turning the hose on this employé the foreman was prompted by a spirit of fun.

Relative Powers of Examining Board and Courts.

The Supreme Court of Idaho holds, in the case of Raaf vs. State Board of Medical Examiners, that, under the act approved March 3, 1899, known as the "State Medical Law," the State Board of Medical Examiners, in the examination of applicants for a license to practice medicine and surgery, is required to exercise judgment and discretion in granting or refusing licenses to such applicants, and in so doing exercises quasi judicial functions. The state medical law contains no provision granting the right of appeal from the action of the board of examiners in refusing a license to an applicant, but by the terms of section 9 of the act it is provided that the action of the board in refusing to grant a license under the provisions thereof may be reviewed by the district court on certiorari, as it is called, provided proceedings therefor are instituted within ten days after notice of such refusal. By conferring the right to have the action of the board in refusing to grant a license reviewed, as provided in section 9 of the act, the legislature has indicated an intention to limit and confine the authority and jurisdiction of the courts in considering the action of the board to the procedure and scope of investigation and inquiry usually and ordinarily pursued and exercised by the courts in the issuance and consideration of writs of review. The legislature has provided for a board of experts learned in medicine and surgery for the purpose of examining applicants for license to practice within the state, and the language of the medical act and the purposes and objects thereof preclude any inference that the legislature ever intended that a disappointed applicant might apply to the court and there have his answers re-examined, marked, graded and passed on as to their correctness by the court. The courts are open to compel action by the State Board of Medical Examiners when they fail or refuse to act, and to review their authority where they have assumed to exercise powers not conferred; but the courts will not review and re-examine matters in which the board is called on to exercise judgment and discretion, and perform quasi judicial functions in reference thereto.

The legislature, the court says, had in view the protection of the health of the people of the state, and, as a means to effect that end, determined that all persons thereafter intending to enter the practice of medicine and surgery should

be examined as to their fitness, learning and qualifications by a board of experts learned in the science and art of that particular profession. Is it at all probable that the legislature ever intended that a disappointed applicant might apply to the court and there have his answers re-examined and passed on by one unlearned, perhaps, in a single one of the branches of this science? Courts are neither required nor expected to be experts in therapeutics, gynecology, toxicology, diagnosis, etc., and for them to undertake to examine and grade physicians on such branches would be an unwarranted assumption of jurisdiction. The layman, wandering among the puzzling mazes of materia medica and the speculative bewilderments of pathology, might with equal assurance and conscientiousness grade an applicant who had correctly answered all the questions at 10 per cent., and one who had correctly answered none at 100 per cent. As to the plaintiff's contention that, since he had introduced in evidence what he claimed were correct text-book answers to the questions, the court could have a standard by which to examine and grade answers, the court says that this would hold good so long as the answers of the applicant might be in the same language as the answers which were shown to be correct, but the moment the applicant's answer branched out into different language, and his own mode of expression, a court, not proficient in the science of a profession characterized by abundant technical language and phraseology, would encounter perplexities and difficulties unnumbered.

Again, the court says that there are no set, fixed or inviolable rules by which such a board must determine whether a question has been answered correctly or incorrectly. Knowledge must be brought to bear and judgment must be exercised. The science of medicine is not such an exact and immutable science but that those who are eminent and learned in the profession often differ in a diagnosis, or as to what would be an absolutely correct answer to a given question. It is a progressive science. This is one of the chief considerations for requiring such examinations to be conducted by those who are proficient and learned in the profession. If the board should fail to act when it is its duty to act, the courts are open to enforce action. If it acts without jurisdiction, the courts are open to inquire into and review the authority they have assumed to exercise. The court can not, however, under the medical law of Idaho, be converted into a board for the examination of applicants for a license to practice medicine and surgery. Questions of bias or prejudice existing in the mind of any member of the board against an applicant or of incompetency of a member, or of errors and mistakes of judgment or unfairness in marking and grading an applicant's papers are matters that may be properly addressed to the executive authority from which they receive their appointment, who may take such action thereon as the best interests of the public demand.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 16.

1 Neurons and Neurofibrills. J. Collins and G. E. Zabriskie, New York.
2 *The Lenhartz Treatment of Gastric Ulcer at the Eppendorfer Krankenhaus. J. V. Haberman, Hamburg, Germany.
3 *Treatment of Stammering. E. L. Kenyon, Chicago.
4 *The Stomach Douche and Its Application. M. Gross, New York.
5 *Diphtheria Antitoxin in Chorea. B. F. Hamilton, Emlenton, Pa.
6 Reichenhall, Bavaria: A Climatic Resort. L. Gruenwald, Munich, Bavaria.

2. **Lenhartz Treatment of Gastric Ulcer.**—Haberman gives the following treatment of gastric ulcer: Absolute rest in bed for at least four weeks; avoidance of all mental excitement; the almost continual use of an icebag over the stomach for two weeks; the administration of between 200 and 300 c.c. of iced milk, given in spoonfuls and from two to four beaten eggs; the administration, for 10 days, of 2 gm. of bismuth subnitrate at a dose. The eggs are beaten up entire, with a little sugar and the dish containing them is placed in a receptacle filled with ice; sometimes a little wine is added. This food at once "binds" the supersecretive acid, mitigates the pain, and causes the vomiting to cease. After a few days some raw chopped meat is given. In the third week quite a mixed diet is allowable.

3. **Treatment of Stammering.**—Kenyon advances three main ideas in his discussion of the treatment of stammering: First, education that the patient may consciously learn how to handle his speech apparatus; second, discipline, that he may overcome a firmly-rooted and stubborn habit; and, third, correction of general organic disability, and of peripheral abnormalities, in order that the delicate mechanism of speech may not be physically interfered with. The patient must at once be made a student of normal speech from the standpoint of the technic of its production. This new knowledge must be immediately put into practice. Speech is now no longer automatic, but becomes a function governed in detail by the consciousness and the will. The patient will gain control of his speech mechanism and direct it in detail. But even then the subconscious nervous structures must be held well in hand until they can be entrusted to assume control. This defect should be corrected at an early stage and firmness of purpose on the part of the patient is one of the important elements in its successful treatment.

4. **Application of Stomach Douche.**—Gross gives as the strict indications for the introduction of the stomach tube for therapeutic purposes: Acute toxic inflammations, intoxications, and ileus; old mucous or non-mucous gastric inflammations; a small number of sensitive neuroses, hyperesthesias, chronic ulcerative affections, erosions; anomalies of secretion, or chylorrhea; and disturbances of motility in both atonic and mechanical gastrectasia. The tube which Gross has used during the last few years differs from the ordinary stomach tube in that it is provided with an end opening and a number of small, pinhead-sized lateral holes which perforate the walls of the tube in different directions. The action of this stomach douche is mechanico-chemical, thermic, or both. A loose hard rubber valve is placed at the large end aperture, which it tightly closes as the fluid is injected. As the upper end of the tube is lowered, the outflowing stream pushes the valve up.

5. **Diphtheria Antitoxin in Chorea.**—Hamilton saw a case of diphtheria in a boy 15 years old, about nine years ago. The patient had suffered from an aggravated form of chorea for several months. He gave the boy full doses of diphtheria antitoxin, after which the choreic symptoms disappeared and did not return. The boy lived only one week. Recently Hamilton attended a young man who suffered from chorea following rheumatism. Delirium developed into a violent mania, and it was plain that unless relief was soon afforded, death was not far distant. Three thousand units of diphtheritic antitoxin were administered, after which the choreic symptoms were so much relieved that all restraint was removed. After two more doses, the first of 1,500 and the second of 2,000 units of antitoxin, all irregular muscular symptoms subsided and have not yet returned. It is now over a month since this treatment was instituted.

New York Medical Journal.

June 16.

7 The Skene Monument. A. Jacobi, New York.
8 D'Arsonval and Other High Frequency Currents, What They Are and What They Will Do. H. G. Piffard, New York.
9 *Surgical Treatment of Chronic Indigestion. J. B. Deaver, Philadelphia.
10 Arteriosclerosis; Its Relation to Disease and Disordered Function of the Nervous System. (To be concluded.) J. Collins, New York.
11 *Treatment of Acute Otitis Media Purulenta and Mastoiditis, by Means of Artificially Induced Hyperemia (Bier's Method). S. J. Kopetzky, New York.
12 Critical Analysis of 186 Operations on the Liver and Gall Passages and the After Results. C. A. McWilliams, New York.
13 Value of the Blood Count in Sepsis. F. E. Sondern, New York.
14 *An Unmentioned Means of Puerperal Infection. G. W. Greene, Auburn, N. Y.

9. **Surgical Treatment of Indigestion.** According to Deaver, the problems of the proper treatment of chronic indigestion can only be worked out by the physician and surgeon together.

Very many cases of chronic indigestion—gastric, biliary or appendicular—are really a form of surgical disease, and those which do not yield within a reasonable time to rational medical treatment, Deaver believes can almost without exception be promptly and permanently cured by surgery. The surgeon, if called into consultation early, may decide with the aid of his medical colleague not only which are proper cases for surgical intervention, but also at what period of the disease surgical remedies had best be advised.

11. Bier's Method in Acute Purulent Otitis Media.—Kopetzky claims that the Bier bandage applied early in cases of acute otitis media, with or without complicating mastoiditis, is a measure productive of good results in cases selected among the young and the otherwise healthy.

14. Puerperal Infection.—Greene reports a rather unique case of puerperal infection the result of an infection conveyed by the husband, who was in the habit of making almost daily vaginal examinations for the purpose of noting the course of the pregnancy. At that time the husband was handling hides for a hide merchant, but as his ambition was to become a physician, he had in some way gained possession of a book on obstetrics, which he had read. The labor was perfectly normal, but two days later the patient was taken with a chill, which was followed by a terrible attack of puerperal fever. The woman eventually recovered, but was perfectly blind in one eye and partially so in the other from an intercurrent attack of optic neuritis. Greene is convinced that the germs were carried from the filthy hides which the husband handled to his wife's genital tract.

The Boston Medical and Surgical Journal.

June 14.

15 *The Medical Profession and the Issues which Confront It. W. J. Mayo, Rochester, Minn.
16 Hyperemia Treatment of Congested and Inflamed Tissues. E. H. Bradford, Boston.
17 Sanitary and Moral Prophylaxis. P. A. Morrow, New York.

St. Louis Medical Review.

June 9.

18 *The Medical Profession and the Issues which Confront It. W. J. Mayo, Rochester, Minn.
19 Early Diagnosis of Pulmonary Tuberculosis. A. Dixon, Jr., El Paso, Texas.

15 and 18. See THE JOURNAL, June 9, 1906, page 1737.

Lancet-Clinic, Cincinnati, Ohio.

June 16.

20 Influence of Pregnancy on the Various Neuroses and Psychoses. H. F. Gau, Cincinnati.
21 Prevention of Smallpox. G. B. Twitchell, Cincinnati.

American Journal of Obstetrics and Diseases of Women and Children, New York.

June.

22 *Etiology of Puerperal Sepsis. J. D. Voorhees, New York.
23 Pathology of Puerperal Infection. F. A. Dorman, New York.
24 *Treatment of Puerperal Infection. E. B. Cragin, New York.
25 Two Cases of Bilateral Dermoid Cysts; One Showing Carcinomatous Degeneration, the Second Complicated by the Presence of an Eighty-One Pound Multilocular Ovarian Cyst. C. C. Norris, Philadelphia.
26 Causes and Treatment of Metrorrhagia, with Special Reference to the Use of Schatz's Metranolkter and Atmokausis. J. C. Hirst, Philadelphia.
27 *Tuberculous Infection of Uterine Myomata. T. G. Dickson, Troy, N. Y.
28 Conservative Surgery of the Uterine Adnexa. J. N. West, New York.
29 *Effect of Surgical Operations on Those Insane. I. Broun, New York.

22. Etiology of Puerperal Sepsis.—Voorhees concludes that the etiology of puerperal fever can be traced, in almost all cases, to external infection—imperfect technic; but that there are a few cases for which the medical attendants are in no way responsible and that must be attributed to so-called autoinfection.

24. Treatment of Puerperal Infection.—Cragin calls attention to extragenital sources of infection during the puerperal period, such as appendicitis, pyelitis from the colon bacillus and mastitis. If a rise of temperature does not subside as the breast improves, the uterus should be investigated. Two conditions must be recognized. First, a toxemia due to the absorption of (1) a product of putrefactive bacteria, or (2) the toxins of distinctively pathogenic bacteria. Second, a bacteriemia, in which bacteria circulate in the blood. Every case should be considered as a toxemia until evidence to the contrary is obtained. The uterus should be emptied, if possible, by the intrauterine route; if not, by the finger or the curette, the finger being preferred. A form of toxemia is due to the retention of the uterine flow by marked anteflexion. The treatment of puerperal bacteriemia is chiefly that of the general condition. Of drugs, alcohol and strychnin have given Cragin the best service. The use of silver preparations appears to be harmless but inefficient, and the same may be said of antistreptococcus serum. The author makes it a rule never to perform a hysterectomy for puerperal infection during the puerperium unless he can obtain evidence of the localization of the infection with pus formation either in the uterine wall or in the appendages.

27. Tuberculous Infection of Uterine Myomata.—Dickson reports a case in which a myoma of the uterus was tuberculous, the infection having reached the tumor probably from the endometrium. The tuberculosis of the tube was apparently primary and a descending infection of the endometrium.

29. Surgical Operations on the Insane.—Broun concludes that if the operation, when needed, has been properly done and the patient is not mutilated by an uncalled-for castration, the mental condition is never exaggerated. Under the stimulus of the improved somatic state resulting from surgical relief and hygienic treatment some of the patients show greater mental changes under the moral and therapeutic care than was known before such relief was given. At times this improved mental state continues to one of recovery. The primary object of surgical operations on the insane should be to improve the physical status of the patient with one end only in view—that of relieving them of physical suffering and nervous disturbances. If as a result of this relief they are mentally improved it is a welcome sequel, one for which the surgeon feels doubly repaid.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial feeds are omitted unless of exceptional general interest.

British Medical Journal.

June 2.

1 Pathology of the Thyroid Gland. H. Kocher.
2 Dystrophy of Tabes and the Problem of Trophic Nerves. W. R. Gowers.
3 *Three Cases of Ruptured Uterus Treated by Abdominal Section and Suture. W. H. Cripps.
4 *Three Cases of Tubal Pregnancy. C. H. Whiteford.
5 Case of Repeated Extrauterine Gestation on Same Side. A. Goodall.
6 Case of Puerperal Septicemia Due to the Diplococcus Pneumoniæ. G. B. Smith and N. J. Spriggs.
7 Etiology of Granuloma Pudendi. K. S. Wise.
8 Syphilis and Cancer and Some Protozoa. J. J. Clarke.
9 Severe Punctured Wound of Lower Jaw. E. G. Wales.

3. Abdominal Section for Rupture of Uterus.—Cripps reports three cases. The first patient, a multipara, had a placenta previa which was followed by rupture of the uterine wall, the tear being in the right lateral aspect posteriorly. It included the entire length of the cervix, extending upward for several inches into the lower uterine segment and downward into the upper aspect of the vagina. The patient died immediately after the last suture had been inserted. At the autopsy the uterine wall showed evidence of considerable fatty infiltration of the muscular fibers. The second patient, also a multipara, had a tear about four inches in length, extending from the vaginal fornix upward to nearly the site of origin of the Fallopian tube. The case was one of breech presentation and the rupture occurred before the birth of the child. The patient was operated on immediately and made a perfect and uninterrupted recovery. In the third case the tear extended from immediately below the fundus to the neighborhood of the internal os. This patient also recovered.

4. Tubal Pregnancy. The first case reported by Whiteford is an example of the variety in which after rupture of the tube the blood being slowly and intermittently poured out is limited to the lower abdomen by adherent omentum and intestines, from which are derived the bacteria which infect the blood clot. The second case is an example of the fulminating type of hemorrhage following rupture. The third case illustrates what is probably the most usual condition found after

rupture of the tube, not involving the death of the fetus, which continues to develop between the layers of the broad ligament.

The Lancet, London.

June 2.

10 Pathologic Investigation of the Causation of Insanity. F. W. Mott.
11 Preservation of Health Among the Personnel of the Japanese Navy and Army. B. Takaki.
12 Pathology of the Thyroid Gland. H. Kocher.
13 *Primary Malignant Disease of the Vermiform Appendix. H. D. Rolleston and L. Jones.
14 *X-Ray Diagnosis of Kidney Stones.. C. T. Holland.
15 Case of Persistent Cloaca. O. M. Elgood.
16 *Rare Injury to the Wrist-Joint. A. S. Morley.
17 Use of Rubber Gloves in Medical Wards. T. W. Clarke.
18 Case of Angioneurotic Edema. C. A. P. Truman.
19 Hygiene of the Tissues; Hygiene of the Alimentary Canal. E. Metchnikoff.

13. **Malignant Disease of the Appendix.**—Rolleston and Jones have collected 62 supposed examples of primary malignant disease of the appendix. After carefully excluding those not confirmed by the microscope and those which may have been primary in the cecum, the number is reduced to 42, of which the diagnosis was carcinoma in 37 cases, endothelioma in 3, and sarcoma in 2. In most of these the condition was found during an operation, but 9 examples were discovered at necropsy or as the result of a routine examination of the appendix afterward. In only 5 of the 42 cases were secondary growths described as being present.

14. **X-Ray Diagnosis of Kidney Stone.**—Holland sums up his paper as follows: 1. When a stone or stones are present in such size as to produce symptoms suggesting the desirability of operation, if a careful and thorough examination is made such stone or stones can nearly always be shown by *x*-rays. And this would also apply to the presence of stone even if the symptoms alone were not sufficient to demand operation. 2. In most cases when shadows are shown the size, shape and position can be relied on in diagnosing them as from kidney or ureteral stones. In other cases when doubt may arise as to the cause of the shadows the experience of the examiner will often settle the matter and in some cases stereoscopic radiography, the use of ureteral bougies, etc., can be used as a help. 3. The negative diagnosis can be relied on only when the whole region on both sides is carefully examined and when the plates are taken under the essential condition for successful examination and when they are of the necessary quality in showing sufficient differentiation of the soft structures in the kidney and ureteral regions. 4. There can be no justification for operation or prolonged medical treatment without an efficient *x*-ray examination being made.

16. **Rare Injury to Wrist.**—The case reported by Moreley was one of complete fracture of the scaphoid bone with forward dislocation of one of the fragments, necessitating its removal. The outer half of the bone remained in articulation with the trapezium and trapezoid.

Bulletin de l'Académie de Médicine, Paris.

20 (Year LXX, Nos. 19-20.) Improved Mask for Ethyl Chlorid General Anesthesia. L. Camus.
21 *Histoire de 3 aneurysmes guéris par la médication hypotensive. H. Huchard.
22 *Recherches sur la syphilis. E. Metchnikoff and E. Roux.
23 First-Aid Package.—Boîte de secours immédiat. Quidet.
24 Glycerin Aging of Vaccine.—Vieillissement glycériné du vaccin. Kelsch.

21. **Aneurisms Cured by Reducing Arterial Tension.**—The three aneurisms described were in the left subclavian in the first case, and involving the brachial and cephalic arteries and the aorta in the second and the thoracic aorta in the third. Treatment included rest in bed, regulation of the diet and drugs to reduce the arterial tension and to dilate the vessels. The diet was restricted to milk, or milk and vegetables, avoiding everything that could generate toxins. Drugs were given to keep the arterial tension continuously below normal. The trouble, Huchard says, is in the aorta and arterial system, but the danger lies in the kidneys. When the kidneys become affected with sclerosis, arterial hypertension follows. Appropriate preventive treatment of the kidneys, including restriction to a more or less rigorous milk diet, favors the elimination of the vasoconstricting toxins and aids in preventing hypertension. The benefits in the 3 cases reported were prompt and durable, the patients having been under observation for from four to eight years. One was a syphilitic of 61, the others were a woman of 45 and a man of 37.

22. **Research on Medicinal Prophylaxis of Syphilis.**—This communication was summarized in the news columns on page 1779. It seems that several persons volunteered for the experiments, and the one selected intends to relate his experiences as his thesis. Neisser was not always successful in preventing the development of syphilis in monkeys after inoculation followed by application of the mercurial salve. Metchnikoff's experiments all resulted positively. He aimed to reproduce the natural conditions so far as possible, although the inoculations were necessarily much deeper and more intensive than under natural conditions. Neisser made them much less superficially than in the Paris experiments. The results of the prophylactic inunctions were positive in 50 per cent., even under these extreme conditions.

Presse Médicale, Paris.

25 (XIV, No. 34.) *The Senile Kidney.—Rein sénile. A. Létienne.
26 *La maladie de Banti. Suleiman Nouman bey.
27 (No. 41.) *L'occlusion intestinale. H. Roger and Garnier.
28 (No 42.) Le syncytium. C. Jeannin.
29 *Origine intestinale des adénopathies trachéo-bronchiques tuberculeuses. A. Calmette, C. Guérin and A. Delearde.

25. **The Senile Kidney.**—Létienne concludes his study of this subject with the remark that it is not age that induces senility in the kidney, but the vicissitudes which it has to undergo. It may be long undermined without any clinical manifestations, and succumb abruptly to some "last straw." He relates a few case histories to show the great benefit to be derived from a milk diet in arterial atheroma and the concomitant nephritis in the aged. In some cases the symptoms developed suddenly in the midst of apparent health in men of 67 or 72. In one instance after getting chilled one night in coming out from a warm room, a sudden, subacute edema of the lung developed in the course of a few minutes, rapidly fatal, revealing the hitherto unsuspected kidney changes.

26. **Splenic Anemia.**—This communication from Constantinople describes 3 cases of "Banti's disease" in which the patients were cured by treatment as for malaria.

27. **Intestinal Occlusion.**—Roger and Garnier have succeeded in isolating toxic substances from an extract of the small intestine which induce convulsions and reduce the arterial pressure when injected into the veins of animals. The existence of these toxic substances in the walls of the intestines explains certain clinical phenomena observed in case of intestinal occlusion. The liver is able to neutralize moderate amounts of these intestinal toxins for a certain length of time. When the amount is excessive the liver proves inadequate for the task and symptoms appear. Intravenous injection of the toxins causes no symptoms so long as the liver is taking care of them, but the moment finally arrives when it becomes exhausted and symptoms develop exactly similar to those observed in human intestinal occlusion. The experiments have demonstrated that the symptoms observed can not be due to microbian putrefaction.

29. **Intestinal Origin of Tuberculous Tracheo-Bronchial Glandular Affections.**—In this article Calmette and his co-workers relate that inoculation of laboratory animals with mesenteric glands from children presenting tuberculous tracheobronchial glandular affections always revealed the presence of tubercle bacilli in the mesenteric glands, even when the latter were apparently sound. They found that a single small dose of bovine tubercle bacilli given to calves and kids in their food passed through the intestinal wall and were retained in the mesenteric glands for a time. Sooner or later, however, the tracheo-bronchial or retropharyngeal glands became enlarged with or without pulmonary lesions. During all this time the mesenteric glands remained apparently sound. Inoculation of guinea-pigs with these glands, however, revealed the presence of tubercle bacilli. In the cadavers of 3 children who had not presented any clinical evidences of tuberculosis, inoculation of animals likewise revealed tubercle bacilli in the mesenteric glands. The authors conclude that as the mesenteric glandular infection

precedes the development of the glandular lesions in the respiratory apparatus, the latter, as well as pulmonary tuberculosis in children and in adults, must be regarded as the result of infection with tuberculosis by way of the intestines. The hypothesis of infection by inhalation has not yet been positively proved, but it is becoming more and more evident that children and adults contract tuberculosis by ingesting the milk of tuberculous cows or from food contaminated with bacilli or with particles of tuberculous sputa of human origin.

Semaine Médicale, Paris.

30 (XXVI, No. 22.) *Les pseudo-perforations de l'utérus au cours des opérations intra-utérines. R. de Bovis.

30. **Pseudo-perforations of Uterus.**—That relaxation of the uterine musculature can occur, with or without enlargement of the uterine cavity, is an established physiologic fact. When observed in course of a gynecologic operation it appears as if the uterine wall had been perforated by the instrument. This deceptive appearance is particularly apt to occur when there is some adjuvant factor such as the weakening or especial thinness of the uterine wall, special reflex inhibitions, such as are liable in case of dilatation of the cervix, and negative intra-abdominal pressure. A number of cases have been related in which a sound was inadvertently passed into one of the tubes. In case of an actual perforation, the tip of the instrument can be palpated through the abdominal wall and palpation causes a pricking sensation. This sensation is absent in case of a pseudo-perforation, as the uterus and its walls have no actual sensibility while the parietal peritoneum is extremely sensitive. In case of true perforation the peritoneum is liable to react instantaneously with signs of irritation. In Pollak's case there was a chill at once and the pulse ran up to 160 and became almost imperceptible. Mauclaire also observed in one case an almost immediate change of expression and sudden increase in the pulse rate. The international literature on the subject is reviewed.

Beiträge zur Geb. und Gynäkologie, Hegar's Leipsic.

Last indexed, page 1976.

31 (X, No. 1.) Ueber Uterussarkom mit sekundärer multipler Karzinombildung. E. Sehrt.
32 Ueber babituellen Ikterus gravis Neonatorum. Lagrèze.
33 Chorionic-ectodermic Proliferation of Placenta.—Die Chorionektoderm-Wucherungen der menschlichen Plazenta, ihre Beziehungen zu der Entstehung der Cysten und Fibrinknoten der Plazenta. G. Schickele.
34 Ueber vorgetäuschte Deciduabildung in der Cervix (simulated decidua formation). L. Seitz.
35 Obstetric Aids.—Ueber Hilfsmittel zur Förderung der räumlichen Vorstellung in der Geburtsbilfe. H. Sellheim.
36 Changes in Decidua, etc., in Pregnancy Complicated by Myoma.—Die Veränderungen der Decidua und der Placenta in der mit Myomen komplizierten Schwangerschaft. C. Pinto.
37 *Gastric Inhibition of Labor.—Gastrische Wehenschwäche. F. A. Kehrer.
38 Ueber den histologischen Bau der kindlichen Eihäute bei normalem, vorzeitigem und verspätetem Blasensprunge (fetal membranes). A. Hauptmann.

37. **Gastric Inhibition of Labor.**—Kehrer is convinced that when the digestive energies of the stomach are taxed much the force of the uterine contractions is correspondingly reduced. His research has demonstrated this to be a general law, and he discusses the causes for it. One plausible hypothesis is that the hyperemia in the stomach, the consequence of the ingestion of food, diverts the blood from the uterus. This hypothesis is sustained by certain phenomena he has observed in animals. In the clinic he has found that a heavy meal is frequently followed by subsidence of the labor pains. He has found further that if the stomach can be hastily emptied by induced vomiting, the labor pains acquire new energy. These facts confirm the importance of eating lightly as labor is impending. He advises small frequent meals, mostly if not entirely restricted to fluid foods. He adds that the rarity, in Germany, of the onset of labor during the afternoon may possibly be explained by the usual heavy noon dinner.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

39 (XXXII, No. 18.) *Ueber eine örtliche Giftwirkung des Phenylhydroxylamin (local toxic action). L. Lewin.
40 *Ueber die Prophylaxe der Magenblutungen (gastric hemorrhages). L. Boas.
41 *Stretching the Palate in Treatment of Mouth Breathing and Occlusion of Tubes.—Gaumendehnung nach Schröder in Kassel. Löhnberg.
42 *Treatment of Inflammation with Partial Congestion and Compression.—Ueber partielle Stauung und Druckbehandlung bei Entzündungen. Heermann.
43 *Exploratory Drilling.—Probebohrung als diagnostisches Hilfsmittel. J. Plesch.
44 *Salt Solution Ready to Infuse.—Infusionsbomben. H. M. Marcus, Vienna.

39. **Spread of Poisons by Way of the Lymphatics.**—Lewin used his thumb as a stopper in shaking a vial containing a concentrated solution of phenylhydroxylamin, a blood poison. The thumb swelled thereafter, as also the adjacent parts, and there was a painful inflammation which did not subside for eight weeks. The swelling and pain followed the superficial lymphatic vessels of the region.

40. **Prophylaxis of Gastric Hemorrhage.**—Boas' assertions in regard to the great diagnostic value of minute traces of blood in the stools and stomach content have been chronicled in these columns. (See pages 433 and 1348 of vol. xliii, 1904.) He has found that these occult hemorrhages, as he calls the presence of invisible traces of blood, are the precursors of large hemorrhages in the majority of cases. It is extremely important, therefore, to detect this premonitory bleeding. He preaches that physicians should examine for it as systematically as they now examine the urine for albumin or sugar. Discovery of the occult blood is an alarm signal and should be met by prompt measures. The patient must stay in bed until the blood vanishes from the feces. This is hastened by a strict milk diet. In the severer cases, ice to the stomach region and rectal injections of a 10 or 20 per cent. solution of calcium chlorid are indicated, with cold packs and possibly injections. The Leube-Ziemssen treatment with hot applications he would positively restrict to cases of ulcers past the hemorrhagic stage. He has witnessed injury from them while the ulcer was still bleeding. Examination for the occult blood in the stools or stomach content is also a most valuable index of the success of treatment and the progress toward recovery. The only trouble is the difficulty of deciding whether the traces of blood found proceed from the tissues or from food. The technic for the detection of the blood has not yet been perfected to such a point as to differentiate human from animal blood, but even with this drawback the guaiac-turpentine and the aloin tests are exact enough for practical purposes. He mentions also the benzidin test described by Adler, Schumann and Westphal (*Zeit. f. physiol. Chemie*, XLI and XLVI), which is based on the same principle of oxidation.

41. **Treatment of Mouth Breathing by Stretching the Palate.**—Löhnberg regards stretching the palate as a notable advance in the treatment of mouth breathing and of chronic occlusion of the tubes. It enlarges a congenitally narrow passage and one that has become occluded from disease. He describes in particular the case of a child of nearly 5 who was cured of the adenoid expression and was able to breathe through its nose and to hear better after the palate was stretched. The growth of the teeth under normal conditions was also favored

42. **Partial Passive Congestion and Compression in Treatment of Inflammations.**—Heermann states that he has been much pleased with the results of applying loose constriction above an inflammatory focus. The constriction should not be tight enough to induce actual passive congestion, but only to cause a partial arrest of the circulation. He had noticed that inflammation did not spread if the part were thus partially shut off from the general circulation. This technic might be combined with the Bier technic, but it has the advantage that it does not require the close supervision necessary with the latter. In addition he mentions that the healing of fistulas and abscesses past the acute inflammatory stage is promoted by pressing the walls together at the bottom of the cavity. He has also derived great benefit from a method of tamponing an inflammatory focus after incision. The incision is left open and the pressure applied around it, the results being more rapid healing and better restitution.

43. **Exploratory Drills.**—The useful little drills for boring into the bones and soft parts are no larger than an exploratory puncture needle.

44. **Salt Solution Ready to Use.** The bulb holds a pint or quart of sterile salt solution ready for infusion; the projecting glass tubes are fused.

GENERAL INDEX.

All reading matter in THE JOURNAL from January to June, inclusive, 1906, is indexed here. (For Current Medical Literature Index see pages 2050 to 2092.) All societies, congresses, etc., are grouped under the general subject of "Societies" at the end of the letter "S." Similarly, all "Deaths" and all "Book Notices" are indexed under those titles at the ends of the letters "D" and "B," respectively. Matter pertaining to the Association is under "Association News." With the above exceptions, all matter is indexed under the most important word of the heading that was used in THE JOURNAL. It is, therefore, well to remember that in looking up a certain subject, related words should be consulted, for example, nostrum, patent-medicine, proprietaries, proprietary medicines. The letters used to explain in which department the matter indexed appeared are as follows: "E", editorial; "O", original article; "T", therapeutics; "P", pharmacology; "Ml", medicolegal; and "ab" denotes an abstract of an article that has appeared in full elsewhere.

ASSOCIATION NEWS.

B

BOOK NOTICES.

C

DEATHS.

F

G

H

I

J

K

N

SOCIETIES.

Abbreviations:

Acad.—Academy.
Am.—American.
A.—Association.
Coll.—College.
Conf.—Conference.
Cong.—Congress.
Dist.—District.
Hosp.—Hospital.
Internat.—International.
M.—Medical, Medicine.
Nat.—National.
Phys.—Physicians.
Ry.—Railway.
S.—Society.
Surg.—Surgical, Surgery, Surgeons.

Acad. of M. of Dayton (Ohio), 284
Acad. of M. of Jefferson Co. (Ky.) Louisville, 1213
Acad. of M. of Southwestern Mich., 593
Æsculapian S. of the Wabash Valley, 1777
After-care A., 895
Allegan Co. (Mich.) M. A., 610
Allegany Co. (Md.) M. S., 1214
Allegheny Co. (Pa.) M. S., 1385
Alumni A. of Albany (N. Y.) M. Coll., 1451
Alumni A. of Charity Hosp., New Orleans, 1619
Alumni A. of Drake University (Iowa) M. Coll., 1772
Alumni A. of Jefferson M. Coll., Philadelphia, 1776, 1938
Alumni A. of the M. Coll. of the State of S. C., Charleston, 1386
Alumni A. of the M. Department of the University of Ga., 1448
Alumni A. of the University of Md. School of M., 823, 1773
Am. Acad. of M., 1624, 1771
Am. A. of Genitourinary Surg., 1777
Am. A. of M. Journal Advertisers, 820
Am. A. of Pathologists and Bacteriologists, 1624, 1938
Am. Climatological S., 1624
Am. Confederation of Reciprocating, Examining and Licensing Boards, 1394
Am. Dermatological A., 49, 1119, 1777
Am. Gastroenterological A., 893, 1538, 1847
Am. Gynecological S., 1789, 1966, 2017
Am. Laryngological, Rhinological and Otological S., 730, 826, 1121
Am. M. Editor's A., 1940
Am. Medico-Psychological A., 368, 968
Am. Pharmaceutical A. Philadelphia Branch, 1043
Am. Proctologic S., 1538
Am. S. for the Study of Alcohol and Narcotics, 1538
Am. S. of Sanitary and Moral Prophylaxis, 1043
Am. S. of Tropical Med., 148, 812, 1252
Am. Surg. A., 1777, 2015
Am. Therapeutic S., 1624
Am. Urological A., 1043
Anglo-Am. M. A., 596
Anne Arundel Co. (Md.) Branch of the Md. A. for the Prevention and Relief of Tuberculosis, 368
Antiquack League, 1706
Ariz. M. A., 1556
Ark. M. S., 1038, 1292, 1640, 1936
Ark. Tenth Councilor Dist. M. S., 1038
Ashland Co. (Ohio) M. A., 1215
Ashtabula Co. (Ohio) M. S., 1120
Associated Phys. of Long Island (N. Y.), 663
A. of Am. Anatomists, 1295
A. of Am. M. Coll., 982
A. of Am. Phys., 1641, 1721, 1792
A. of French M. Legislators, 1299
A. of M. Officers of the Army and Navy of the Confederacy, 1624
A. of the French-Speaking Phys. of North Am., 1778
A. of Trustees and Phys. of State and Incorporated Hosp. for the Insane of Pa., 1621
Atantic City (N. J.) Acad. of M., 284
Atlantic Co. (N. J.) M. S., 284
Auglaize Co. (Ohio) M. S., 48
Australasian M. Cong., 446
Baltimore Co. (Md.) M. A., 1619
Baltimore M. & S. A., 368
Barberton (Ohio) M. A., 1120
Beaver Co. (Pa.) M. S., 370
Black Hills (S. D.) M. A., 1121
Blackwell (Rochester, N. Y.) M. S., 1119
Blair Co. (Pa.) M. S., 1461
Boston A. for the Relief and Control of Tuberculosis, 127, 296
Boston City Hosp. Alumni A., 518
Boston M. Library, 64, 220, 746
Boston S. of Med. Sciences, 283
Brainerd Dist. (Ill.) M. S., 1212
Bristol (Conn.) M. A., 609, 982
British Columbia M. A., 1939
British M. A., 371, 596, 1217, 1538
British M. A., St. John (N. B.) Branch, 1298
Bronx (N. Y.) M. S., 663
Brown-Redwood Co. (Minn.) M. A., 1293
Bucks Co. (Pa.) M. S., 899
Buncombe Co. (N. C.) M. S., 48, 1629

T

U

CURRENT MEDICAL LITERATURE

INDEX OF TITLES

Explanation: The reading matter which appeared in THE JOURNAL is not indexed here, except the original articles and the abstracts of original articles. This index includes the titles and the subjects of original articles published in the leading medical journals of the world during the past six months. The titles and the names of the journals in which they appeared were published weekly in the Current Medical Literature Department, to which references are made. The figures in parentheses refer to the paragraph; the number following, to the page in THE JOURNAL. For instance, "Hernia, results of operation for radical cure of, (12) 1402—ab" refers to page 1402 of THE JOURNAL, on which is found opposite paragraph 12 the title of the paper and the name of the author, viz., "Results of Operation for Radical Cure of Hernia. J. Hutchinson." This title is listed under the journal in which the article appeared, *The Lancet*, London, April 7. The "ab" indicates that an abstract of the article appeared in THE JOURNAL, which will be found below the title on page 1402. Titles of articles which appeared in THE JOURNAL are indicated in the index below by an asterisk (*) before the page number. For instance, "Calculus, Diagnosis of Renal. *851," refers to page 851 of THE JOURNAL, on which is found the following: "The Diagnosis of Renal Calculus. Guy L. Hunner." Index to authors of all the articles below is on pages 2080 to 2092 of this index.

E

I

N

Roentgen-ray in some non-malignant superficial lesions, (17) 1476
  rationale of, (64) 1061
Roentgen-rays, additional observations on use of, in dermatology, (115) 1063
  and radium in epithelioma, (51) 1323
  an experimental study of effects of, on blood-forming organs, (141) 1479
  discussion of restriction of medical use of the, to physicians, (25) 622
  in diagnosis of urinary calculus, (21) 837
  in external treatment, (4) 538
  in malignant disease, (99) 1326—ab
  lymphatic sarcoma cured by, (44) 759—ab
  mode of action of, (84) 920
  present position of, in medicine and surgery, (20) 1145
  production and therapeutic value of, (91) 1889
  treatment, collective review of, of surgical and cutaneous affections since March, 1906, (78) 1978—ab
  treatment of arthritis-deformans with, *1512
  treatment of mediastinal carcinoma with the, (4) 615—ab
  value of, in surgical diagnosis, (57) 1972
Romonoscopy, practical value of, (67) 234
Rupture at cornea-scleral junction, (61) 548

S

Sac, formation of hernial, by the obliterated hypogastric artery, (72) 543
Saccharoscope, (45) 78—ab
Sacral region, atypical conditions in, (117) 237
Sacroiliac-disease, case of, in child, with operation, (34) 913
Safety-pin, open, swallowed by infant six weeks old, and successfully passed by bowel six days later, (15) 912
  safely passed by child of sixteen months, *121
Sahli-desmoid-test, recommendation of, of stomach functioning, (80) 1068—ab
Sahli's desmoid test of chemistry of stomach, (62) 760—ab
Sahli's remarks on, desmoid test of stomach, *1434
Sahli's test of chemistry of stomach, (49) 623
Salary, the doctor's, (57) 1565
Salerno, a day in, (102) 1730
Salicylate of sodium, efficiency of, in inflammatory eye diseases, (143) 1401
Saline injections in prophylaxis and treatment of typhoid and cholera, (20) 309—ab
  solution, rôle of, in treatment of pneumonia, (21) 304—ab
  solutions, therapeutic value and mode of action of physiologic, (119) 1479
Salivary gland, inflammation of, (34) 1064
Salpingitis, acute Eustachian, (76) 74
  and parametritis, clinical observations on, in nulliparæ, (2) 1970—ab
Salt, reduction of, in diet in scarlet fever, (31) 1976—ab
  reduction of, in treatment of dropsy of pregnancy, (76) 1807—ab
  solution, ready to use, (44) 2024—ab
Salts, therapeutic action of chemic, (66) 288
Salves, absorption of, by skin and vagina, (86) 1483
Sanatoria, observations of tuberculosis, in the West, (69) 619—ab
  state and tuberculosis, (3) 1645
Sanatorium Long Island open air (107) 1889
Sanatoriums and dispensaries, sphere of, in antituberculosis struggle, (90) 388
  economic value of (12) 389—ab
  educational influence and significance of, for cases of incipient tuberculosis, (104) 1889
Sanatoriums for consumptives, (13) 389
  objects and limitations of, for consumptives, (9) 389—ab
San Diego as a health resort, (138) 1401
Sanitaria and tent-colonies, *1435
Sanitarium, historical sketch of movement to establish state, in Missouri for incipient tuberculosis, (86) 1566
  treatment in, need of, for consumptive poor, (136) 468
  visit to the Barlow, in Los Angeles, (83) 467
Sanitary and moral prophylaxis, (17) 2022
Sanitation, co-operative, (101) 308
  of Japan's navy, (132) 468
San Jacinto trails, (97) 160
Santonin, test for, in urine, (48) 1805—ab
Sapremia, (28) 305
Sarcoma, case of primary, of lung, (12) 1321
  congenital, of orbit, *1287
  generalized multiple pigmented, originating in skin, *1911
  in young child, *654
  late results of treatment of inoperable, by mixed toxins of erysipelas and bacillus prodigiosus, (54) 1061—ab
  lymphatic, cured by Roentgen rays, (44) 759—ab
  macroscopic, microscopic, and radiographic evidences of bone, (125) 1566
  medullary giant cell, with cyst of lower end of ulna, (72) 160
  of anterior segment of globe, (29) 229—ab
  of choroid, (96) 1479
  of kidney in children, (131) 1401
  of rectum, (51) 1245—ab
  of tibia, (111) 543
  of vagina, (31) 758—ab
  primary, of pleura and lung in a young girl, (60) 1401
  surgery of, (17) 1975
  surgery of, in Kashmir, (6) 1974—ab
  vaginal, in childhood, (53) 1653—ab
Sarsaparilla, therapeutic value of, in syphilis, (6) 1402—ab
Scalp, differentiation of (so-called) seborrheic conditions of, (114) 991
Scaphoid, fracture of, (66) 1148
Scapula, congenital elevation of, (33) 918
  interscapulothoracic amputation for sarcoma of, (11) 1970
Scarlatina, diphtheria antitoxin in, (6) 463—ab
Scarlet-fever, complications of, (1) 916—ab
  complications of, icterus and, (61) 624
  etiology and symptomatology of, (111) 1889
  Moser's polyvalent serum in, (59) 391
  prophylaxis of, (115) 836
  reduction of salt in diet in, (31) 1976—ab
  serum treatment of, (49) 547, (87) 548, (36) 759
  treatment of, (54, 55, 56, 57) 914—ab, (98) 1572—ab
Schistosoma hematobium in Canal zone, *881
  japonicum vel cattoi, occurrence of, in Philippine Islands, (74) 1144
Scholarship, individual, (135) 1802
School children, necessity for annual systematic examination of eyes, ears, nose and throats of by school teachers, (84) 307
  life in relation to health, (106) 74
Schools, organization and control of training, (12) 1476—ab
Schultze clearing method as used in anatomic laboratory of Johns Hopkins University, (83) 1566
Sciatica, (117) 1730
  morbid gait in, (62) 392
  radicular, (27) 1891—ab
  successful simple surgical treatment of, (79) 1896—ab
  traumatic, (116) 1802
Sciatica, two cases illustrating, of abdominal origin, laparotomy, (13) 468—ab
Science, experimental method in sanitary, and sanitary administration, (1) 912—ab
Sclerema, neonatorum, (67) 915
Sclerosis, paranephritic, its etiology, symptoms and treatment, (56) 1972
Scoliosis, improved technic for mobilization of spine in, (91) 1149—ab
  infantile, (45) 690
  treatment of, (62) 471
Scopolamin in obstetrics, (42) 233
Scopolamin-morphin anesthesia, (73) 166—ab, (80) 314—ab, (114) 1401, (20) 1650
  anesthesia in ophthalmic surgery, (35) 617
  as adjuvant to general anesthesia, (24) 1563
  chloroform anesthesia, (21) 1141—ab
  ethyl-ether anesthesia, (55) 618—ab, (46) 988
  four years of experience with, as a general anesthetic, (84) 620—ab
Scorbutus, beriberi and, (72) 1484—ab
  bone changes in, (80) 472
  case of, recovering and case of gastroenteritis terminating fatally, (31) 988
  infantile, *1073
Scotoma, examination for central, (66) 543
Scrofula, (61) 391, (88) 1729—ab
  arsenic-iodid in treatment of, (19) 162—ab
Scrofuloderma, concentrated carbolic-acid in treatment of, and furunculosis, (61) 79-ab
Scrotum, gangrene of, (58) 467
Scurvy, case of infantile, *258, (16) 1140—ab, (21) 1975
  etiologic study of, (105) 1736—ab
  infantile, (139) 160
  sporadic, a complication of cecal tuberculosis, (50) 1976
  two cases of infantile, *1991
  two case of subperiosteal hemorrhage of the orbit from, (64) 543
Seasickness, atropin and strychnin combined, a specific for, *1925
  new physical treatment of in, (67) 472—ab
Section, embolism following abdominal, (34) 1318—ab
  factors which further convalescence after abdominal, (28) 1563
  technic of vaginal, (67) 1800
Sections, 100 consecutive abdominal, without a death, (69) 835—ab
Segmentation, cerebral, (8) 1
Seizures, cerebral, with suboccipital pain, (13) 1059—ab
  epileptiform, of pleural origin, (26) 1891—ab
Self-infection, puerperal, (51) 470, (42) 471—ab, (70) 839
Seminal vesicles, early forms of tuberculosis of, (68) 1324
Senility, (37) 918
  and arteriosclerosis, (42) 1403
Sensibility, conduction of, in spinal cord, (34) 838
  to pressure, heat, etc., (30) 77 ab
Sentiment and science, (56) 755
Separation, epiphyseal, of great trochanter, (35) 1727
Sepsis, (28) 465—ab
  Aronson's antistreptococcus serum in, (55) 78
  bacteriology of puerperal, (21) 76—ab
  case of, in newborn infant, (56) 230—ab
  case of pneumococcus, (33½) 157
  double, (136) 238—ab
  early diagnosis and treatment of puerperal, (6) 1476—ab
  etiology of puerperal, (22) 2022—ab
  oral, (10) 917
  puerperal, (20) 75, (144) 688, (82) 756, (15) 1651
Septicemia and endocarditis, gonorrheal, (33) 157—ab
  case of acute meningococcal, (13) 1651
  collargol in, (62) 311
  fatal, due to ophthalmia neonatorum (69) 231
Sepsis from autoinfection treated with hot horse serum, (33) 234—ab
  general and septicemia meningococcic, (31) 918
  puerperal (16) 228, (111) 756
Septum, elevator, speculum and forceps for use in submucous resection of nasal, (38) 466—ab
  forceps and knife for use in submucous, operation, (54) 989
  indications for submucous resection of nasal, (130) 1320
  instruments for submucous resection of, (133) 1320
  new instruments for submucous resection of, (53) 989
  operation for straightening nasal, (127) 1320
  submucous operation with reference to resection operation (71) 1649
  submucous resection of illustrated, (50) 1142—ab, (101, 102) 1802—ab
  submucous resection of nasal, with Ballenger's swivel knife, (103) 1802
  submucous window resection of nasal, (94) 160, (147) 161
Serotherapy, five years of antityphoid, (38) 1403—ab
Serum, action of tuberculous, and of antibacillary serum in resistance of organism to tuberculous infection, (93) 1326—ab
  an antigonococcus, effective in treatment of gonorrheal rheumatism, *261
  antidysenteric, (23) 1322—ab
  antistreptococcus, by rectum, (105) 74
  cytotoxic, produced by infection of nucleoproteids, (84) 160
  disease, (73) 472
  egg albumin, and broth, adjuvant action of, on tetanus intoxication, (68) 1240
  hemolytic power of syphilitic, before and after mercurial treatment, (85) 625
  Marmorek's antituberculosis, (57) 1733
  note on influence of antitoxin, on tuberculo-opsonic index, (14) 1890
  preparation and use of antimeningococcus, (94) 1979—ab
  preventive and curative use of antitetanus, (150) 998—ab
  properties of antityphoid obtained from goats, (3) 1566
  prophylactic and therapeutic use of antistreptococcus, (97) 841—ab
  resistance of, relation between, and virulence, (158) 160
  results of use of polyvalent antistreptococcus, of Moser, (78) 472
  therapy, (22) 988
  therapy and study of blood, (77) 472
  therapy by the mouth, (5) 1731—ab
  treatment of gonorrheal rheumatism by an antigonococcus, *263
  value of Doyen's in cases of malignant disease, (10) 1402—ab
  value of antistreptococcus in streptococcic infection of lung, (117) 308
Serums, hemolytic, (29) 690
Sewage, collection and preservation of samples of, for analysis, (91) 916
  practical advantages of Gooch crucible in determination of total and volatile suspended matter in, (92) 916
  resistance to decomposition of certain organic matters in, (93) 916
Sexes, proportion of, in children born, (74) 840
Ships, disinfection, (12) 831
  hospital and their working in peace and war, (11) 1651
Shock and its treatment, (55) 230
  genesis of, (74) 625
  treatment of, with reference to extramural cases, (42) 386
  treatment of with reference to strychnin, (40) 386
Shoes and feet (18) 303

CURRENT MEDICAL LITERATURE

INDEX OF AUTHORS

In this index are the names of the authors of articles which have appeared in THE JOURNAL of the American Medical Association and of articles which have been listed from week to week in the Department of Current Medical Literature as having appeared in other journals. Thus it practically includes the names of all who have published articles in the leading journals of the world during the past six months. The * preceding the page reference indicates that the article appeared in full in THE JOURNAL. The numbers in parentheses indicate the numbered paragraphs on the page referred to. The numbers not in parentheses indicate pages.

A

B

G

H

M

N

O

P